

# Oracle® Fusion Cloud EPM

## Administering and Working with Enterprise Profitability and Cost Management



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Oracle Fusion Cloud EPM Administering and Working with Enterprise Profitability and Cost Management,  
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# Contents

Documentation Accessibility

---

Documentation Feedback

---

## 1 Creating and Running an EPM Center of Excellence

---

## Part I Getting Started with Enterprise Profitability and Cost Management

---

## Part II Creating and Managing Applications

---

## 2 Creating an Enterprise Profitability and Cost Management Application

---

Application Design Best Practices	2-1
About Creating an Application	2-1
Configuring Your Environment	2-2
Selecting What Type of Application to Create	2-3
Creating the Sample Application	2-3
Creating a New Application	2-4
Entering a Name and a Description	2-5
Setting Up the Calendar	2-5
Setting Up Currencies	2-8
Reviewing Application Information	2-9

## 3 Managing Applications

---

Application Overview	3-1
Managing Cubes	3-2
About Cubes in Enterprise Profitability and Cost Management	3-2
Creating Cubes	3-3
Clearing Cubes	3-4

About Clearing Cubes	3-4
Creating Clear Cube Jobs	3-4
Submitting a Clear Cube Job	3-5
Deleting a Clear Cube Job	3-5
Scheduling Clear Cube Jobs	3-6
Improving Cube Performance	3-7
Compacting the Outline	3-8
Merging Data Slices	3-8
Optimizing Aggregation for the PCM_CLC Calculation Cube	3-9
Optimizing Aggregation for the PCM_REP Reporting Cube	3-9
Managing Dimensions	3-11
Dimension Overview	3-11
About Dimensions and Members in Enterprise Profitability and Cost Management	3-11
About Dimension Hierarchies	3-12
Hierarchy Types	3-13
Dimension Top Levels	3-14
Best Practices When Designing Dimensions	3-14
Creating a Dimension	3-14
Accessing the Dimension Editor	3-15
Reviewing Dimensions	3-16
Editing Dimension Properties	3-18
Working with Members	3-19
Adding Members to a Dimension	3-19
Adding "No<dimname>" Members	3-20
Editing Member Properties	3-20
Deleting Members	3-21
Adding Shared Members	3-21
Assigning Access to Dimension Members	3-22
Working in the Edit Member Properties Grid	3-24
Working with Attributes	3-31
About Attributes	3-31
Understanding Attribute Data Types	3-31
Creating an Attribute Dimension	3-32
Adding or Editing Attribute Dimension Members	3-33
Working with User-Defined Attributes (UDAs)	3-33
Importing and Exporting Dimension Metadata	3-34
Importing Metadata	3-35
Exporting Metadata	3-40
Viewing Activity Reports	3-41
Importing and Exporting Data	3-42
Importing Data	3-42

Driver Member Casting Errors	3-44
Exporting Data	3-45
Viewing Data Import and Export Status	3-46
Importing Exchange Rates for a Multicurrency Application	3-46
Uploading and Downloading Files Using the Inbox/Outbox Explorer	3-47
Refreshing the Application Database	3-48
Validating Metadata	3-49
Removing an Application	3-50

## 4 Managing Application and System Settings

---

About Managing Application and System Settings	4-1
Application Settings	4-1
System Settings	4-4
Calculation Options Settings	4-7
Defining Logical Clear Versus Physical Clear	4-8
Enabling Allocation Rule Non Empty Tuple	4-8

## 5 Defining Valid Intersections

---

Understanding Valid Intersections	5-1
Valid Intersection Groups	5-1
Valid Intersection Rules	5-1
Anchor and Nonanchor Dimensions	5-2
Valid Intersection Examples	5-2
Redundancy or Overlap in Valid Intersection Rules	5-5
Shared Members and Valid Intersection Rules	5-6
Substitution Variables and Valid Intersection Rules	5-6
Evaluation Order	5-6
Creating Valid Intersections	5-6
Managing Valid Intersections	5-7
Viewing Valid Intersections	5-8
Filtering Valid Intersections	5-9
Importing and Exporting Intersections	5-9
Changing the Valid Intersection Group Evaluation Order	5-12
Disabling and Enabling Valid Intersection Groups	5-12
Editing Details for a Valid Intersection Group	5-13
Duplicating Valid Intersection Groups	5-14
Deleting a Valid Intersection Group	5-14
Suppressing Invalid Data in Forms	5-15
Clearing Invalid Data	5-15

About Invalid Data	5-15
Working With Invalid Intersection Reports	5-15
Clearing Data at Invalid Intersections	5-16
Working with Valid Intersections	5-16
Working with Valid Intersections in Application Forms	5-16
Working with Valid Intersections in Calculation Manager Rule Runtime Prompts	5-18

## 6 Administering Data Integration

---

Creating File-Based Integrations	6-1
Defining Data Maps	6-1

## 7 Managing Jobs

---

About Jobs	7-1
Job Types	7-1
Accessing the Jobs Console	7-7
Viewing Pending Jobs and Recent Activity	7-7
Scheduling Jobs	7-8
Scheduling Jobs to Run Now	7-9
Scheduling Jobs to Run Later	7-9
Scheduling Hourly Jobs	7-11
Editing and Deleting Jobs	7-13
Exporting Job Console Files	7-14
Exporting Supplemental Diagnostics	7-14

## Part III Building and Calculating Models

---

### 8 Creating and Managing Models

---

About Models	8-1
Creating a Model	8-2
Managing Models	8-3
Generating a Model Documentation Report	8-4
Generating a Model Comparison Report	8-6

### 9 Creating and Managing Rules

---

About Rules	9-1
Types of Rules	9-2
Rule and Rule Member Considerations	9-3

Dimension and Member Requirements When Creating Rules	9-3
Understanding Model and Rule Set Context	9-5
Understanding How System Dimensions Are Used in Rules	9-10
Overview of the PCM_Rule and PCM_Balance System Dimensions	9-10
PCM_Rule Dimension	9-10
PCM_Balance Dimension	9-11
Understanding PCM_Balance Dimension Members	9-12
PCM_NetBalance	9-12
PCM_Remainder	9-12
PCM_System	9-13
PCM_Balance Example	9-14
Creating Allocation Rules	9-16
About Creating Allocation Rules	9-16
Creating an Allocation Rule Definition	9-19
Defining an Allocation Rule Source and Destination	9-20
Best Practices for Allocation Rule Source and Destination	9-21
Defining an Allocation Source	9-21
Defining an Allocation Destination	9-23
Managing Filters for Source and Destination Members	9-26
Allocation Source/Destination Example	9-27
Defining an Allocation Rule Driver	9-28
Best Practices for Allocation Rule Drivers	9-29
Allocation Driver Example	9-29
Defining an Allocation Rule Offset	9-30
Best Practices for Allocation Rule Offsets	9-31
Allocation Offset Example	9-31
Validating Allocation Rules	9-31
Running a Rule Data Validation Report for Allocation Rules	9-32
Using Ad Hoc to Analyze Allocation Rule Data	9-35
Creating Custom Calculation Rules	9-35
About Creating Custom Calculation Rules	9-36
Creating a Custom Calculation Rule Definition	9-37
Defining a Custom Calculation Rule Target	9-38
Managing Filters for Target Members	9-39
Formula Syntax for Custom Calculation Rules	9-40
Skipping Empty Tuples to Optimize Custom Calculations	9-42
Validating Custom Calculation Rules	9-44
Using Ad Hoc to Analyze Custom Calculation Rule Data	9-44
Creating Rule Sets	9-45
About Rule Sets	9-45
Rule Set Design Best Practices	9-45

Creating a Rule Set	9-46
Creating Multiple Rules	9-47
Creating Multiple Rule Sets	9-49
Using the Rule Designer	9-50
About the Rule Designer	9-50
Using the Waterfall Setup Tab	9-50
Editing a Rule or Rule Set	9-51
Copying a Rule or Rule Set	9-52
Deleting a Rule or Rule Set	9-53
Using the Mass Edit Tab	9-53
Filtering Which Rules Are Displayed	9-54
Adding Members to Rules	9-56
Replacing Members in Rules	9-57
Copying Rules to a Rule Set	9-59
Copying Rules to a Model	9-59
Enabling and Disabling Rules	9-60
Viewing Rules Jobs	9-61
Viewing Rule Definitions	9-62
Renaming Rules	9-63

## 10 Running Model Validation

---

About Model Validation	10-1
Validating Models	10-1
Validation Errors and Warnings	10-2

## 11 Calculating Models

---

About Calculating Models	11-1
Understanding Points of View	11-2
Using the Calculation Control Page	11-2
Filtering Which Points of View Are Displayed	11-3
Creating a Point of View	11-6
Editing a Point of View	11-7
Deleting a Point of View	11-8
Clearing a Point of View	11-9
Copying a Point of View	11-10
Viewing Point of View Jobs	11-12
Calculating a Model	11-13
Viewing Run Calculation Jobs	11-15



Canceling a Calculation Job	11-17
-----------------------------	-------

## 12 Analyzing Calculations

---

About Calculation Analysis	12-1
Filtering Which Calculation Records Are Displayed	12-3
Generating a Calculation Statistics Summary Report	12-5
Generating a Calculation Statistics Diagnostics Report	12-6
Generating a Model Snapshot Documentation Report	12-10
Generating a Compare Snapshot with Current Model Report	12-12
Generating a Compare Model Snapshots Report	12-13
Creating a Model from a Snapshot	12-14
Editing Comments	12-15
Re-Running Calculations	12-16
Providing Feedback	12-17

## 13 Viewing Rule Balancing Reports

---

About Rule Balancing	13-1
Designing Data Forms for Rule Balancing	13-1
Best Practices for Designing Rule Balancing Data Forms	13-3
Generating a Rule Balancing Report	13-6

## Part IV Analyzing Data

---

### 14 Working with Data in Forms

---

You Enter Data in Forms	14-3
About Forms Versions	14-4
Opening Forms	14-5
Exporting Data to Microsoft Excel	14-6
Working in Forms 1.0	14-7
Selecting Different Data to Work With	14-7
Understanding Form Colors	14-7
Viewing Server Status on Forms	14-7
Navigating Quickly in a Form	14-8
Basics of Working With Data	14-9
About Entering Data	14-10
Dynamically Setting User Variables	14-12
Using Data with Forms	14-12
More Ways to Manipulate Values	14-15

Entering Data for Suppressed or Excluded Members	14-15
Getting the Latest Data	14-18
About Calculating Data	14-18
How Totals are Calculated	14-18
Reviewing Data	14-18
Personalizing How Data Displays	14-19
Printing Data	14-20
More About Working With Data	14-21
Viewing Member Formulas	14-21
Working with Business Process Data in Excel	14-21
Drilling Through to Source Data	14-23
Cell Icons	14-24
Resolving Data Validation Errors	14-24
Pushing Data for Reporting	14-25
About Cell Comments	14-25
Working with Attachments	14-26
Searching for Forms, Dashboards, and Infolets	14-26
Why Cells May Be Read-Only	14-27
Seeing What's Changed	14-28
Working in Forms 2.0	14-28
Working with the Global Toolbar in Forms 2.0	14-29
Working with the Quick Toolbar in Forms 2.0	14-31
Working with POVs in Forms 2.0	14-32
Opening the Member Selector in Forms 2.0	14-35
Performing Calculations Without Having to Submit Your Changes (Calc on the Fly)	14-36
Printing Data in Forms 2.0	14-38

## 15 Working with Reports

---

About Reports	15-1
Accessing Reports and Viewing the Reports Repository	15-1
Managing Folders and Reports	15-2
Reports Books and Bursting	15-3
Managing Fonts	15-4

## 16 Working with Dashboards

---

Designing Dashboards	16-2
The Power of Dashboards	16-4
Creating and Managing Dashboards	16-6
About Dashboard Versions	16-6

Viewing Dashboards	16-7
Converting Dashboard 1.0 Dashboards to 2.0	16-9
Creating and Managing Dashboards 1.0	16-10
Concepts in Designing 1.0 Dashboards	16-11
Creating Dashboard 1.0 Dashboards	16-13
Creating Dashboards Containing Master Forms and Details	16-15
About Your Dashboard's Layout - Version 1.0	16-15
About the Gauge Chart Type	16-16
About the Tile Chart Type	16-18
Customizing Dashboard Colors	16-19
About Global and Local POVs in 1.0 Dashboards	16-20
Dashboard POVs and Valid Intersections	16-22
Creating and Managing Dashboards 2.0	16-22
Concepts in Designing Dashboard 2.0 Dashboards	16-23
Considerations for Dashboard 2.0	16-33
Creating Dashboard 2.0 Dashboards	16-35
Working with the Member Selector When Designing Dashboards 2.0	16-35
About Forms 2.0 Grids in Dashboard 2.0	16-36
About the Geomap Chart Type	16-37
About the Pyramid Chart Type	16-39
About the Waterfall Chart Type	16-40
Using Tables in Dashboards	16-42
About the Gauge Chart Type for Dashboard 2.0	16-44
About the Radar Chart Type for Dashboard 2.0	16-47
About the Combination Chart Type for Dashboard 2.0	16-49
About the Tile Chart Type for Dashboard 2.0	16-50
About Global and Local POVs in Dashboard 2.0	16-52
About Quick Analysis	16-55
Using Dashboards to Work with Data	16-57
Understanding Dashboards	16-58
About Dashboard Versions	16-59
Viewing Dashboards	16-61
Working with Dashboard 1.0 Dashboards	16-63
Working with Dashboard 2.0 Dashboards	16-64
Working with the Dashboard 2.0 Global Toolbar	16-65
Working with Dashboard 2.0 Components	16-66
Working with Forms 2.0 Grids in Dashboard 2.0	16-67
Drilling Through on Charts and Legends	16-69
Working with POVs in Dashboard 2.0	16-70
Opening the Member Selector in Dashboards 2.0	16-72
Working with Dashboard 2.0 Dashboards in Navigation Flows	16-73

Working with Master Forms and Details in Dashboard 2.0 Components	16-73
Support for Valid Intersections in Dashboard 2.0 Dashboards	16-74
About Quick Analysis	16-74

## 17 Viewing Key Information with Infolets

---

About Infolets	17-1
Anatomy of an Infolet	17-3
About Infolet Views	17-6
About the Infolet Dots	17-7
Determining Infolet Content	17-7
Designing Forms for Infolets	17-8
Designing Charts for Infolets	17-8
Using the Infolets Designer	17-9
Creating Infolets	17-12
Working with Infolets	17-13
Customizing the Interface to Access Infolets	17-14
Setting Your Default Infolet	17-15

## 18 Using Ad Hoc for Data Entry and Analysis

---

Get Started Performing Ad Hoc	18-1
Creating an Ad Hoc Grid	18-2
Submitting Ad Hoc Data and Saving the Grid Definition	18-3
Performing Calculations Without Having to Submit Your Changes (Calc on the Fly)	18-4
Accessing an Ad Hoc Grid	18-7
Designing Ad Hoc Grids	18-7
Opening the Member Selector in Ad Hoc Grids	18-7
Selecting Period-to-Date Members	18-8
Filtering Column Members	18-10
Pivoting Dimensions	18-11
About Shared Members	18-12
Zooming in on Shared Members	18-13
Setting Properties for Ad Hoc Grids	18-14
Ad Hoc Grid Keyboard Shortcuts and Quick Data Entry Commands	18-17
Applying Rules to Ad Hoc Grids	18-18
Adding Comments and Attachments	18-18
Adjusting Values	18-19
About Using Line Item Details	18-19
Adding Line Item Details	18-20
Working with the Structure of Line Item Details	18-21

Order of Line Item Details	18-22
Incorrectly Entering Line Item Details	18-22
Correctly Entering Line Item Details	18-23
Totaling When Line Item Details Cells are Blank	18-23
Printing Ad Hoc Grids	18-24
Using Free-Form Ad Hoc	18-24

## 19 Working with Profit Curves

---

About Profit Curves	19-1
Designing Data Forms for Profit Curves	19-2
Creating a Profit Curve	19-4
Managing Profit Curves	19-5
Generating Profit Curves	19-6

## 20 Tracing Allocations

---

About Trace	20-1
Designing Data Forms for Trace	20-2
Viewing Allocation Trace Results	20-4

## 21 Using Smart View to Import and Edit Application Metadata

---

About Using Smart View to Work with Application Metadata	21-1
Using Smart View Grids to Import and Edit Application Metadata	21-1
About the Smart View Grid	21-2
The Smart View Grid and Ribbon Display	21-2
Guidelines for Using the Smart View Grid	21-4
Default Metadata Dimension Member Properties	21-5
Importing Dimensions in Smart View	21-7
Importing Dimensions in Smart View for Office	21-7
Importing Dimensions in Smart View (Mac and Browser)	21-8
Editing Members in Smart View	21-10
Adding Application Members in Smart View	21-11
Adding Members in Smart View	21-11
Guidelines for Adding Members in Smart View	21-12
Moving Members in Smart View	21-13
Guidelines for Moving Members in Smart View	21-13
Working with Attribute Dimensions	21-14
Adding Attribute Dimension Members in Smart View	21-14
Adding Attribute Dimension Members in Smart View for Office	21-14
Adding Attribute Dimension Members in Smart View (Mac and Browser)	21-16

Designating Shared Members in Smart View	21-18
Refreshing Databases	21-18
Refreshing Databases in Smart View for Office	21-19
Refreshing Databases in Smart View (Mac and Browser)	21-19
Planning Admin Extension and Office AutoCorrect	21-21

## Part V Using Tools

---

## Part VI Creating and Managing Business Rules

---

### 22 Using Business Rules

---

Creating, Validating, and Deploying Business Rules	22-1
Managing Business Rule Security	22-2
Assigning Access to Individual Business Rules	22-2
Assigning Access to Folders Containing Several Business Rules	22-3
Enabling Business Rules Notification	22-4
Launching Business Rules	22-4
Launching Business Rules From the Business Rules Page	22-5
Launching Business Rules From a Form	22-5
Adding and Removing Rules in Forms	22-5
Setting Business Rule Properties	22-6
Launching Business Rules From the Job Scheduler	22-7
Launching Business Rules from Dashboards 1.0	22-8
Viewing Rules Usage	22-8

### 23 Resources for Designing Groovy Business Rules

---

About Groovy Business Rules	23-1
Java API Reference for Groovy Rules	23-2
Groovy Business Rule Examples	23-3
Groovy Business Rule Tutorial Videos	23-3
Groovy Business Rule Tutorials	23-4
Groovy Rule Business Scenarios	23-6
Moving Modified Data Using Groovy Rules and Smart Push	23-6
Calculating Modified Data Using Groovy Rules	23-12

## Part VII Administrative Tasks Accessed from the Navigator

---

## Part VIII Setting Up Access Permissions and Data Security

---

### 24 About Managing Access and Data Security

---

About Predefined Roles	24-2
About Application Roles	24-3
Managing Application Ownership	24-4

### 25 Working with Access Permissions

---

Types of Access Permissions	25-1
About Assigning Access Permissions	25-3
Adding, Changing, and Removing Permissions to Artifacts and Folders	25-4
Enabling or Disabling Security for Dimensions	25-4
Assigning Security to Dimension Members	25-5
About Effective Access Permissions to Shared Members	25-6
Defining Cell-Level Security	25-7
Understanding Cell-Level Security	25-8
Creating Cell-Level Security Definitions	25-8
Viewing Cell-Level Security Definitions	25-10
Filtering Cell-Level Security Definitions	25-10
Importing and Exporting Cell-Level Security Definitions	25-11
Testing Cell-Level Security	25-13
Reordering the Cell-Level Security Definitions List	25-14
Reporting on Access Permissions	25-14

## Part IX Appendices

---

### 26 Best Practices

---

### 27 Frequently Asked Questions (FAQ) about Enterprise Profitability and Cost Management

---

### 28 Using the Member Selector

---

About Selecting Members	28-1
Selecting a Dimension	28-1
Defining Member Display Options	28-2

Searching for Members	28-5
Filtering Which Members Are Displayed	28-7
Filtering by Attributes	28-8
Filtering by Level	28-9
Filtering by Generation	28-10
Filtering by Member Relationship	28-11
Member Relationships	28-13
Making Member Selections	28-14
Selecting Members for Forms 1.0 and Dashboards 1.0	28-19
About Selecting Members for Forms 1.0 and Dashboards 1.0	28-19
Member Relationships	28-19
Selecting Members	28-21
Considerations When Selecting Members	28-22
Selecting Attribute Values as Members	28-23
Selecting Substitution Variables as Members	28-26
Selecting User Variables as Members	28-27

## 29 Naming Restrictions

---

Naming Restrictions for Applications and Databases	29-1
Naming Restrictions for Dimensions, Members, and Aliases	29-2
Dimension and Member Names in Calculation Scripts, Report Scripts, Formulas, Filters, and Substitution Variables	29-5
Restrictions for User and Group Names	29-6

## 30 Migrating from Profitability and Cost Management to Enterprise Profitability and Cost Management

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# 1

## Creating and Running an EPM Center of Excellence

A best practice for EPM is to create a CoE (Center of Excellence).

An **EPM CoE** is a unified effort to ensure adoption and best practices. It drives transformation in business processes related to performance management and the use of technology-enabled solutions.

Cloud adoption can empower your organization to improve business agility and promote innovative solutions. An EPM CoE oversees your cloud initiative, and it can help protect and maintain your investment and promote effective use.

The EPM CoE team:

- Ensures cloud adoption, helping your organization get the most out of your Cloud EPM investment
- Serves as a steering committee for best practices
- Leads EPM-related change management initiatives and drives transformation

All customers can benefit from an EPM CoE, including customers who have already implemented EPM.

### How Do I Get Started?

Click to get best practices, guidance, and strategies for your own EPM CoE: [Introduction to EPM Center of Excellence](#).

### Learn More

- Watch the Cloud Customer Connect webinar: [Creating and Running a Center of Excellence \(CoE\) for Cloud EPM](#)
- Watch the videos: [Overview: EPM Center of Excellence](#) and [Creating a Center of Excellence](#).
- See the business benefits and value proposition of an EPM CoE in *Creating and Running an EPM Center of Excellence*.



# Part I

## Getting Started with Enterprise Profitability and Cost Management

### Related Topics

- [About Enterprise Profitability and Cost Management](#)
- [About Enterprise Profitability and Cost Management Applications](#)
- [Launching the Application](#)
- [About the Home Page](#)
- [Using Dynamic Tabs](#)
- [Considerations When Using the Application Interface](#)
- [Downloading and Installing Smart View](#)

### Video

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#### Your Goal

Get an introduction to the key features in Enterprise Profitability and Cost Management.

#### Watch This Video



[Getting Started with Enterprise Profitability and Cost Management](#)

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## About Enterprise Profitability and Cost Management

To maximize profitability, a business must be able to accurately measure, allocate, and manage costs and revenue.

Enterprise Profitability and Cost Management is an analytic software tool that manages the cost and revenue allocations that are necessary to compute profitability for a business segment, such as a product, customer, region, or branch. Enterprise Profitability and Cost Management enables you to use cost decomposition, consumption-based costing and scenario-playing to measure profitability for effective planning and decision support.

Enterprise Profitability and Cost Management uses an Oracle Essbase cube to store and calculate data. The application data and calculated results can be output in the following EPM analytic tools:

- Dashboards
- Infolets
- Forms
- Profit Curves
- Allocation Trace

- Oracle Smart View for Office
- Reports

## Video

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### Your Goal

Learn how Enterprise Profitability and Cost Management can help unburden your general ledger and speed up your financial close, while providing transparency and traceability to your operational and management reporting.

### Watch This Video



[Overview of Enterprise Profitability and Cost Management](#)

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# About Enterprise Profitability and Cost Management Applications

Enterprise Profitability and Cost Management applications are designed for use by analysts who have deep domain experience in the computation and reporting methods of management reporting, but who may not have much experience with Oracle Essbase and scripting syntax or programming languages.

To model cost and revenue flows with Enterprise Profitability and Cost Management, you must understand the following essential concepts:

- **Dimensions:** Data categories in an underlying database used to organize data for retrieval and preservation of values. Dimensions usually contain hierarchies of related members grouped within them. For example, a Period dimension often includes members for each time period, such as Quarter or Month.
- **Application:** A related set of dimensions, dimension members, and modeling elements that are used to meet a specific set of analytical or reporting requirements.
- **Modeling elements:** Application parts used in an Enterprise Profitability and Cost Management application that apply allocation logic to data that is identified by dimensions and members. Modeling elements include cost allocation rules and analysis definitions that reflect existing or proposed business cases.

Together these elements organize the allocation points in the application into a logical flow. Careful modeling can capture the actual processes and activities, enabling you to realistically allocate costs and revenues.

An Enterprise Profitability and Cost Management application is a representation of part or all of an organization, and contains costs and revenue categories that are similar to the organization's chart of accounts and general ledger. Enterprise Profitability and Cost Management applications enable you to accurately trace the processes and activities that contribute to costs and revenue within the organization.

 **Note:**

Enterprise Profitability and Cost Management applications are separate and independent from Profitability and Cost Management applications. There is no impact to Profitability and Cost Management applications or environments.

## Launching the Application

A Service Administrator is responsible for providing the unique URLs to users.

Customers provisioned to EPM Enterprise Cloud Service instances will use URLs similar to the following to access their environments:

- **Production environment URL:** `https://epm-idDomain.epm.dataCenter.oraclecloud.com/epmcloud`
- **Test environment URL:** `https://epm-test-idDomain.epm.dataCenter.oraclecloud.com/epmcloud`

For example, for Oracle Enterprise Performance Management Cloud environments provisioned with identity domain `exampleDoM` in `exampleDC` data center, the URLs may be as follows:

- **Production environment:** `https://epm-exampleDoM.epm.exampleDC.oraclecloud.com/epmcloud`
- **Test environment:** `https://epm-test-exampleDoM.epm.exampleDC.oraclecloud.com/epmcloud`

This is a change from previous versions of EPM Cloud where each application used a separate context to access environments. See Sample EPM Cloud URLs in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

## About the Home Page

The Home page is the launch point for accessing your business process tasks.

The Home page displays your most common tasks and tools represented as home page cards or in clusters that group related cards together. When you open a page, related cards are displayed along the top so you can easily get to them without returning to the Home page.

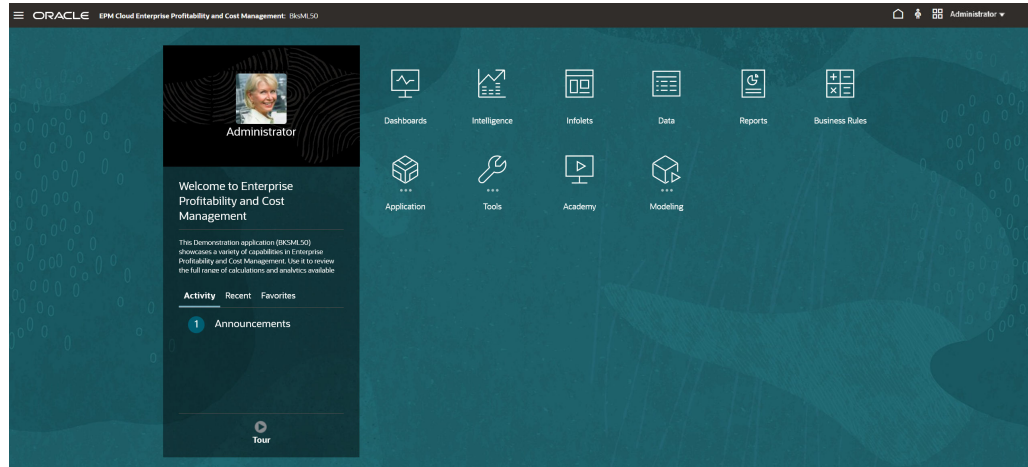
From the Home page:

- *Service Administrators* can create applications, create dimensions, load dimensions into the application, enable localization and accessibility, install and configure clients, and set up user access.
- *Power Users* can create POVs, load data, create rules, validate models, run calculations, and validate results.
- *Users* can create reports, dashboards, analytics, and model views; trace allocations; and create profit curves.

- *Viewers* can view reports, dashboards, analytics, and model; trace allocations, and view profit curves.

All newly created or re-created Oracle Enterprise Performance Management Cloud services, business processes, and applications use the Redwood Experience as the default theme. To add a branding logo or a custom background image to the Home page, select **Tools**, and then **Appearance**. You can also select whether to display the name of your business process.

### Example of the Home Page







### Global Header

The global header is the area that stretches across the top of the user interface. It contains navigation icons as well as access to accessibility settings and the **Settings and Actions** menu. You can also switch between navigation flows from the global header.



Global Header Part	Description
	The <b>Navigator</b> icon opens the <b>Navigator</b> menu, which serves as a sitemap of the business process and displays links to all of the business process pages to which you have access.
	Click the Oracle logo to return to the Home page while working elsewhere in the business process. You can display a custom logo instead of the Oracle logo by selecting a <b>Logo Image</b> on the <b>Appearance</b> page.
	The name of the current business process. You can hide the business process name by selecting <b>No</b> for the <b>Display Business Process Name</b> option on the <b>Appearance</b> page.

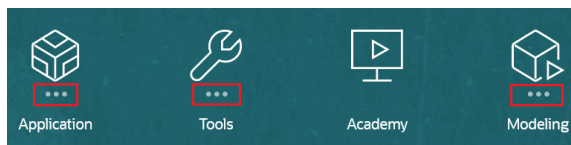


Global Header Part	Description
	The Home icon refreshes the Home page or returns you to the Home page while working elsewhere in the business process.
	Click the Accessibility Settings icon to enable accessibility features.
	If you belong to multiple groups or if a navigation flow is assigned to a role, click the navigation flow icon to switch navigation flows at runtime.
	Click your user name to access the <b>Settings and Actions</b> menu.

## Work Area

The work area on the Home page displays either the default Redwood background image or a custom background image. The cards that display in the work area link you to each functional area of the business process to which you have access; for example, **Dashboards, Intelligence, Infolets, Data, Reports, Business Rules, Application, Tools, Academy, and Modeling.**

The three dots above a card label denotes that the card opens a grouping of sub-cards, called a cluster. In Enterprise Profitability and Cost Management, the **Application, Tools, and Modeling** cards have associated sub-cards.

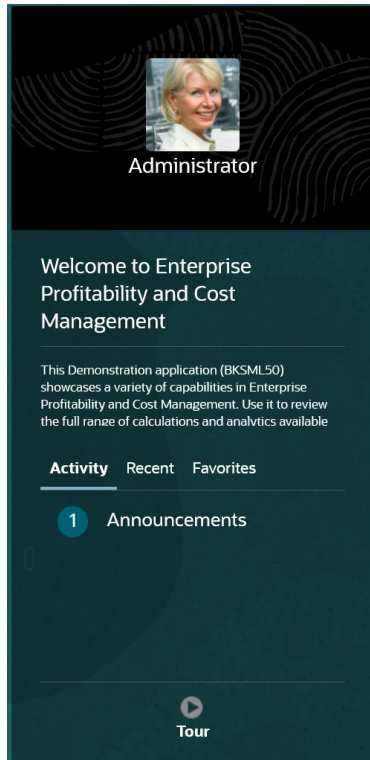



### Note:

- The **Academy** card links you to a variety of resources about using the business process.
- To replace the Redwood background image in the work area with a custom background image, select **Tools**, and then **Appearance**, and then select a **Background Image** on the **Appearance** page.

## Announcements Panel

The Announcements Panel displays your user name and profile picture (if set) and any system announcements entered by the Service Administrator. Information displayed on the panel can help you track your activity.



- You can set your profile picture to display at the top of the Announcements panel of the Home page. To set your profile picture, click **Tools**, and then **User Preferences**.
- **Activity**: Summarizes system announcements (the most recent announcement, sorted by effective date, appears at the top) and lists your open tasks. Click **Announcements** to flip the panel and view announcements. Click **Tasks Due Today** to flip the panel and view your tasks.
- **Recent**: Displays a list of links to recently visited forms and dashboards (up to 15 items). Clicking a link will launch the item in a secondary window. Clicking the star next to a link will tag it as a favorite.
- **Favorites**: Displays a list of links to forms or dashboards that were tagged as favorites, and prevents them from being overwritten. Click a link in **Favorites** to launch the item in a secondary window. To add items to **Favorites**, click **Recent** to view your recent user activity, and then click the star to the right of the item.
- : Click the **Tour** icon to launch a video about key features in the business process.

## Videos

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### Your Goal

Explore the default Redwood theme.

### Watch This Video



[Overview: Announcing EPM Cloud's new Redwood Theme](#)



## Working with Dynamic Tabs

Source and dynamic tabs display at the bottom of the page on which you're working.

When you launch a new dynamic tab from an existing tab or listing page, the new tab is added to the right of the existing tab and the focus will move to the newly launched tab.

Dynamic tabs are preserved for the current session only. The last tab displayed is retained the next time you access the page within the same session. If you log out and then log back in, if you reload a navigation flow, or if you switch to another navigation flow, dynamic tabs will not be retained. If there is any unsaved data, you will be prompted to save it before you're able to proceed.

Each new action you perform opens a new dynamic tab. Say, for example, you perform a drill through on Form1 and then perform a drill through on Form2, this will open two dynamic tabs. If you perform another drill through on Form1, the action will relaunch the previously opened tab.

Artifacts that were launched in dynamic tabs will also be listed in your recent history on the Announcements Panel. Dynamic tabs can also be added to **Favorites** in the Announcements Panel.

Dynamic tabs display a close icon. If there is any unsaved data on a tab, you will be prompted to save it before closing the tab. After a tab is closed the focus will move to the tab that is to the left of the closed tab. If you are closing a tab that is not in focus, the focus remains on the tab that is currently in view. To close all dynamic tabs, right-click any horizontal tab displayed at the bottom of the page and click **Close All Tabs**.

## Videos

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### Your Goal

Learn how to navigate with dynamic tabs to multi-task with different artifacts. With dynamic tabs, you can open related artifacts while keeping the original artifacts open.

### Watch This Video



[Navigating with Dynamic Tabs](#)

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# Considerations When Using the Application Interface

Note the following considerations when using the application interface:

- The interface supports only Landscape mode for iPad and Android tablets.
- The user experience on tablets is better on iPad than on Android devices.
- Oracle recommends using the Safari web browser with iPads and Google Chrome with Android devices.
- If you use Windows 10, the interface might appear in a magnified (or zoomed in) state if your scaling isn't set to 100%. Windows 10, by default, might have 125% or 150% scaling.

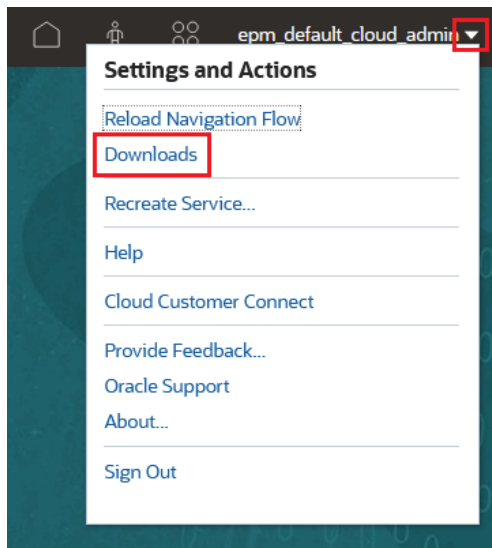
- A PDF viewer is required to view reports on the tablet. Oracle recommends the Adobe PDF viewer, but it can be opened in Kindle or Polaris Office on Android devices or a similar application on the iPad.

## Downloading and Installing Smart View

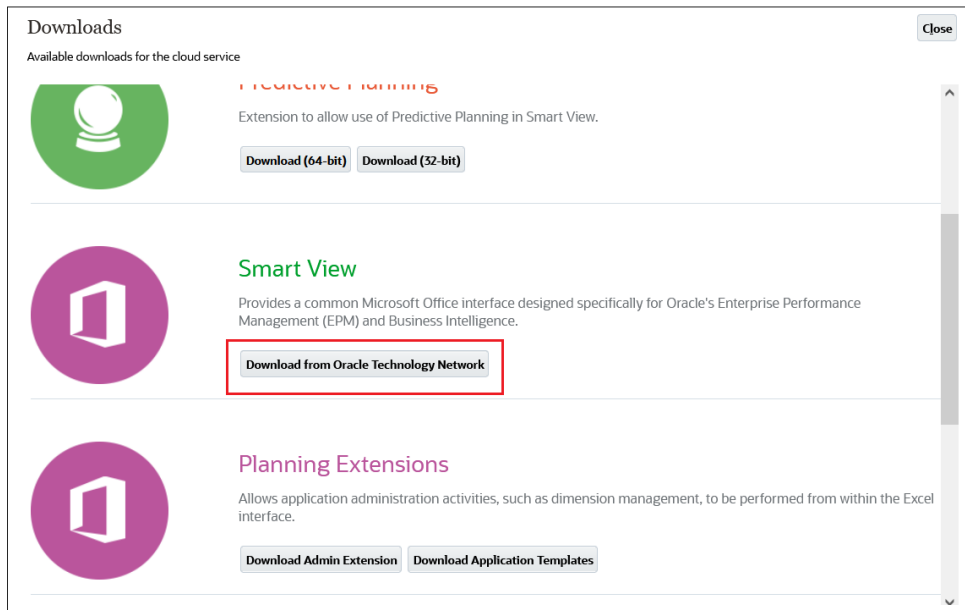
Service Administrators can use Oracle Smart View for Office to import and edit dimension and member metadata. (See [Using Smart View to Import and Edit Application Metadata](#)). In addition, as you are working with your data on the Rule Balancing page in Enterprise Profitability and Cost Management, you can click linked data points that open a context-sensitive, ad-hoc report in Smart View, where you can add more context to your results, drill down for more detail, and pivot the data. (See [Viewing Rule Balancing Reports](#)).

To download and install Smart View:

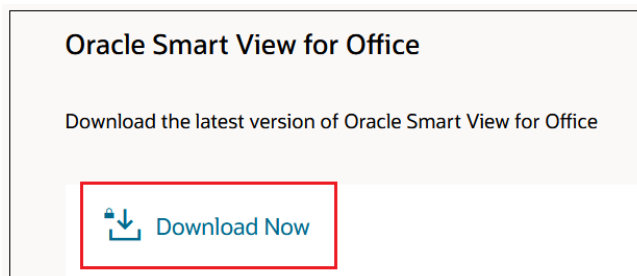
1. From the Home page, click the drop-down next to your user name at the top right of the page, and select **Downloads**.



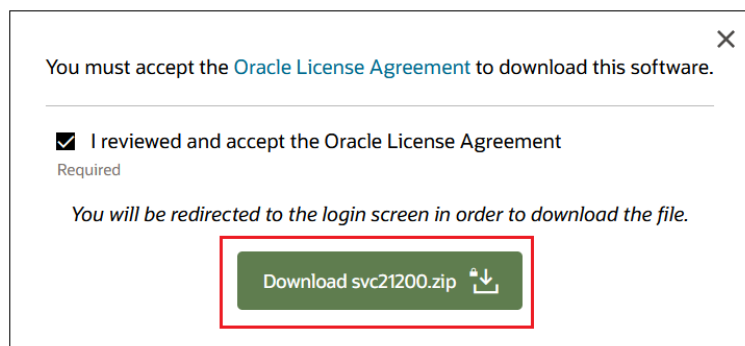
2. On the **Downloads** page, under **Smart View**, click **Download from Oracle Technology Network**.



3. On the **Oracle Smart View for Office** page, click **Download Now**.



4. Accept the license agreement, and download the zip file.



5. Go to your downloads and extract **SmartView.exe**.
6. Double-click **SmartView.exe** and follow the installation prompts.

# Managing Your Enterprise Profitability and Cost Management Implementation



Though the order of steps may vary based on how you manage your implementation, a typical implementation process for a new Enterprise Profitability and Cost Management application includes these steps:

1. **Create an application based on design requirements:** Start by designing the structure of the business process. This includes planning which custom dimensions and attribute dimensions you will need for the default and custom cubes in your application. You also make decisions on items such as naming conventions, the calendar structure, and currency specifications. See [Creating an Enterprise Profitability and Cost Management Application](#).
2. **Manage dimensions and cubes:** After the business process is created, you set up any custom dimensions and attribute dimensions, and then load metadata to build out all your dimensions. You can also add member formulas, attributes, user-defined attributes and smart lists to your dimension members. After creating your dimensions you can optionally add any custom cubes you require. See [Managing Dimensions](#) and [Managing Cubes](#).
3. **Set up security:** Set up role-based, metadata, data, and artifact security. See [Setting Up Access Permissions and Data Security](#).
4. **Create application forms:** Create forms needed for data entry, data validation, and Rule Balancing. See [Administering Forms](#) and [Designing Data Forms for Rule Balancing](#).
5. **Load or enter input data, driver data, and exchange rates:** Enter data in forms and load data using native import or data integrations. See [About Entering Data](#), [Importing Data](#), and [Creating File-Based Integrations](#).
6. **Create model POVs:** Create and manage model POVs for running model calculations. See [Understanding Points of View](#), [Creating a Point of View](#), and [Using the Calculation Control Page](#).
7. **Create models, rule sets, and rules:** Create models, rule sets, and rules based on your business requirements. See [Creating and Managing Models](#) and [Creating and Managing Rules](#).
8. **Calculate, validate, and troubleshoot models:** After loading data and creating models, you validate your rules, calculate models, and manage calculations. See [Running Model](#)

[Validation](#), [Calculating Models](#), [Analyzing Calculations](#), and [Viewing Rule Balancing Reports](#).

9. **Integrate data with downstream systems:** After finalizing your calculated data, you can export it to a file, or to external systems such as Oracle Financials Cloud, Oracle General Ledger, and Planning. You can also export data from your calculation cube to your reporting cube. See [Administering Data Integration](#).
10. **Create and view dashboards, infolets, reports, and intelligence:** Use dashboards, infolets, reports, and intelligence to analyze and report on your data. See [Working with Dashboards](#), [Viewing Key Information with Infolets](#), and [Working with Reports](#) for information on how to interact with existing dashboards, infolets, and reports. See [Designing Data Forms for Profit Curves](#) and [Designing Data Forms for Trace](#) to learn how to design forms for and build Profit Curves and Allocation Traces, which are unique to Enterprise Profitability and Cost Management.
11. **Customize the business process:** You customize your business process by designing custom navigation flows to customize the look and feel of the user interface for specific roles or groups, defining valid intersections, and creating custom action menus for forms. See [Designing Custom Navigation Flows](#) and [Defining Valid Intersections](#).
12. **Maintain the business process:** You maintain your business process by scheduling backups, analyzing system diagnostics, and cloning environments.



# Part II

## Creating and Managing Applications

### **Related Topics**

- [Creating an Enterprise Profitability and Cost Management Application](#)
- [Managing Applications](#)
- [Managing Application and System Settings](#)
- [Defining Valid Intersections](#)
- [Administering Data Integration](#)
- [Managing Jobs](#)

# 2


## Creating an Enterprise Profitability and Cost Management Application

### Related Topics

- [Application Design Best Practices](#)
- [About Creating an Application](#)
- [Configuring Your Environment](#)
- [Selecting What Type of Application to Create](#)
- [Creating the Sample Application](#)
- [Creating a New Application](#)

### Video

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Your Goal	Watch This Video
Learn how to create applications in Enterprise Profitability and Cost Management.	 <a href="#">Creating Applications in Enterprise Profitability and Cost Management</a>

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## Application Design Best Practices

Before you create your Enterprise Profitability and Cost Management application, review the Enterprise Profitability and Cost Management [Application Design Best Practices](#) in the *Oracle Enterprise Performance Management Cloud Operations Guide* to help you determine your requirements and design your application so that it meets your business needs. Design best practices are available in the following areas:

- [Managing Application Scalability](#)
- [Managing Dimension Design](#)
- [Managing Application Logic Design](#)
- [Maintaining an Optimized Calculation System](#)

## About Creating an Application

The landing page is your starting point for creating an Enterprise Profitability and Cost Management application and for viewing an overview video to help you get started. Each subscription to the EPM Enterprise Cloud Service allows you to create one application.

You begin by pre-configuring your environment for Enterprise Profitability and Cost Management. After the pre-configuration is complete, you select what type of application to create, and then you create the application.

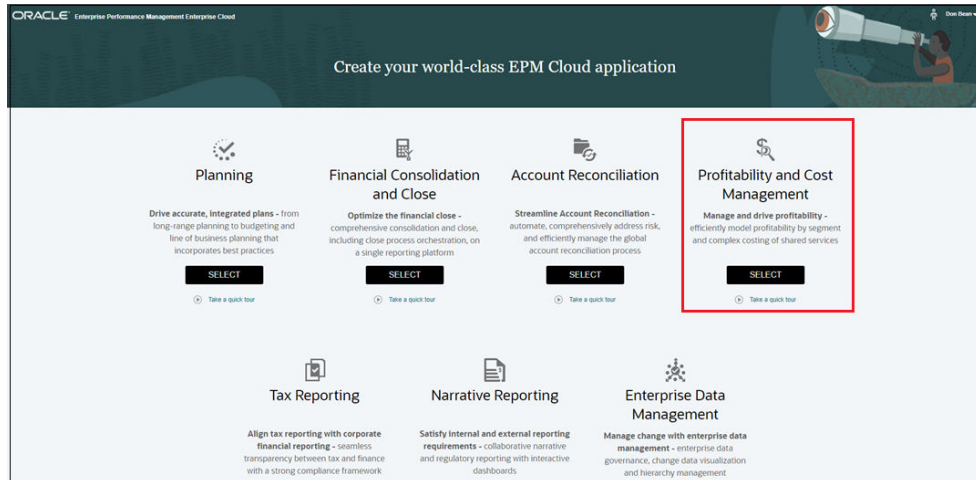
- [Configuring Your Environment](#)

- [Selecting What Type of Application to Create](#)
- [Creating the Sample Application](#)
- [Creating a New Application](#)

## Configuring Your Environment

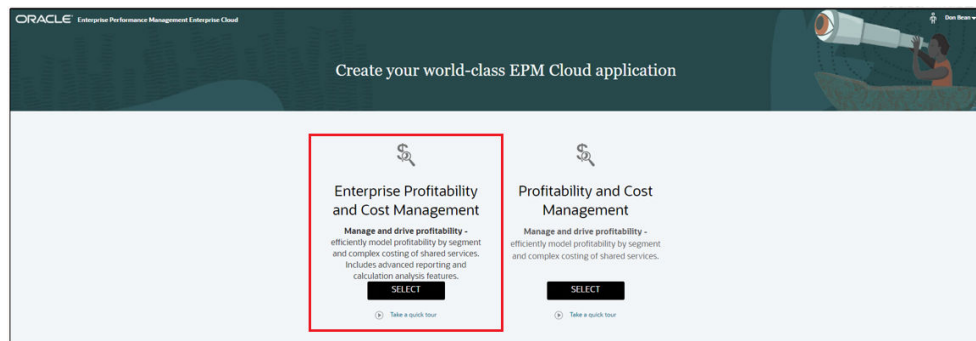
To configure your environment for Enterprise Profitability and Cost Management:

1. From the landing page, click **SELECT** under **Profitability and Cost Management**.



Click **OK** to initiate the configuration process.

2. Click **SELECT** under **Enterprise Profitability and Cost Management**.



### Note:

After you initiate the creation of an application, you cannot return to the landing page. If wish to return to the landing page to create a different application, you must first reset your environment to its original state. See [Switching to a Different Business Process](#) in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

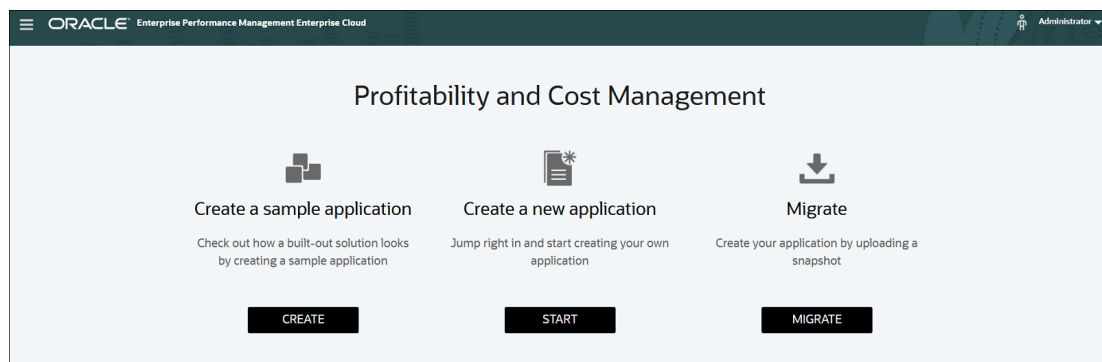


**Note:**

If you want to create a legacy Profitability and Cost Management application, then select **Profitability and Cost Management**. For documentation on legacy Profitability and Cost Management, go to [Oracle Profitability and Cost Management](#) on the Help Center.

## Selecting What Type of Application to Create

After the pre-configuration is complete, you have three options to create an Enterprise Profitability and Cost Management application:

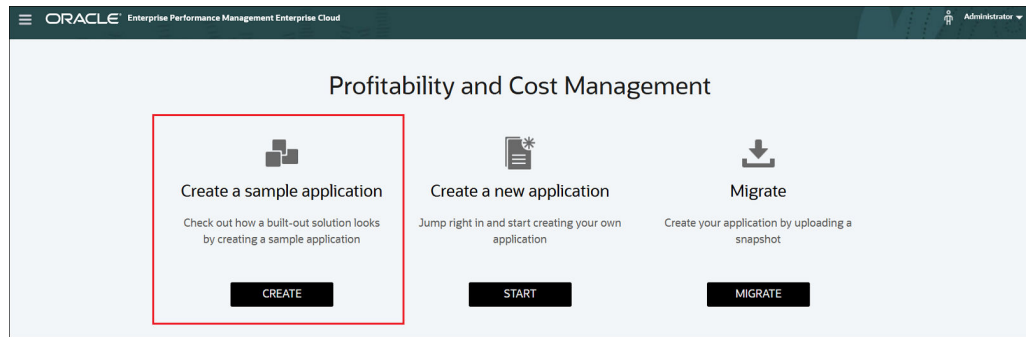


- **Create a sample application:** Click **CREATE** to create a sample business process with data and artifacts. You can use this ready-to-use business process for testing and exploration of functional areas. You can also use it as a template to model your own business process. Creating a sample application is a good way to learn about Profitability and Cost Management using a simple prebuilt example that has a full set of dimensions, rules, dashboards, and reports.
- **Create a new application:** Click **START** to create a container business process.
- **Migrate:** Click **MIGRATE** to import a business process from a snapshot that you previously uploaded to the environment. See [What Applications Can I Migrate to EPM Standard Cloud Service and EPM Enterprise Cloud Service](#) for prerequisites and snapshot compatibility. You can also migrate from a legacy Profitability and Cost Management application.

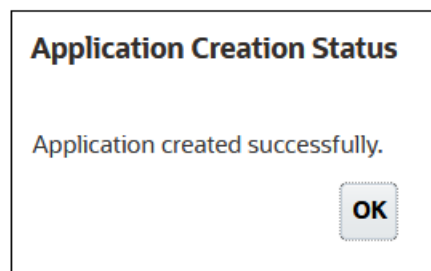
## Creating the Sample Application

Enterprise Profitability and Cost Management provides a sample application, called BksML50, that lets you quickly create an application with artifacts and data. You can use this application for testing and exploration of functional areas. You can also use it as a template to model your own application.

To create the sample application, click **CREATE** under **Create a sample application**.



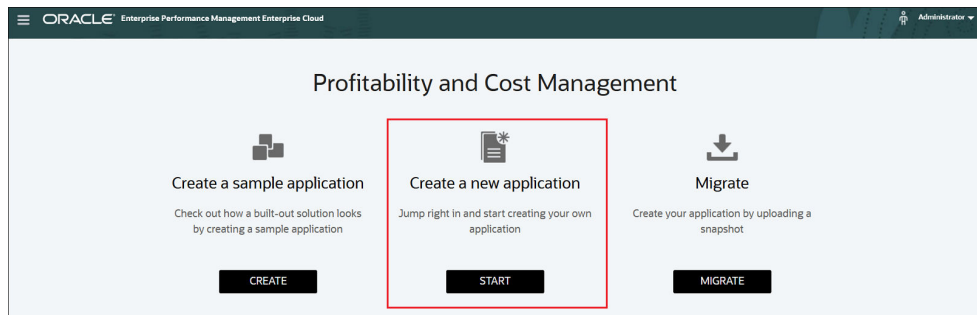
When the application creation is complete, you will see an **Application created successfully** message. Click **OK** to display the sample application in Enterprise Profitability and Cost Management.



## Creating a New Application

To create a new application:

1. Click **Start** under **Create a new application**.



2. In the **Create Application** wizard, set up the following information about the application:
  - [Entering a Name and a Description](#)
  - [Setting Up the Calendar](#)
  - [Setting Up Currencies](#)
  - [Reviewing Application Information](#)



**Note:**

The **Dimension Mapping** and **Customize** options in the **Create Application** wizard are disabled and not applicable for Enterprise Profitability and Cost Management.

## Entering a Name and a Description

On the **Create Application: General** page, enter a name and a description for the application.

## Setting Up the Calendar

Set up the calendar for the application in the **Period Frequency** section of the **Create Application: Details** page. You can set the period frequency to **Monthly**, **Quarterly**, or **Custom**.

- **Monthly**—If you select **Monthly**, enter the **Start and End Year** and the **First Month of Fiscal Year**.

The years you enter for **Start and End Years** determine how many years are created in the **Years** dimension.

For example, if the **Start Year** is **2021** and the **End Year** is **2030**, then the **Years** dimension is constructed as follows:

Member Name	Parent Member	Default Data Storage	Data Type	Default Alias Table
Years		Never Share	Unspecified	
All Years	Years	Dynamic Calc	Unspecified	
FY21	All Years	Store	Unspecified	
FY22	All Years	Store	Unspecified	
FY23	All Years	Store	Unspecified	
FY24	All Years	Store	Unspecified	
FY25	All Years	Store	Unspecified	
FY26	All Years	Store	Unspecified	
FY27	All Years	Store	Unspecified	
FY28	All Years	Store	Unspecified	
FY29	All Years	Store	Unspecified	
FY30	All Years	Store	Unspecified	

The month you enter for the **First Month of Fiscal Year** determines how the **Period** dimension is constructed. If you set the **First Month of Fiscal Year** to anything other than **January**, specify whether the fiscal year starts in the **Same Calendar Year** or in the **Previous Calendar Year**.

Create Application: Details

Back Cancel 1 2 3 4 5 Next

General    Dimensions Mapping    **Details**    Customize    Review

Period Frequency

Start and End year: 2021 to 2030

Monthly  
 Quarterly  
 Custom

First Month of Fiscal Year: June

Fiscal Year Start Date: Same Calendar Year

You can later set up calculations based on the calendar year, for example, using formula expressions. When setting up formulas for an application, consider that formula expressions such as [TPDate] and [FirstDate] produce different results if the application starts in the same calendar year or previous calendar year.

For example, if the **First Month of Fiscal Year** is **June**, and **Fiscal Year Start Date** is in the **Same Calendar Year**, then the **Period** dimension is constructed as follows:

Member Name	Parent Member	Default Data Storage	Data Type	PCM_CLC Consol op.	PCM_REP Consol op.	Default Alias Table
Period		Never Share	Unspecified	Ignore	Ignore	
BegBalance	Period	Store	Unspecified	Ignore	Ignore	
YearTotal	Period	Dynamic Calc	Unspecified	Addition	Addition	
Q1	YearTotal	Dynamic Calc	Unspecified	Addition	Addition	
Jun	Q1	Store	Unspecified	Addition	Addition	
Jul	Q1	Store	Unspecified	Addition	Addition	
Aug	Q1	Store	Unspecified	Addition	Addition	
Q2	YearTotal	Dynamic Calc	Unspecified	Addition	Addition	
Sep	Q2	Store	Unspecified	Addition	Addition	
Oct	Q2	Store	Unspecified	Addition	Addition	
Nov	Q2	Store	Unspecified	Addition	Addition	
Q3	YearTotal	Dynamic Calc	Unspecified	Addition	Addition	
Dec	Q3	Store	Unspecified	Addition	Addition	
Jan	Q3	Store	Unspecified	Addition	Addition	
Feb	Q3	Store	Unspecified	Addition	Addition	
Q4	YearTotal	Dynamic Calc	Unspecified	Addition	Addition	
Mar	Q4	Store	Unspecified	Addition	Addition	
Apr	Q4	Store	Unspecified	Addition	Addition	
May	Q4	Store	Unspecified	Addition	Addition	

- **Quarterly**—If you select **Quarterly**, enter the **Start and End Year** and the **First Fiscal Period Start Date**.

Create Application: Details

Back Cancel 1 2 **3** 4 5 Next

General Dimensions Mapping **Details** Customize Review

Period Frequency

Start and End year 2021 to 2030

Monthly  
 Quarterly  
 Custom

First Fiscal Period Start Date 6/1/2022

For example, if you select **Quarterly**, and set the **Start Year** to **2021** and the **End Year** to **2030**, then the **Period** and **Years** dimensions are constructed as follows:

Member Name	Parent Member	Default Data Storage	Data Type	PCM_CLC Consol op.	PCM_REP Consol op.	Default Alias Table
Period		Never Share	Unspecified	Ignore	Ignore	
BegBalance	Period	Store	Unspecified	Ignore	Ignore	
YearTotal	Period	Dynamic Calc	Unspecified	Addition	Addition	
Q1	YearTotal	Store	Unspecified	Addition	Addition	
Q2	YearTotal	Store	Unspecified	Addition	Addition	
Q3	YearTotal	Store	Unspecified	Addition	Addition	
Q4	YearTotal	Store	Unspecified	Addition	Addition	

Member Name	Parent Member	Default Data Storage	Data Type	Default Alias Table
Years		Never Share	Unspecified	
All Years	Years	Dynamic Calc	Unspecified	
FY21	All Years	Store	Unspecified	
FY22	All Years	Store	Unspecified	
FY23	All Years	Store	Unspecified	
FY24	All Years	Store	Unspecified	
FY25	All Years	Store	Unspecified	
FY26	All Years	Store	Unspecified	
FY27	All Years	Store	Unspecified	
FY28	All Years	Store	Unspecified	
FY29	All Years	Store	Unspecified	
FY30	All Years	Store	Unspecified	

- **Custom**—If you select **Custom**, enter the **Start and End Year**, **Periods Per Year**, and a **Prefix**.

Create Application: Details

Back Cancel 1 2 **3** 4 5 Next

General Dimensions Mapping **Details** Customize Review

Period Frequency

Start and End year 2021 to 2030

Monthly  
 Quarterly  
 Custom

Periods per Year 13 Prefix TP

For example, if the **Periods Per Year** is **13**, and the **Prefix** is **TP**, then the **Period** dimension is constructed as follows:



Member Name	Parent Member	Default Data Storage	Data Type	PCM_CLC Consol op.	PCM_REP Consol op.	Default Alias Table
Period		Never Share	Unspecified	Ignore	Ignore	
BegBalance	Period	Store	Unspecified	Ignore	Ignore	
YearTotal	Period	Dynamic Calc	Unspecified	Addition	Addition	
TP1	Year Total	Store	Unspecified	Addition	Addition	
TP2	Year Total	Store	Unspecified	Addition	Addition	
TP3	Year Total	Store	Unspecified	Addition	Addition	
TP4	Year Total	Store	Unspecified	Addition	Addition	
TP5	Year Total	Store	Unspecified	Addition	Addition	
TP6	Year Total	Store	Unspecified	Addition	Addition	
TP7	Year Total	Store	Unspecified	Addition	Addition	
TP8	Year Total	Store	Unspecified	Addition	Addition	
TP9	Year Total	Store	Unspecified	Addition	Addition	
TP10	Year Total	Store	Unspecified	Addition	Addition	
TP11	Year Total	Store	Unspecified	Addition	Addition	
TP12	Year Total	Store	Unspecified	Addition	Addition	
TP13	Year Total	Store	Unspecified	Addition	Addition	

## Setting Up Currencies

Specify the main currency for the application, and establish whether the application supports multiple currencies in the **Other Details** section of the **Create Application: Details** screen. If you select **Yes** for **Multicurrency** then a **Currency** dimension is created.

The currency that you select for the main currency is the first member of the **Currency** dimension. For example, if you select **USD United States American Dollar** as the **Main Currency**, it is displayed in the **Currency** dimension as follows:

Member Name	Parent Member	Default Data Storage	Data Type	Symbol	Predefined Symbol	Scale
Currency		Never Share	Unspecified			
Input Currencies	Currency	Label only	Unspecified		<None>	1
USD	Input Currencies	Store	Unspecified	\$		1
Reporting Currencies	Currency	Label only	Unspecified		<None>	1
USD_Reporting	Reporting Currencies	Store	Unspecified	\$		1
No Currency	Currency	Never Share	Unspecified		<None>	1

### Note:

After the application is created, you can't change this option. Multiple currency support is available for level 0 members, regardless of base currency. The same currencies and exchange rates are used across cubes.

## Reviewing Application Information

On the **Create Application: Review** page, review the application information that you have defined, and then click **Create** to create the application.

Create Application: Review

Back Cancel

1 2 3 4 5

General Dimensions Mapping Details Customize Review Create

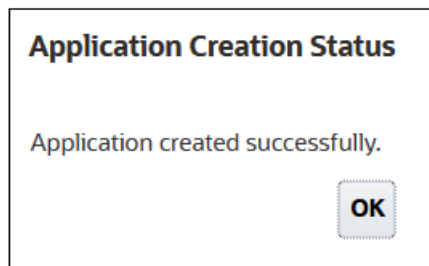
123 - Profitability  
123

Start and End Period	2021-2030 (10 Years )
First Month of Fiscal Year	January
Weekly Distribution	Even Distribution

Other Details

Currency	USD
Multicurrency	Yes - Simplified
Sandboxes	Disabled
Hybrid	Enabled

When the application creation is completed, you will see an **Application created successfully** message. Click **OK** to display the application in Enterprise Profitability and Cost Management.



# 3

## Managing Applications

### Related Topics

- [Application Overview](#)
- [Managing Cubes](#)
- [Managing Dimensions](#)
- [Viewing Activity Reports](#)
- [Importing and Exporting Data](#)
- [Importing Exchange Rates for a Multicurrency Application](#)
- [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#)
- [Refreshing the Application Database](#)
- [Validating Metadata](#)
- [Removing an Application](#)

## Application Overview

An application is a related set of dimensions and dimension members used to meet a set of business process needs. Each application has its own cubes, dimensions, accounts, entities, scenarios, and other data elements.

An application is based on a set of related dimensions and dimension members used to meet a set of business process needs. Each application has its own cubes, dimensions, data, models, calculation rules, and analytic artifacts.

You can have a single Enterprise Profitability and Cost Management application for each environment. An application consists of a single ASO calculation cube and a single ASO reporting cube. Up to three additional cubes are allowed.



To create an application, see [Creating an Enterprise Profitability and Cost Management Application](#).

After an application is created, you can view and manage it using the **Application** console. To view the **Application** console, select **Application**, and then **Overview**.

The **Application** console consists of these tabs:

- **Overview:** Application name, description, and type; the number of data definitions (dashboards, forms, and reports) in the application; the number of rules in the application; and the cubes used by the application.
- **Cubes:** See [Managing Cubes](#).
- **Dimensions:** See [Managing Dimensions](#).
- **Activity Reports:** See [Viewing Activity Reports](#).

From any of the tabs on the **Application** console, you can click these buttons:

-  Refreshes the **Application** console to ensure it is displaying the latest information.
-  Click the drop-down to perform the following tasks:
  - [Importing and Exporting Data](#)
  - [Importing Exchange Rates for a Multicurrency Application](#) (Available only if you created a Currency dimension when you created your application. See [Setting Up Currencies](#).)
  - [Refreshing the Application Database](#)
  - [Creating Clear Cube Jobs](#)
  - [Removing an Application](#)
  - [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#)

## Managing Cubes

### Related Topics

- [About Cubes in Enterprise Profitability and Cost Management](#)
- [Creating Cubes](#)
- [Clearing Cubes](#)
- [Improving Cube Performance](#)

## About Cubes in Enterprise Profitability and Cost Management

Enterprise Profitability and Cost Management applications contain cubes that store data and metadata. As you manage dimensions, members, and data in your application, you associate them with cubes. The association ensures that the cube contains only relevant application dimensions, members, and data values, and that application design, size, and performance are optimized.

Enterprise Profitability and Cost Management comes pre-loaded with the following cubes:

- **PCM\_CLC**: Use this cube to run calculations.
- **PCM\_REP**: Use this cube to view data and run reports.

For performance reasons, it is best to keep the amount of data in the **PCM\_CLC** cube small. To do this, move calculation results for completed time periods from the **PCM\_CLC** cube to the **PCM\_REP** cube, where you can then view data and reports.

For example, instead of calculating data for January and leaving it in the **PCL\_CLC** cube, and then calculating data for February and leaving it in the **PCL\_CLC** cube, and so on for months or even years, it is better to periodically move the data from the **PCM\_CLC** cube to the **PCM\_REP** cube and keep only the actively-calculated data in the **PCM\_CLC** cube.

To view and manage cubes:

1. From the Enterprise Profitability and Cost Management Home page, select **Application**, and then select **Overview**.
2. Select the **Cubes** tab, and perform a task:
  - Click the name of the cube to view cube details.
  - Create a new cube (see [Creating Cubes](#)).
  - Clear a cube (see [Clearing Cubes](#)).

**Note:**

You can add only Aggregate Storage (ASO) cubes in Enterprise Profitability and Cost Management.

## Creating Cubes

In addition to the pre-loaded PCM\_CLC calculation cube and the PCM\_REP reporting cube, you may want to create additional cubes to use in your organization. For example, you could create a custom cube to collect driver data or to stage and validate input data before loading the data into the calculation cube. The number of cubes you create depends on the needs of your organization. You can create up to three custom cubes.

To create a new cube:

1. From the Home page, select **Application**, and then **Overview**.
2. On the **Application** page, select the **Cubes** tab.
3. On the **Cubes** tab, click **Create**.
4. On the **Create Cube** page, enter a **Name**, **Type**, and **Description** for the cube.

Since you can add only Aggregate Storage cubes in Enterprise Profitability and Cost Management, select **Aggregate Storage Option** for the **Type**. When creating a new cube, aggregate storage limits apply.

5. Click **Done**.

The new cube is displayed along with the **PCM\_CLC** and **PCM\_REP** cubes on the **Cubes** tab.

After you create a cube, you add dimensions to the cube (see [Managing Dimensions](#)) and then refresh the database to commit the changes to the application (see [Refreshing the Application Database](#)).

**Note:**

After a cube is created, you cannot rename or delete it.

## Clearing Cubes

### Related Topics

- [About Clearing Cubes](#)
- [Creating Clear Cube Jobs](#)
- [Submitting a Clear Cube Job](#)
- [Deleting a Clear Cube Job](#)
- [Scheduling Clear Cube Jobs](#)

## About Clearing Cubes

You can clear specific input and calculation data within cubes. When you clear a cube, you can reload or correct the data in the cube. For example, you might have loaded data into the wrong intersection, or you may simply need to prepare the cube for the next cycle.

You create Clear Cube jobs to clear the data in a cube. You can start a Clear Cube job right away, or you can schedule it to run later.





### Note:

A Clear Cube job clears the data that you specify in a cube, but it does not delete the cube definition in the application's relational tables.

## Creating Clear Cube Jobs

To create a Clear Cube job:


1. From the Home page, select **Application**, and then select **Overview**.
2. On the **Application** page, select **Actions**, and then **Clear Cube**.
3. On the **Clear Cube** page, click **Create**.
4. Enter the job name and select the cube to clear.
5. Select what you would like to clear:
  - **Clear All:** Clears all data in a cube that is associated with the selected **Clear Options**. You can select to clear:
    - **Supporting Details**
    - **Comments**
    - **Attachments**
    - **Essbase Data**
  - **All Aggregations:** Clears all aggregate views. For more information on aggregation, see [Aggregating an Aggregate Storage Database](#) in the *Essbase Database Administrator's Guide*.

- **Partial Data (Basic Mode):** Clears the data that is associated with the selected **Clear Options**. Use the member selector  to select the point of view. You can select to clear:
    - **Supporting Details**
    - **Comments**
    - **Attachments**
    - **Essbase Data**
      - \* **Logical:** Input cells in the specified region are written to a new data slice with negative, compensating values that result in a value of zero for the cells you want to clear. The process for logically clearing data completes in a length of time that is proportional to the size of the data being cleared. Because compensating cells are created, this option increases the size of the database.
      - \* **Physical:** Input cells in the specified region are physically removed from the aggregate storage database. The process for physically clearing data completes in a length of time that is proportional to the size of the input data, not the size of the data being cleared. Therefore, you might typically use this method only when you need to remove large slices of data. This option decreases the size of the database.
  - **Partial Data (Advanced Mode):** Clears Oracle Essbase data only by using an MDX expression in the text box provided. Select **Logical** or **Physical** (see the descriptions above) to specify how to clear the data.
6. Click **Save and Close**.
  7. Click **Refresh** to view the Clear Cube job.
  8. Select whether to run the Clear Cube job now or at a later time.
    - To run the job right away, click  next to the job, and then select **Submit**. If the job submitted successfully, click **OK**, and then click **Close** to return to the **Application** screen.
    - To run the job at a later time, or at intervals, click **Close** to return to the **Application** page, and then schedule the job in the **Jobs** console. See [Scheduling Clear Cube Jobs](#) for information on how to do this.

## Submitting a Clear Cube Job


If you did not submit a Clear Cube job when you created it, you can always submit it later.

To submit a Clear Cube job:

1. From the Home page, select **Application**, and then select **Overview**.
2. On the **Application** page, select **Actions**, and then **Clear Cube**.
3. On the **Clear Cube** listing page, click  next to a Clear Cube job, and then select **Submit**.

## Deleting a Clear Cube Job

To delete a Clear Cube job:

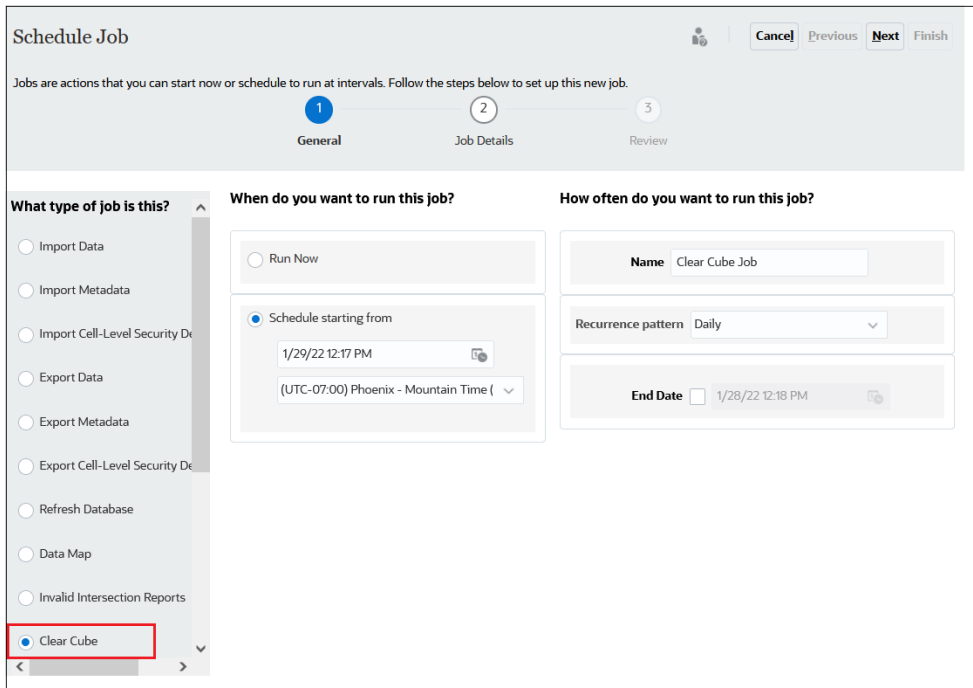
1. From the Home page, select **Application**, and then select **Overview**.
2. On the **Application** page, select **Actions**, and then **Clear Cube**.
3. On the **Clear Cube** listing page, click  next to a Clear Cube job, and then select **Delete**.

## Scheduling Clear Cube Jobs

You can schedule when to run Clear Cube jobs and how often you want the jobs to run.

To schedule a Clear Cube job:

1. Go to the **Jobs** console.  
If you just created a Clear Cube job and are in the **Application** console, select the **Jobs** icon at the top of the screen. If you are on the Home page, select **Application**, and then **Jobs**.
2. Select **Actions**, and then **Schedule**.
3. In the **General** step of the **Schedule Job** page, select **Clear Cube**, enter a name for the job, enter information about when and how often you want to run the job, and then click **Next**.



Schedule Job

Jobs are actions that you can start now or schedule to run at intervals. Follow the steps below to set up this new job.

1 General 2 Job Details 3 Review

What type of job is this?

- Import Data
- Import Metadata
- Import Cell-Level Security De
- Export Data
- Export Metadata
- Export Cell-Level Security De
- Refresh Database
- Data Map
- Invalid Intersection Reports
- Clear Cube

When do you want to run this job?

Run Now

Schedule starting from

1/29/22 12:17 PM

(UTC-07:00) Phoenix - Mountain Time {

How often do you want to run this job?

Name Clear Cube Job

Recurrence pattern Daily

End Date  1/28/22 12:18 PM

4. **Job Details** lists all of the Clear Cube jobs that have been created. Select the Clear Cube job that you want to schedule, and then click **Next**.



**Schedule Job** Cancel Previous Next Finish

Jobs are actions that you can start now or schedule to run at intervals. Follow the steps below to set up this new job.

General **Job Details** Review

**Clear Cube**

WARNING: The Clear Cube job deletes the data you specify within input and reporting cubes, but it does not delete the application definition in the application's relational tables.

**Name**

Clear Cube Job
Clear Cube Job 2
Clear Cube Job 3

5. Review the details for the job, and then click **Finish** to run the Clear Cube job.

**Schedule Job** Cancel Previous Next Finish

Jobs are actions that you can start now or schedule to run at intervals. Follow the steps below to set up this new job.

General Job Details **Review**

**Review**

Review your choices carefully before you finish.

<b>Name</b>	Clear Cube Job
<b>Job Type</b>	Clear Cube
<b>Job Name</b>	Clear Cube Job
<b>Options</b>	Supporting Details
<b>Scheduled Run Time</b>	3/24/22 9:54 AM
<b>Repeats</b>	Occurs Once
<b>Scheduled End Time</b>	"Not Applicable (N/A)"
<b>Time Zone</b>	Mountain Standard Time

## Improving Cube Performance

In addition to moving calculations for given time periods from the **PCM\_CLC** calculation cube to the **PCM\_REP** reporting cube in order to keep the amount of data in the **PCM\_CLC** calculation cube small, there are several actions you can take to improve cube performance. These optimization actions include:

- [Compacting the Outline](#)
- [Merging Data Slices](#)
- [Optimizing Aggregation for the PCM\\_CLC Calculation Cube](#)
- [Optimizing Aggregation for the PCM\\_REP Reporting Cube](#)

 **Note:**

For additional optimization information, see *Optimizing Aggregate Storage Option Cubes* in *Oracle Enterprise Performance Management Cloud Operations Guide*

## Compacting the Outline

The **Compact Outline** job compacts the outline file of a cube. Compaction helps keep the outline file at an optimal size. Compacting the outline does not clear the data.

To schedule a job to compact the outline file of a cube:

1. From the Home page, select **Application**, and then **Jobs**.
2. On the **Jobs** page, select **Actions**, and then **Schedule**.
3. In the **General** step of the **Schedule Job** page, select **Compact Outline**, enter a name for the job, enter information about when and how often you want to run the job, and then click **Next**.
4. In **Job Details**, select a cube, and then click **Next**.
5. Review the details for the job, and then click **Finish** to run the **Compact Outline** job.



### Note:

See [Scheduling Jobs](#) for complete information on scheduling jobs.

## Merging Data Slices

The **Merge Data Slices** job merges incremental data slices of a cube. Fewer slices improve a cube's performance. You can merge all incremental data slices into the main cube slice or merge all incremental data slices into a single data slice without changing the main cube slice. You can optionally remove cells that have a value of zero.

To schedule a job to merge incremental data slices in a cube:

1. From the Home page, select **Application**, and then **Jobs**.
2. On the **Jobs** page, select **Actions**, and then **Schedule**.
3. In the **General** step of the **Schedule Job** page, select **Merge Data Slices**, enter a name for the job, enter information about when and how often you want to run the job, and then click **Next**.
4. In **Job Details**, select a cube, select whether to merge all incremental slices into the main slice or into a single incremental slice, and select whether to keep or remove cells with a zero value.
5. Review the details for the job, and then click **Finish** to run the **Merge Data Slices** job.



### Note:

When you merge incremental data slices, you cannot undo this action.

**Note:**

See [Scheduling Jobs](#) for complete information on scheduling jobs.

## Optimizing Aggregation for the PCM\_CLC Calculation Cube

To optimize aggregation for the Enterprise Profitability and Cost Management calculation cube (PCM\_CLC):

1. From the Home page, select **Modeling**, and then **Calculation Control**.
2. Select a Point of View, and then click **Calculate Model**.
3. In the **Calculate Model** dialog box, select **Optimize for Reporting**.

The screenshot shows the 'Calculate Model' dialog box with the following settings:

- Model: 10 Actuals Allocation Process
- Job Comment: (empty)
- Processing Options:
  - Clear Calculated Data
  - Run Calculation
  - Capture Essbase Debug Scripts
  - Optimize for Reporting
- Processing Range: All Rules

In most cases, the **Optimize for Reporting** option is sufficient for your aggregation needs.

## Optimizing Aggregation for the PCM\_REP Reporting Cube

The **Optimize Aggregation** job is useful for optimizing aggregation in the Enterprise Profitability and Cost Management reporting cube (PCM\_REP). The job generates optimized views based on collected query tracking information in a cube. This job has two actions:

To optimize aggregation for the Enterprise Profitability and Cost Management reporting cube (PCM\_REP):

1. From the Home page, select **Application**, and then **Jobs**.
2. On the **Jobs** page, select **Actions**, and then **Schedule**.
3. In the **General** step of the **Schedule Job** page, select **Optimize Aggregation**, enter a name for the job, enter information about when and how often you want to run the job, and then click **Next**.
4. In **Job Details**, select a cube, and select whether to enable query tracking or execute the aggregation process.

- **Enable Query Tracking:** Records a meaningful set of queries, and then uses the recorded query data to select the most appropriate set of aggregate views to materialize for the cube. You must enable query tracking and allow it sufficient time to collect data before executing the aggregation process based on query data.

Once enabled, query tracking continues until query tracking is disabled, the cube is reloaded or refreshed, the outline is compacted, the application is shut down, or additional aggregate views are materialized for the cube. Query tracking does not resume automatically after these actions occur.

The following actions clear the stored query tracking information from the aggregate storage cube, but they do not disable query tracking:

- Merging incremental data slices
- Clearing data
- Clearing existing aggregations
- Clearing partial data
- Loading data into the aggregate storage cube

- **Execute Aggregation Process:** Calculates aggregations for aggregate storage cubes that contain data and to which you are granted Calculation permission.

To perform an aggregation, you use system recommended views. The selection of views and aggregation processes are combined into one, non-configurable operation performed by the server. You can optionally specify the maximum disk space for the resulting files, base the view selection on user querying patterns, and include rollup hierarchies in the view selection.

Select one or more of the following options:

- **Based on query data?** Aggregate the views the server selects, based on collected user querying patterns. This option is only available if query tracking is turned on.
- **Include rollup option?** Include secondary hierarchies (with default level usage) in the view selection process.
- **Include growth size option?** Aggregate the views the server selects, until the maximum growth of the aggregated cube exceeds limits you specify. Enter the size (in ratio) beyond which the server should stop the aggregation.

5. Review the details for the job, and then click **Finish** to run the **Optimize Aggregation** job.

**Note:**

See [Scheduling Jobs](#) for complete information on scheduling jobs.

# Managing Dimensions

## Related Topics

- [Dimension Overview](#)
- [Best Practices When Designing Dimensions](#)
- [Creating a Dimension](#)
- [Accessing the Dimension Editor](#)
- [Reviewing Dimensions](#)
- [Editing Dimension Properties](#)
- [Working with Members](#)
- [Working with Attributes](#)
- [Importing and Exporting Dimension Metadata](#)

## Dimension Overview

### Related Topics

- [About Dimensions and Members in Enterprise Profitability and Cost Management](#)
- [About Dimension Hierarchies](#)
- [Hierarchy Types](#)
- [Dimension Top Levels](#)

## About Dimensions and Members in Enterprise Profitability and Cost Management

Enterprise Profitability and Cost Management applications contain dimensions that represent the categories of data in your organization. For example, you identify time periods, such as YearTotal, Q1, or Jan, in the Period dimension. You identify budgeted items, such as SG&A for expenses, in the Account dimension, and you identify departments for your organization in the Entity dimension.

Members are components of dimensions. You add dimensions and members based on your organizational requirements.

Enterprise Profitability and Cost Management consists of the following dimensions:

- Years, Period, Scenario, and Version POV dimensions (required)
- Entity and Account dimensions (required)
- Balance and Rule system dimensions (required)
- Up to 10 custom dimensions
- Up to 40 attribute dimensions

 **Note:**

If you selected the **Multicurrency** option when you created your application, a Currency dimension is created. See [Setting Up Currencies](#).

 **Note:**

The Entity and Account dimensions, along with any custom dimensions are referred to as *Business Dimensions*.

## About Dimension Hierarchies

Dimension hierarchies define relationships and consolidations between members. Relationships are represented in a graphical hierarchy diagram.

In an Enterprise Profitability and Cost Management hierarchy, the dimension is at the top of the hierarchy, and the levels below it are members of the dimension. Members with levels under them are called parents. Members of the same level under a given parent are called children in relation to the parent, and siblings in relation to each other. Members at any level under a parent are called descendants.

In the following example, the Period dimension has a YearTotal child member. The YearTotal member has Q1, Q2, Q3, and Q4 child members, which represent quarters. The quarters have child members for the corresponding months. Monthly data values roll up to the quarters, and quarterly data values roll up to the year total.

Member Name	Parent Member
[-] <b>Period</b>	
BegBalance	Period
[-] <b>YearTotal</b>	Period
[-] <b>Q1</b>	YearTotal
Jan	Q1
Feb	Q1
Mar	Q1
[-] <b>Q2</b>	YearTotal
Apr	Q2
May	Q2
Jun	Q2
[-] <b>Q3</b>	YearTotal
Jul	Q3
Aug	Q3
Sep	Q3
[-] <b>Q4</b>	YearTotal
Oct	Q4
Nov	Q4
Dec	Q4

## Hierarchy Types

In Enterprise Profitability and Cost Management, you can create two types of dimensions hierarchies:

- **Stored Hierarchy**
  - Members are aggregated according to the outline structure.
  - Because aggregate storage databases are optimized for aggregation, the aggregation of data values for stored hierarchies is very fast.
  - Stored hierarchies cannot have formulas.
  - All members in a stored hierarchy must use "+" or "-" consolidation.
  - Shared members are supported in the second hierarchy or later.
- **Dynamic Hierarchy**
  - Members and formulas are calculated, rather than aggregated.
  - Because dynamic hierarchies are calculated, the data retrieval time may be longer than for data retrieved from stored hierarchies.
  - Dynamic hierarchy can have formulas.

- Dynamic hierarchies can contain any consolidation operator.
- Use dynamic hierarchies sparingly. They are mainly used to isolate members requiring formula or "-" consolidation.

A dimension can contain both types of hierarchies. To use multiple hierarchies in a dimension (even if they are all stored hierarchies), you must enable multiple hierarchies for that dimension. When using multiple hierarchies, the first hierarchy must be *stored*.

You set the hierarchy type on the **Edit Dimension Properties** tab. See [Editing Dimension Properties](#) for information.

## Dimension Top Levels

The top levels of dimensions impact usability:

- Design for all data in first hierarchy to roll up to top of dimension
- Use "Total", "All", and "No" members in the primary hierarchy
  - The "Total" member houses all data whether or not a 'real' member is associated
  - The "All" member houses the primary hierarchy
  - The "No" member is used for data that has not yet, or will not, be assigned to a member of the dimension
- Alternate hierarchies should not roll up to top

These choices make it easier to:

- Define rules
- Use built in reports (Stage Balancing, Trace, Prof Curves)
- Use Smart View and other reporting tools

## Best Practices When Designing Dimensions

- Use dynamic dimensions sparingly. They are slow to aggregate, which impacts both reporting and calculation speed. Stored dimensions are the best choice. See [Hierarchy Types](#).
- When creating a stored dimension, keep in mind that *shared* members are only allowed in the second hierarchy or later.
- Understand how the top levels of dimensions impact usability. See [Dimension Top Levels](#).
- Allow for future dimension growth.
- Do not overlook the need for intermediate step dimensions or data categorization dimensions.

## Creating a Dimension

To create a dimension:

1. From the Home page, select **Application**, and then **Overview**.
2. On the **Application** page, select the **Dimensions** tab.



3. Click the drop-down next to **Cube**, and select the cube to which you want to add the dimension.
4. Click **Create**.
5. On the **Create Dimension** page, enter the following information:
  - **Dimension:** Enter a name that is unique across all dimensions. See [Naming Restrictions for Dimensions, Members, and Aliases](#).
  - **Description: Optional:** Enter a description.
  - **Alias Table:** Select an alias table.
  - **Alias: Optional:** Enter an alternate name for the dimension.
  - **Two Pass Calculation:** Not applicable in Enterprise Profitability and Cost Management.
  - **Apply Security:** Allow security to be set on the dimension members; must be selected before assigning access rights to dimension members. Otherwise, dimensions have no security and users can access members without restriction.
  - **Data Storage:** Select a data storage option.

**Note:** The Data Storage setting applies only to the dimension itself, not to all members in the dimension.

    - **Store:** Stores data values of members.
    - **Dynamic Calc and Store:** Not applicable in Enterprise Profitability and Cost Management.
    - **Dynamic Calc:** Calculates data values of members. The Dynamic Calc option only applies to attribute members.
    - **Never Share:** Prohibits implied sharing between parent and child members when only one child aggregates to the parent.
    - **Label Only:** Has no data associated with the member.
  - **Display Option:** Set the application default display option for the **Member Selection** dialog box. See [Using the Member Selector](#).
  - **Hierarchy Type:** The Hierarchy Type cannot be set when you initially create a dimension. You can set it later after the dimension is created. See [Editing Dimension Properties](#).
6. Select which cubes will use the dimension by selected **Enabled** next to the desired cube.
7. Click **Done**.

## Accessing the Dimension Editor

Use the Dimension Editor to edit the properties of dimensions and members.

To access the Dimension Editor:

1. From the Home page, select **Application**, and then **Overview**.
2. On the **Application** page, select the **Dimensions** tab.
3. Select a cube, and then click the name of a dimension.

The Dimension Editor is opened with the **Edit Member Properties** page displayed.

4. Navigate between the following tabs:



**Edit Member Properties**, where you can view and edit dimension members. See [Editing Member Properties](#).



**Edit Dimension Properties**, where you can view and edit dimension details. See [Editing Dimension Properties](#).

### Note:

In addition to managing dimensions in the Dimension Editor discussed here, you can also use the Classic Dimension Editor, which is accessed by using the **Dimensions** link in the Navigator menu. See [Administrative Tasks Accessed from the Navigator](#).

## Reviewing Dimensions

To review the dimensions in your application:

1. From the Home page, select **Application**, and then **Overview**.
2. On the **Application** page, select the **Dimensions** tab.

The dimensions and the number of members assigned to each dimension are displayed for each cube.

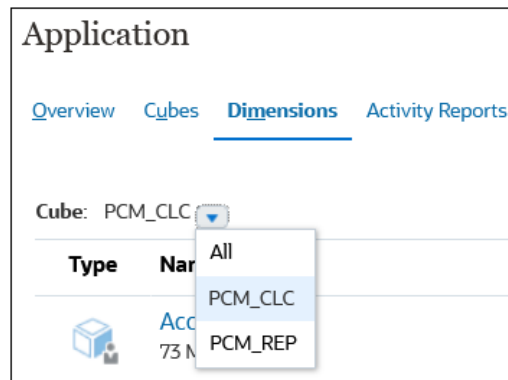
The screenshot shows the 'Application' page with the 'Dimensions' tab selected. The 'Cube' is set to 'PCM\_CLC'. The table below lists the dimensions and their member counts.

Type	Name	Order	Evaluation Order	Modified
	Account 73 Members	^ v	-	3/3/22 epm_default_cloud
	Period 18 Members	^ v	-	3/3/22 epm_default_cloud
	Activity 32 Members	^ v	-	3/3/22 epm_default_cloud
	Customer 1687 Members	^ v	-	3/3/22 epm_default_cloud
	Driver 3 Members	^ v	-	3/3/22 epm_default_cloud
	Years 11 Members	^ v	-	3/3/22 epm_default_cloud
	Entity 20 Members	^ v	-	3/3/22 epm_default_cloud
	Version 4 Members	^ v	-	3/3/22 epm_default_cloud

### Filtering Dimensions by Cube

You can filter the dimension view by cube. When you select a cube, only the dimensions used in that cube are displayed.

To filter the dimension view by cube, select which dimensions to display by selecting **All** or a cube name from the **Cube** drop-down list.



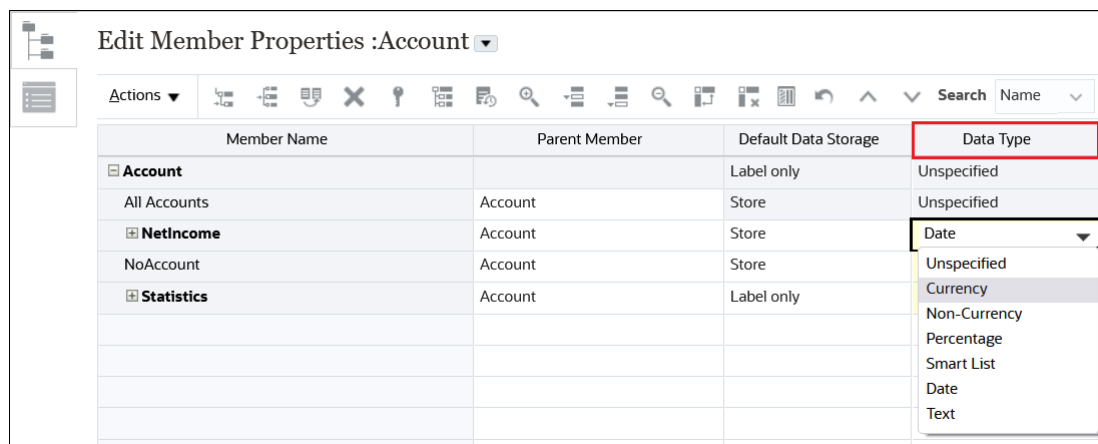
When you filter by cube, you can specify the order of precedence and the evaluation order for the dimensions.

### Setting the Order of Precedence and the Data Evaluation Order


Dimensions are listed in order of precedence. The order of dimensions is critical for the structure and performance of a business process. The order of your dimensions determines how your data calculations perform. You can strategically classify and order dimensions to improve performance.

Evaluation Order allows you to specify which data type prevails when a data intersection has conflicting data types. For example, if Account members are set to the Currency data type, and Product members are set to the Smart List data type, you can set whether the Currency or Smart List data type prevails at an intersection.

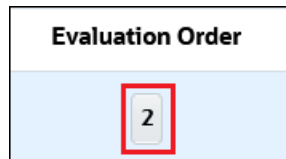
Data types are specified on the **Edit Member Properties** page. Click the down arrow in a cell in the **Data Type** column to select a data type. See [Editing Member Properties](#).



Order of precedence and data evaluation order is set per cube. You must select a cube to display the **Order** and **Evaluation Order** columns on the **Dimensions** tab.

To set the order of precedence, use the up and down arrows  next to a dimension in the **Order** column to move the dimension up or down.

To set an evaluation order for a dimension, click the square next to the dimension in the **Evaluation Order** column.



The square is updated with the dimension's position in the evaluation order.

If you want to exclude a selected dimension, click the square again to return it to its original state.




## Editing Dimension Properties



### Note:

Dimension properties must conform to guidelines listed in [Naming Restrictions for Dimensions, Members, and Aliases](#).

To edit dimension properties:

1. From the Home page, select **Application**, and then **Overview**.
2. On the **Application** page, select the **Dimensions** tab.
3. Select a cube, and then click the name of the dimension you want to edit.
4. Click  (**Edit Dimension Properties** tab).
5. On the property page for the dimension you selected, view or modify the following properties:
  - **Dimension:** This field displays the name of the dimension. You cannot change the dimension name for the Account, Scenario, Version, Entity, or the Balance and Rule system dimensions. It is also not recommended to change the dimension name for the Years and Period dimensions.
  - **Description:** (Optional) Description of the dimension.
  - **Alias Table and Alias:** (Optional) Select an alias table. Enter an alternate name for the dimension.
  - **Two Pass Calculation:** Not applicable in Enterprise Profitability and Cost Management.
  - **Apply Security:** Allow security to be set on the dimension members; must be selected before assigning access rights to dimension members. Otherwise, dimensions have no security and users can access members without restriction.
  - **Data Storage:** Displays the data storage option selected when the dimension was created. You cannot change the data storage option once it has been set.

- **Display Option:** Set application default display options for the **Member Selection** dialog box. See [Using the Member Selector](#).
  - **Hierarchy Type:** Select a hierarchy type. Valid options are:
    - **Not Set**—The hierarchy type is not set.
    - **Stored**—Stores data values of members. Members of stored hierarchies are aggregated according to the outline structure. Because aggregate storage databases are optimized for aggregation, the aggregation of data values for stored hierarchies is very fast. Stored hierarchies cannot have formulas.
    - **Dynamic**—Calculates data values of members. Because dynamic hierarchies are calculated, the data retrieval time may be longer than for data retrieved from stored hierarchies; however, dynamic hierarchies can contain any consolidation operator, and they can have formulas.
    - **Multiple**—The dimension contains more than one hierarchy. Dimensions can contain both Stored and Dynamic hierarchies.
6. In the **Cube** section, select the cubes for which the dimension is enabled. Clearing this option disables all members of the dimension for the deselected cube.
  7. **Optional:** For **Custom Attributes**, click to **Create** to create a custom attribute for a dimension. In the **Create Attribute** dialog box, enter the attribute name and select a data type. See [Working with Attributes](#).
  8. When you are finished editing dimension properties, click **Done**.

## Working with Members

### Related Topics

- [Adding Members to a Dimension](#)
- [Adding "No<dimname>" Members](#)
- [Editing Member Properties](#)
- [Deleting Members](#)
- [Adding Shared Members](#)
- [Assigning Access to Dimension Members](#)
- [Working in the Edit Member Properties Grid](#)

## Adding Members to a Dimension

To add a member to a dimension:

1. From the Home page, select **Application**, and then **Overview**.
2. On the **Application** page, select the **Dimensions** tab.
3. Select a cube, and then click the name of the dimension for which you want to add a member.
4. On the **Edit Member Properties** page, perform one of the following tasks:
  - To add a child member, select the parent level member, select the **Actions** drop-down, and then select **Add Child**.
  - To add a sibling member, select a member, select the **Actions** drop-down, and then select **Add Sibling**.

See [Naming Restrictions for Dimensions, Members, and Aliases](#).

5. To set or change member properties, click a cell in the **Edit Member Properties** grid and make updates.
6. **Optional:** To add members to a different dimension, click the arrow next to the dimension name at the top of the **Edit Member Properties** page, and select another dimension.
7. Click **Save**.

## Adding "No<dimname>" Members

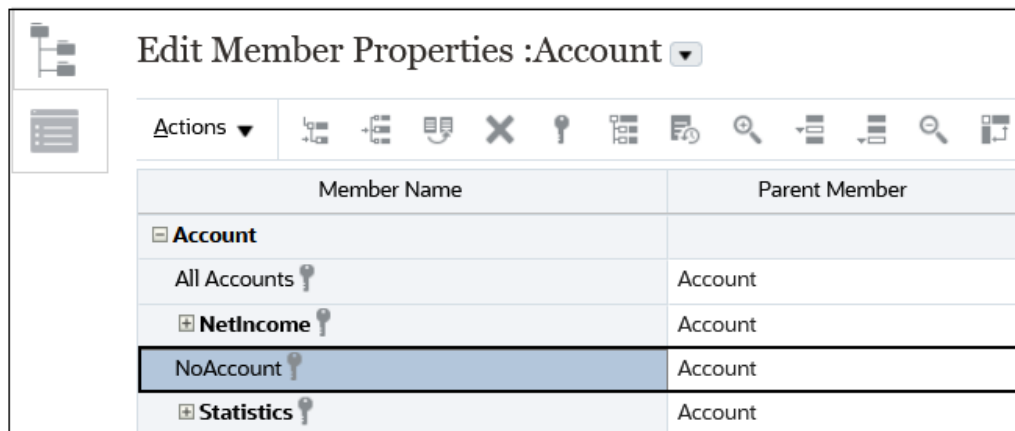
When you create rules in Enterprise Profitability and Cost Management, you must assign members to every dimension in the rule. See [Dimension and Member Requirements When Creating Rules](#).

For dimensions that are not relevant in a rule, you still must assign a member. In this case, you assign a "No<dimname> " member, where <dimname> is the name of the dimension to which you are adding the member.

As a best practice, you should set up a "No<dimname>" member for the following dimensions before you start creating rules so that the member will be available during rule creation:

- Entity
- Account
- Currency (if you have a multi-currency application)
- Any custom dimensions that you have created

In the example below, a **NoAccount** member is assigned to the Account dimension.



Member Name	Parent Member
<b>Account</b>	
All Accounts	Account
NetIncome	Account
NoAccount	Account
Statistics	Account

## Editing Member Properties

The **Edit Member Properties** page displays dimensions and members in a grid format. With the grid format, dimensions and members are editable on a single page. You can edit member properties directly on the grid and you can perform ad hoc operations such as zooming in, zooming out, keep selected, remove selected, and freeze.

To edit member properties:

1. From the Home page, select **Application**, and then **Overview**.
2. On the **Application** page, select the **Dimensions** tab.
3. Select a cube, and then click the name of the dimension for which you want to edit member properties.
4. On the **Edit Member Properties** page, click within a grid cell to edit text or to view a drop-down menu from which you can choose member properties.

Each column in the grid represents a member property. The columns that initially display can be different based on which dimension you are editing. You can customize the layout of the columns by hiding, unhiding, or resizing columns. See [Customizing the Column Layout](#).

## Deleting Members


Each data value is identified by a set of dimension member values and a cube. Deleting dimension members or deselecting cubes in a member's properties results in data loss when refreshing an application.

Before deleting members, it is important to understand where in the application they are used (in which forms, approval units, exchange rates, and so on). To do this, select the member in the **Edit Member Properties** grid, click **Actions**, and select **Show Usage**.

You must delete the entity member throughout the application before deleting it from dimension. For example, if the entity member is used in a form, you must delete it from the form before deleting it from dimensions.

If you delete members from dimensions that are referenced in existing rules, the rules can't run.

To delete members:

1. From the Home page, select **Application**, and then **Overview**.
2. On the **Application** page, select the **Dimensions** tab.
3. Select a cube, and then click the name of the dimension that contains the member you want to delete.
4. On the **Edit Member Properties** page, select the member to delete, and click  (Delete Member icon).

### Note:

Deleting a base member also deletes its descendants and associated shared members.

5. Click **OK** in the **Delete Member** confirmation window.

## Adding Shared Members

Sharing members allows alternate rollup structures within an application. When added shared members, keep in mind the following:

- A base member must exist before you can create a shared member. You can create multiple shared members for the base member. A base member must display before its shared members in position from top to bottom.
- Shared members are available for Entity, Account, and user-defined custom dimensions. Shared member values can be ignored to avoid double-counting values when you roll up the outline.
- Shared members share some property definitions with base members, such as member name, alias name, base currency, and cubes for which members are valid. Shared members must have unique parent members and different rollup aggregation settings. Custom attributes, custom attribute values, and member formulas are not allowed for shared members. Renaming base members renames all shared members.
- Shared members must have the same names as their base member. Also, base and shared member names are case-sensitive.
- Shared members can't be moved to another parent member. You must delete shared members and recreate them under different parent members. The base member need not be level zero. You can enter data in shared members, and values are stored with base members.

To add shared members:

1. From the Home page, select **Application**, and then select **Overview**.
2. On the **Application** page, select the **Dimensions** tab.
3. Select a cube, and then click the name of the dimension for which you want to add a member.
4. In **Edit Member Properties**, add the shared members:
  - Add a child member with the same name as the base member.
  - For **Parent Name** of the new member, type a new parent name.
  - For **Default Data Storage** of the new member, select **Shared**.
5. Click **Save**.

Data storage properties for all other cubes will automatically be set to **Shared**.



#### Note:

See [About Effective Access Permissions for Shared Members](#) for information on access permissions for shared members.

## Assigning Access to Dimension Members

### Related Topics


- [Adding, Editing, and Removing Access to Members](#)
- [About Effective Access Permissions for Shared Members](#)


## Adding, Editing, and Removing Access to Members

You can specify which users and groups can access the selected member.



To assign, edit, and remove member access permissions:

1. From the Home page, select **Application**, and then **Overview**.
2. On the **Application** page, select the **Dimensions** tab.
3. Select a cube, and then click the name of the dimension for which you want to edit member properties.
4. On the the **Edit Member Properties** page, select a member, and then click  (Assign Permission icon).
5. In the **Assign Permissions** dialog box, select the **Permissions** tab.
6. Click **Add User/Group**, and select the users or groups for which you would like to add permissions.

Click **Users** to display all user names; click **Groups** to display all groups; or click  to search to search for a particular user or group.

When you select a user or group, click **OK** to add the user or group to the **Permissions** tab.

After you have selected all the users and groups for which you want to add permissions, click **Close**.

7. On the **Permissions** tab, assign permissions to the users and groups you just selected.
  - **Permission:** Select **Read**, **Write**, or **None**
  - **Relation:** Select a relationship. For example, select **Children** to assign access to the children of the selected member.
8. Click **Save** and then **OK** to save the permissions.
9. Click **Cancel** to close the **Assign Permission** dialog box.

## About Effective Access Permissions for Shared Members

You can't assign access directly to a shared member. A shared member inherits access permissions from its base member, parent, or ancestor.

The application checks access permissions at each level, first by user, then by group, based on the member's access permissions inheritance relationship. If multiple access permissions exist, the least restrictive access permission is applied (for example, Write access takes precedence over Read access).

### Sample Parent and Child Entity Members

- + **United States**
  - CA (base)
  - NY
- + **West**
  - CA (shared)
  - NV
- + **Sales Region 1**
  - CA (shared)

**Table 3-1 Example of Inherited Access to Shared Members**

Case	Access Permission	Effective Access for Base and Shared Member CA	Explanation
Case 1	CA (base) = None iDescendants (West) = Read	Read	CA inherits Read access from its West parent because Read is less restrictive than None.
Case 2	iDescendants (United States) = None iDescendants (West) = Read iDescendants (Sales Region 1) = Write	Write	CA inherits Write access from its Sales Region 1 parent because Write is less restrictive than Read or None.
Case 3	iDescendants (United States) = Write iDescendants (West) = None iDescendants (Sales Region 1) = Read	Write	CA inherits Write access from its United States parent because Write is less restrictive than Read or None.

## Working in the Edit Member Properties Grid

### Related Topics

- [Switching to Another Dimension](#)
- [Customizing the Column Layout](#)
- [Context Menu Options](#)
- [Viewing Ancestors](#)
- [Showing Member Usage in an Application](#)
- [Focusing Your Editing](#)
- [Finding Members](#)
- [Moving Members](#)
- [Sorting Members](#)
- [Moving Members to Another Hierarchy](#)
- [Working with Member Formulas](#)
- [Copying Member Names from Microsoft Excel](#)

### Switching to Another Dimension

To switch to another dimension while working with members in the grid, click the down arrow next to the dimension name at the top of the page and select a dimension.

**Note:**

The dimension drop-down displays all of the dimensions, regardless of the cube you are currently viewing.

## Customizing the Column Layout


Each column in the grid represents a member property. The columns that initially display may differ based on which dimension you are editing. You can customize the layout of columns in the grid by hiding, unhiding, moving, or resizing columns.

You can customize the layout of columns in the **Edit Member Properties** grid by hiding, unhiding, resizing, or reordering columns. You can also display the complete set of properties (all columns) by selecting **Select All** in the **Select Columns** dialog box.

The properties listed in the column selector are not a flat list of properties. Instead, properties are grouped in the column selector according to their functionality. For example, Account-specific properties such as **Account Type**, **Variance Reporting**, and **Time Balance**, are grouped under **Account** in the column selector. When you select **Account** in the column selector, all properties in the group are selected for inclusion in the grid. Then you can clear the checkboxes for any properties that you don't want added to the grid.

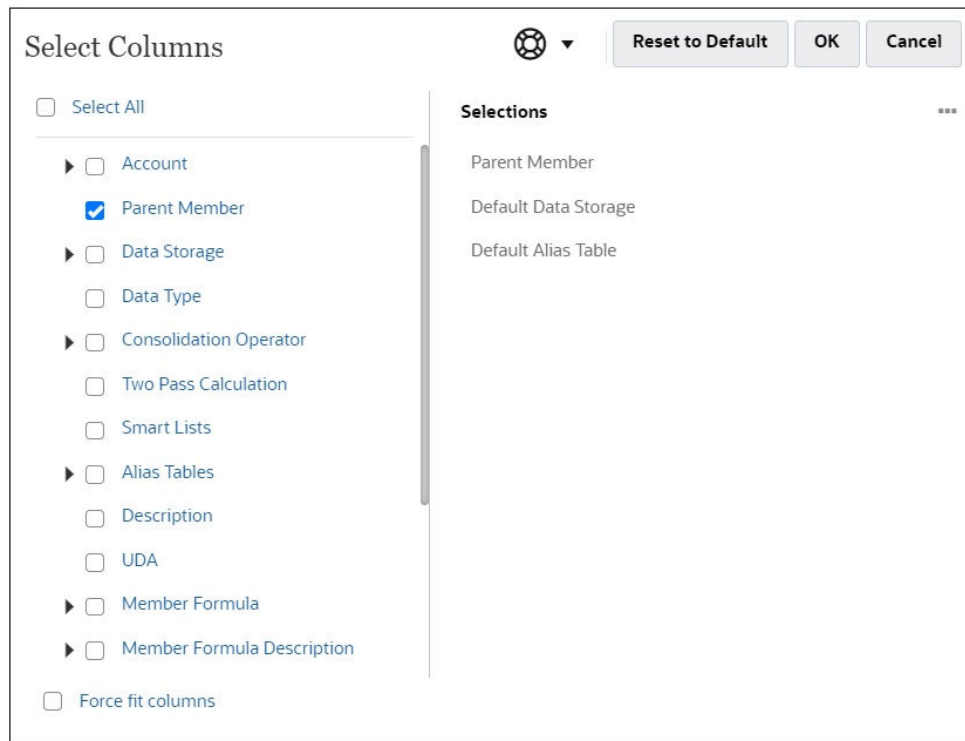
To customize the column layout in the **Edit Member Properties** grid:



1. Right-click any column heading.

Alternatively, you can display this dialog box by clicking  or by clicking **Actions**, and then **Select Columns**.

2. The **Select Columns** dialog box displays.

The Select Columns dialog box displays:



3. Select or clear the check boxes for the columns (properties) you want to add to or remove from the grid. Select a top-level group such as **Account** or **Data Storage** to select all of the properties grouped under those categories.
  - To display all property columns on the grid, click **Select All**.
  - In the **Selections** pane of the **Select Columns** dialog box, columns appear in the order they are selected, and this is the order in which they will be displayed on the grid. To reorder the columns on the grid, hover over a column in the **Selections** pane, then select the up or down arrows to move the column up or down in the order.  
You can also reorder columns by dragging and dropping them directly on the grid.
  - To remove a column from the **Selections** pane, hover over a column and click .
  - To remove all columns from the **Selections** pane, click , and then select **Remove All**.
  - To view the columns that initially displayed on the grid, click **Reset to Default**.

After making your selections, the columns you select will be saved for the next session.

4. To change the size of the grid or the columns that are displayed on the grid, select or clear the **Force fit columns** option. Selecting the **Force fit columns** option resizes the columns so that all columns are visible on the grid without scrolling.

## Context Menu Options

In the **Edit Member Properties** grid, right-click on a cell in the grid to view the following context menu options:

- **Move** options:
  - **Move Up**: Moves the member up one position
  - **Move Down**: Moves the member down one position
- **Zoom In** options:
  - **Zoom in Next Level**: Displays all members one level below the selected member
  - **Zoom in All Levels**: Displays all descendant members below the selected member
  - **Zoom in Bottom Level**: Displays all descendant members of the selected member that have no children
- **Zoom Out**: Displays the member one level above the selected member
- **Keep Selected**: Displays only the selected row or column on the grid
- **Remove Selected**: Removes the selected row or column from the grid
- **Delete**: Deletes the selected member, its descendants, and associated shared members

 **Note:**

The context menus might differ depending on the dimension you are viewing. For some members, certain commands like **Move** or **Delete** are disabled.

## Viewing Ancestors

Ancestors are all the members above the selected member in the dimension hierarchy.

To view the ancestors for a member:


1. Select a member in the grid.
2. Click **Actions**, and select **Show Ancestors**.

## Showing Member Usage in an Application

Before performing operations such as deleting members, it is important to understand where in the application the members are used.

To view where members are used in an application:

1. Select a member in the grid.
2. Click **Actions**, and select **Show Usage**.

Alternatively, you can click  to view where a member is used in the application.

## Focusing Your Editing

To focus your editing on specific members in the grid, select a member, click **Actions**, and select one of the following zoom operations:

- **Zoom In Next Level:** Displays all members one level below the selected member
- **Zoom In All Levels:** Displays all descendant members below the selected member
- **Zoom In Bottom Level:** Displays all descendant members of the selected member that have no children
- **Zoom Out:** Displays the member one level above the selected member





To focus your editing on specific rows or columns in the grid, select a row or column, and select an operation:

- **Keep Selected:** Displays only the selected row or column on the grid
- **Remove Selected:** Removes the selected row or column from the grid
- **Freeze (Columns only):** Keeps the selected column and all columns to the left of the selected column stationary so the column or columns can't be scrolled. Only columns to the right of the frozen column can be scrolled. For example, you can freeze the first column that includes the member name so that you can scroll and edit that member's properties and still see the member name. To unfreeze columns, click Freeze once again.



## Finding Members

To find members in the grid:

1. Click the drop-down next to Search at the top of the grid, and select **Name**, **Alias**, or **Both**.
2. Enter the search text (member name, alias, or partial string) for which to search.
3. Select one of the following search options:

-  **Search Up**
-  **Search Down**
-  **Filtered Search** searches for all members that match the search term and returns a list of members. Click  **Clear Filter** to display the unfiltered grid again.

## Moving Members



To move a member in the grid, select the member and click  to move the member up one position, and click  to move the member down one position. Moving members affects the outline.

Alternatively, you can click **Actions**, then select **Move Up** or **Move Down** to move a member up or down one position in the hierarchy. You can also right-click on a cell in the grid to view the **Move** options.


## Sorting Members

You can sort members in ascending or descending order, by children or descendants. Sorting members affects the outline. For example, you can alphabetize a list of child members by sorting in descending order to help users quickly locate members in hierarchies in the Simplified dimension editor.

To sort members in the grid:

1. Select the members whose children or descendants you want to sort.
2. In the **Sort** drop-down, select **Children** or **Descendants**.
3. Click  to sort in ascending order, or click  to sort in descending order.

### Note:

- If you do not see the Sort options at the top of the page, click .
- Sorting by children affects only members in the level immediately below the selected member. Sorting by descendants affects all descendants of the selected member.

## Moving Members to Another Hierarchy

To move members to another hierarchy in the grid:

1. In the **Parent Member** column of the grid, type a new parent name for the member you want to move.
2. Click **Save**.

## Working with Member Formulas

You can define or edit member formulas directly in the grid, in the formula bar, or in the **Member Formula** dialog box, where you can validate member formulas.

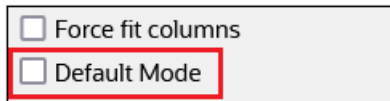
You can define member formulas that combine operators, calculation functions, dimension and member names, and numeric constants to perform calculations on members.

Member formulas can also include:


- Operator types, functions, values, member names, and UDAs
- Predefined formula expressions, including Smart List values, that expand into a formula or value upon database refresh

To define or edit member formulas:


1. Right-click a column heading and clear the **Default Mode** option on the drop-down menu.




For more information on the Default Mode setting, see [Customizing the Column Layout](#).

2. In the grid, select the member for which you want to add a formula.
3. With the member selected, scroll to the right in the grid until you see the **Default Formula** column.
4. In the **Default Formula** column, perform one of the following tasks;
  - Double-click a cell in the grid, and then enter or edit a formula in the dialog box that appears.
  - Click within the formula bar above the dimension editor grid, and enter or edit a formula.
  - Click  next to the formula bar, and then enter or edit a formula in the **Member Formula** dialog box. When you enter a formula in the Member Formula dialog box, you can take advantage of the editing icons at the top of the dialog box, and you can validate the formula.

 **Tip:**

- If you don't see the **Default Formula** column, you'll need to add it to the grid. Click  to open the **Select Columns** dialog, expand **Member Formula**, select **Default Formula**, and then click **OK**. After selecting it, the **Default Formula** column will be included in the grid for all subsequent sessions.
- To include member names in formulas, keep the focus on the formula cell in the grid. Press **Ctrl** while clicking the member name you want to include in the formula. The member name will display in the formula bar.

5. **Optional:** To check the validity of a member formula, click  next to the formula bar, and then click **Validate**.
6. Click **Save**.

## Copying Member Names from Microsoft Excel

To copy and paste member names from Microsoft Excel:

1. In Excel, highlight the member names in one cell or in a range of cells, and press **Ctrl+C** to copy the data onto the clipboard.
2. Highlight and select the target cell or cells in the Simplified dimension editor, and then press **Ctrl+V**.
3. When the Clipboard helper is displayed, press **Ctrl+V** again. The data is pasted to the Clipboard helper.



4. Click **Paste** to paste the data into the grid.

## Working with Attributes

### Related Topics

- [About Attributes](#)
- [Understanding Attribute Data Types](#)
- [Creating an Attribute Dimension](#)
- [Adding or Editing Attribute Dimension Members](#)
- [Working with User-Defined Attributes \(UDAs\)](#)

## About Attributes

Attributes describe characteristics of data, such as the size and color of products. You can use attributes to group and analyze members of dimensions based on their characteristics. For example, you can analyze product profitability based on size or packaging, and you can make more effective conclusions by incorporating market attributes, such as the population size of each market region, into your analysis.

When working with attributes, note the following:

- Attribute names must conform to guidelines listed in [Naming Restrictions](#).
- Attributes dimensions are associated with base dimensions.
- Attribute dimensions don't have aggregation properties because parents are dynamically calculated.
- You can't assign attributes to label-only members.

## Understanding Attribute Data Types

Attribute dimensions can have a data type of text, numeric, Boolean, or date that enables different functions for grouping, selecting, or calculating data. The attribute type applies only to level 0 members of the attribute dimension.

- **Text** attributes enable basic attribute member selection and attribute comparisons in calculations. When you perform such comparisons, characters are compared. For example, a package type *Bottle* is less than a package type *Can* because *B* precedes *C* in the alphabet.
- **Numeric** attribute dimensions use numeric values for the names of level 0 members. You can include the names (values) of numeric attribute dimension members in calculations. For example, you can use the number of ounces specified in an *Ounces* attribute to calculate profit per ounce for each product. You can also associate numeric attributes with ranges of base dimension values, for example, to analyze product sales by market population groupings.
- **Boolean** attribute dimensions in a database contain only two members. When a Boolean attribute dimension is added in the business process, two attribute values, *True* and *False*, are created for this attribute dimension by default. A base dimension, such as *Account* or *Entity*, can be associated with only one attribute dimension that has the Boolean data type.

- **Date** attributes can specify the date format as month-day-year or day-month-year, and sequence information accordingly. You can use date attributes in calculations, for example, comparing dates in a calculation that selects product sales since 12-22-1998.


 **Note:**

Before you can work with date attributes, you must set the **Attribute Dimension Date Format** setting on the **Application Settings** page and save it. From the Home page, select **Application**, and then **Settings**. In **Attribute Dimension Date Format**, select a date format (MM-dd-yyyy or dd-MM-yyyy), and then click **Save**. After you select and save the date format, you must manually change any existing attribute date values to the supported format. If any date attributes in your application use an unsupported format, the system provide you with a list of dimension attribute values that you need to fix.

If the **Attribute Dimension Date Format** setting is changed in the Application Settings, you must change any date attributes in the original format to the new format before you can add or save a new attribute.

## Creating an Attribute Dimension

To create an attribute dimension:


1. From the Home page, select **Application**, and then **Overview**.
2. On the **Application** page, select the **Dimensions** tab.
3. Select a cube, and then click the name of the dimension for which you want to assign an attribute.
4. Click  (**Edit Dimension Properties** tab).
5. On the property page for the dimension, in the **Custom Attributes** section, click **Create**.
6. In the **Create Attribute** dialog box, enter the the following information:

- **Name:** See [Naming Restrictions for Dimensions, Members, and Aliases](#).
- **Data Type:** See [Understanding Attribute Data Types](#).

**Note:** The **Is Indexed Attribute?** option is not applicable to Enterprise Profitability and Cost Management.

7. Click **Save**.

 **Note:**

To edit or delete an attribute dimension, click  (**Actions** icon) next to the attribute, and select **Edit** or **Delete**.

## Adding or Editing Attribute Dimension Members

When an attribute dimension is associated with a base dimension, it displays on the **Dimensions** page in the same way as the base dimension. To view attribute dimensions in the listing, select **All** in the **Cube** drop-down list on the main **Dimensions** page. You can then select the attribute dimension to add or edit attribute dimension members. Review the detailed steps below.

To add or edit attribute dimension members:

1. From the Home page, select **Application**, and then select **Overview**.
2. On the **Application** page, select the **Dimensions** tab.
3. For **Cube**, select **All**.
4. Select an attribute dimension.
5. In **Edit Member Properties**, perform one of the following tasks:
  - To add a child member, select the parent level member, select the **Actions** drop-down, and then select **Add Child**.
  - To add a sibling member, select a member, select the **Actions** drop-down, and then select **Add Sibling**.
6. To set or change member properties, click a cell in the **Edit Member Properties** grid and make updates.
7. **Optional:** To assign members to a different attribute dimension, click the arrow next to the dimension name at the top of the **Edit Member Properties** page, and select another attribute dimension.
8. Click **Save**.



### Note:

Alternatively, you can select the base dimension on the **Dimensions** tab, and then select the attribute dimension from the drop-down next to the base dimension on the **Edit Member Properties** page.

## Working with User-Defined Attributes (UDAs)

You can use user-defined attributes (UDAs), descriptive words or phrases, within calc scripts, member formulas, reports, and forms. UDAs return lists of members associated with the UDA.





For example:

- For a Product dimension with several product members, you can create a UDA called New Products and assign this UDA to the new products in the Product dimension hierarchy. Then you can base certain calculations on the designation New Products.
- When designing forms, you can use a UDA to select members for forms based on a common attribute. When you create forms with UDAs, any members that are assigned to the UDA are dynamically added to the form. For example, if you create a UDA called New Products and assign this UDA to the new products in the Product dimension

hierarchy, the form will automatically display the new products at runtime. When selected in the form designer, a UDA is preceded by <sup>UDA</sup>; for example, UDA (New Products).

UDAs are specific to dimensions. For example, creating a UDA for an Account member makes it available for non-shared Account members. Deleting it removes it for all Account members. To make UDAs available for multiple dimensions, create the same UDA for multiple dimensions. For example, create a UDA named New for Account and Entity dimensions to make the UDA named New available for Account and Entity members.

To create or edit UDAs:

1. From the Home page, select **Application**, and then **Overview**.
2. On the **Application** page, select the **Dimensions** tab.
3. Select a cube, and then click the name of the dimension for whose members you want to associate the UDA.
4. On the dimension grid, right-click any column heading, and then clear the **Default Mode** option to make the **UDA** column visible.
5. In the grid, select the member to associate with the UDA, and then scroll to the right until you see the **UDA** column.
6. Click in cell in the **UDA** column to display the **UDA** dialog box.
7. Select a task:
  - To create a UDA, click , enter a name, and then click **Save**.
  - To modify a UDA, select the UDA, click , change the name, and then click **Save**.
  - To delete a UDA, select the UDA, click , and then confirm deletion.  
**Note:** Deleting a UDA removes it for the whole dimension. If you delete UDAs, you must update all member formulas, calc scripts, and reports that reference them.
  - To clear UDA selections, click .
8. To add or remove UDAs for the member, use the arrows to move UDAs to and from the **Selected UDA** panel.
9. Click **OK**.

## Importing and Exporting Dimension Metadata

### Related Topics

- [Importing Metadata](#)
- [Exporting Metadata](#)

## Importing Metadata

You can import metadata from a flat file in a comma-delimited, tab-delimited, or other format.

These artifacts are supported in the imports:

- Dimensions
- Smart Lists
- Exchange rate tables (See [Importing Exchange Rates for a Multicurrency Application.](#))

To import metadata:

1. Create an import file for each artifact that you want to import.

See [About the Metadata Import File.](#)

2. Load the import file or files.

You can import multiple dimension files at the same time. See [Loading the Metadata Import File.](#)

When importing metadata, keep in mind the following points:

- You cannot rename members of attribute dimensions during a metadata import. Renaming of members will be ignored.
- You cannot delete attribute dimensions while importing metadata.

## About the Metadata Import File

Before you begin loading metadata, you must create an import file for each artifact that you want to import (dimensions, smart lists, and exchange rate tables).

The import file must contain a header record. The header record:

- Is the first line in the file
- Lists the dimension and any member properties used by subsequent metadata records. The header record and subsequent records do not need to include all properties. Properties that are not included are inherited from the corresponding parent's default property value. If the header record does not contain a property column like Data Storage, the data storage for a member will be inherited from that member's parent member.
- Is case sensitive
- Can list properties in any order, as long as the subsequent metadata records are in the same order
- Can use comma or tab delimiters. Other delimiter characters can be used if they are supported and the same delimiter character is used throughout the file. For a list of supported delimiter characters and exceptions, see [Other Supported Delimiter Characters.](#)

The header record should be followed by a list of metadata records to import or update.

- Each metadata record must contain a delimited list (comma, tab, or other) of property values that matches the order designated in the header record.
- A metadata record can skip a property that is specified in the header record; in this case, the default property is assumed.

- The file format can be .csv (comma-delimited) or .txt (tab-delimited or other delimiter characters).

For an example import file, see [Example Entity Dimension Import File](#).



#### Note:

Only characters that are included in the UTF-8 character set are supported in import or export files. Characters that aren't included in the UTF-8 character set are considered invalid. For dimension name restrictions, see [Naming Restrictions](#).

## Example Entity Dimension Import File

```
Entity,Parent,Data Storage,Plan Type (Plan1),Plan Type (Plan2),Plan Type (Plan3),Data Type,Base Currency,
Alias: Default NoEntity, ,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Unspecified Entity
AllEntities, ,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Total Entity
1000,AllEntities,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Agencies
1001,1000,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Administration and Finance
1011,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Office of the Secretary of Administration and Finance
1012,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Bureau of State Office Buildings
1101,1012,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Finance and Administration
1102,1012,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,State Office Buildings
1103,1012,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Safety and Security
1104,1012,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,State House ADA/Communications Access
1105,1012,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,State House Events
1013,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Civil Service Commission
1014,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Department of Revenue
1106,1014,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Child Support Enforcement
1107,1014,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Division of Local Services
1108,1014,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Appellate Tax Board
1015,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Developmental Disabilities Council
1016,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Division of Administrative Law Appeals
1017,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Dept. of Revenue
1018,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Executive Office for Administration and Finance
1019,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,George Fingold Library
1020,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Group Insurance Commission
```

In this example, the import file loads an Entity dimension with the required header record and three data records. This example is comma-delimited. The header record specifies the member to be imported (Entity), the parent member (Parent) into which to import the member, and the Data Storage property to assign to the member.

```
Entity, Parent, Data Storage
e1, Entity,
e2, ,
e1, e2, Shared
```

Using this import file would result in this outline, assuming that no other members exist:

```
Entity
e1
e2
  e1 (Shared)
```

The first data record (e1, Entity) imports Entity member e1 as a child under the root member Entity. Unspecified values assume the default. For example, if data storage isn't specified, it assumes the default value, Never Share. The next data record (e2, ,) imports Entity member e2 under the dimension root member because no parent is specified, and sets data storage to Never Share. The last data record (e1, e2,

Shared) imports a shared member of e1 under member e2, and sets data storage to Shared.

## Other Supported Delimiter Characters

In addition to commas and tabs, Enterprise Profitability and Cost Management supports these delimiter characters in import and export files:

- tilde (~)
- grave accent (`)
- exclamation point (!)
- number sign (#)
- question mark (?)
- dollar sign (\$)
- percent sign (%)
- caret (^)
- ampersand (&)
- asterisk (\*)
- parentheses ( )
- hyphen-minus (-)
- plus (+)
- colon (:)
- semicolon (;)
- angle brackets (< >)
- backslash (\)
- forward slash (/)
- vertical bar (|)
- apostrophe (')
- braces ({ })
- underscore (\_)
- brackets ([ ])
- at sign (@)
- period (.)

Only one character is supported for use as a delimiter. For example, one vertical bar (|) is supported, but two vertical bars (||) are not supported.

### **Caution:**

Not all of the characters listed can be used for all import and export scenarios. Note the following exceptions.

### Import and Export Metadata Delimiter Exceptions

Do not use these delimiter characters in metadata import and export files.

**Table 3-2 Import and Export Metadata Delimiter Exceptions**

Delimiter Character	Reason for Exception
double quotation mark (")	Creates an empty file
plus (+) minus (-) forward slash (/) percent sign (%)	Causes an error if the metadata import file contains consolidation properties that use these characters
angle brackets (< >)	Causes an error if a property uses the value <none>



**Note:**

Any character that conflicts with a character in a member name will cause an error.

### Import and Export Data Delimiter Exceptions

**Table 3-3 Import and Export Data Delimiter Exceptions**

Delimiter Character	Reason for Exception
apostrophe (')	Causes an error if used in a cube name
parentheses ( )	Causes an error if used in a data import file
double quotation mark (")	Creates an empty file
hyphen-minus (-)	Causes an error if used in a data import file

## Loading the Metadata Import File



**Note:**

When performing metadata loads as a part of cloning environments or importing snapshots using Migration or EPM Automate, Oracle Enterprise Performance Management Cloud uses the multi-pass solution. This solution automatically initiates another load of the same metadata input file if the previous metadata load resulted in rejected records. For Financial Consolidation and Close, multi-pass also resolves issues with forward referencing of plug accounts.

To load the metadata import file:



1. Create a metadata import file for each artifact (dimensions, smart lists, and exchange rate tables) that you want to import.  
See [About the Metadata Import File](#).
2. From the Home page, select **Application**, and then select **Overview**.
3. On the **Application** page, select the **Dimensions** tab, and then click **Import**.
4. On the **Import Metadata** page, click **Create**.
5. Select the location of the metadata import file or files:
  - **Local**: Loads the import file or files from a location on your computer. For **Import File**, click **Browse** to select the import file on your computer for the artifact you are importing.
  - **Inbox**: Loads the import file or files from the server. Enter the name of the file in **Import File**. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).
6. For **File Type**, select **Comma delimited**, **Tab delimited**, or **Other**.  
If **Other** is selected, enter the delimiter character that is used in the import file. For a list of supported delimiter characters and exceptions, see [Other Supported Delimiter Characters](#).
7. **Optional**: Select **Clear Members** to delete members not explicitly specified in the load file before performing the import.
  - Any member not specified is deleted from the application outline after importing the dimension unless it's an ancestor of a member that was specified, or it's a base member of a shared member that was specified.
  - If **Clear Members** isn't selected, the import will only add new members or update existing members. Oracle recommends loading the metadata file without selecting **Clear Members** to make sure the file loads successfully; then, select **Clear Members** and execute the import again
  - **Clear Members** is unavailable in certain dimensions where members must exist and are critical to the application. You cannot clear members in the Years, Period, and Currency dimensions; the Balance system dimension; and the PCM\_Calculation Rules and PCM\_No Rule hierarchies in the Rule system dimension. In addition, you cannot clear any member used in a POV group.
  - Members that can't be deleted in the dimension editor for any reason (for example, because they're used in a form or in a validation rule) won't be deleted.
8. **Optional**: If the location selected is **Inbox**, you can click **Save as Job** to save the import operation as a job, which you can schedule to run right away or at a later time. See [Managing Jobs](#).
  - Saving an import operation as a job is useful to batch a load sequence; for example, import metadata, then import data, then run models when the data load is complete.
  - You can run up to five import jobs at one time.
  - If you want to review the data that was rejected during the metadata import job, you can specify an **Error File** in the **Save as Job** dialog box. This file will provide information about the metadata records that were not imported for each dimension. If an error zip file is specified, a separate error file is created for each dimension, then the error files are zipped together, and the zip file is stored in the Outbox where you can download the file using Inbox/Outbox Explorer. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).

9. **Optional:** If the location selected is **Local**, click **Validate** to test whether the import file format is correct.
10. Click **Import** to run the import operation.

If the import fails, a **Failed** status will display in the **Last Validate/Import** column. Click **Failed** to view the detailed status. If the import is successful, a **Completed** status will display in the **Last Validate/Import** column. To view details about the successful import, click **Completed**, and then in the **Show** drop-down, select **All**.

 **Note:**

If the cubes listed in the import file don't match the cube names in the application, the application will ignore unrecognized cube columns.

## Exporting Metadata

You can export metadata to a flat file in a .csv (comma-delimited) or .txt (tab-delimited or other delimiter character) format.

These artifacts are supported in an export:

- Dimensions
- Smart Lists
- Exchange rates (See [Importing Exchange Rates for a Multicurrency Application](#).)

Enterprise Profitability and Cost Management creates an export file for each artifact (.txt or .csv, depending on the file type), and all export files are consolidated into one zip file. You must extract the .csv or .txt files from the zip file if you want to use the files as import files (for example, when importing into another application).

 **Note:**

Only characters that are included in the UTF-8 character set are supported in export or import files. Characters that aren't included in the UTF-8 character set are considered invalid. For dimension name restrictions, see [Naming Restrictions for Dimensions, Members, and Aliases](#).

To export metadata to a flat file:

1. From the Home page, select **Application**, and then select **Overview**.
2. On the **Application** page, select the **Dimensions** tab, and then click **Export**.
3. On the **Export Metadata** page, click **Create**.
4. Select the target environment of the export file:
  - **Local:** Saves the export file to a location on your local computer.
  - **Outbox:** Saves the export file to the server where you can use it to schedule the export job. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).

 **Note:**

- You can run up to five export jobs at one time.
  - When scheduling export jobs, you can specify a unique output file name for each job.
  - For more information about scheduling jobs, see [Managing Jobs](#).
5. Select the artifact or artifacts to export.
  6. For **File Type**, select an option.
    - **Comma delimited**: Creates a comma-delimited .csv file for each artifact.
    - **Tab delimited**: Creates a tab-delimited .txt file for each artifact.
    - **Other**: Creates a .txt file for each artifact. Enter the delimiter character that you want to use in the export file. For a list of supported delimiter characters and exceptions, see [Other Supported Delimiter Characters](#) .
  7. **Optional**: If the location selected is **Outbox**, click **Save as Job** to save the export operation as a job, which you can schedule to run right away or at a later time. See [Managing Jobs](#).
  8. Click **Export**, and then specify where to save the export file.

## Viewing Activity Reports

Activity reports are automatically generated every day and enable Service Administrators to understand application usage over a period of five, ten, thirty, or sixty days. The reports help streamline application design by identifying calculation scripts and user requests that impact application performance. Information provided in these reports includes:

- User information such as number of users who signed into the application each day, each hour, last seven days, and last 30 days
- Percentage of requests that took more than 10 seconds to complete
- Ranking of requests by duration
- Ranking the performance of requests that took more than 10 seconds to complete
- Number of application design changes that occurred over the reporting period
- Number and duration of user interface requests per hour
- CPU and memory usage by hour

To view activity reports:

1. From the Home page, select **Application**, and then **Overview**.
2. Select the **Activity Reports** tab.
3. To view report details, click **View** next to the name of the report that you want to view.
4. **Optional**: To save a report to another location, right-click the report while viewing it, and then select **Save Page As**. To download the access logs for a report, click **Download** next to the desired report.



**Note:**

For more information on Activity Reports, see [Monitoring EPM Cloud](#) in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

## Importing and Exporting Data

### Related Topics

- [Importing Data](#)
- [Driver Member Casting Errors](#)
- [Exporting Data](#)
- [Viewing Data Import and Export Status](#)

## Importing Data

After you import dimensions, you can populate the application with data from a data import file.



**Note:**

When importing data, no validation is performed on intersections to determine which are valid, and data is loaded into all intersections. To review data that has been loaded into invalid intersections, run the Invalid Intersection report before importing data to see and clear invalid intersections. See [Working With Invalid Intersection Reports..](#)

To import data:

1. From the Home page, select **Application**, and then select **Overview**.
2. On the **Application** page, select **Actions**, and then **Import Data**.
3. On the **Import Data** page, click **Create**.
4. For **Location**, select the location of the data import file:
  - **Local**: Imports the data import file from a location on your computer.
  - **Inbox**: Imports the data import file from the server. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).Valid data import file types are .csv, .txt, or .zip.
5. Select the **Source Type** of the data import file:
  - **Default**: Loads data in a business process-specific data file format. If you select this option, select **Comma delimited**, **Tab delimited**, or **Other**.
    - If an import error occurs during a business process-specific data load, the import will continue to load valid data (partial load). Any errors are noted in the import and export status. See [Viewing Data Import and Export Status](#).

- For a list of supported delimiter characters and exceptions, see [Other Supported Delimiter Characters](#).
  - If data is exported to a file in a business process-specific format, you can use Notepad to change the cube name in the file; for example, PCM\_REP, and then import the data file into the aggregate storage outline (provided all dimensions exist in the aggregate storage outline).
  - **Essbase:** Loads data in an Oracle Essbase data file format. If you select this option, you must choose a cube.
6. Enter or select the source file:
    - If you selected **Local** for the location, click **Browse** to navigate to the source file.
    - If you selected **Inbox** for the location, enter the name of the file in **Source File**.
  7. If you selected **Essbase** as the source type, specify the **Delimiter** for the Essbase data; options are **Space** or **Tab**.
  8. **Stop In Case of Error** is selected by default. If this option is selected and any import errors occur during an Essbase data load, the import stops and no data is loaded. If this option is cleared, data continues to load even if there are errors.
  9. **Optional:** If you selected **Inbox** for the import data file location, click **Save as Job** to save the import operation as a job, which you can schedule to run later.
    - Saving an import operation as a job is useful to batch a load sequence; for example, import metadata, then import data, then run rules when the data load is complete. See [Managing Jobs](#).
    - You can run up to five import jobs at one time.
    - To review the data that was rejected during the data import job, specify an **Error File** in the **Save as Job** dialog box. This file will provide information about the data records that were not imported. If an error zip file is specified, the zip file is stored in the Outbox where you can download the file using Inbox/Outbox Explorer. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).
  10. **Optional:** If you selected **Local** for the import data file location, click **Validate** to test whether the import file format is correct.
  11. Click **Import** to run the import operation.

### Considerations When Importing Data

- Since there is no option to clear data before import, the import will not overwrite existing data values with #MISSING values. Instead, complete one of the following tasks:
  - Run a Clear Cube job to clear specific business process data within input and reporting cubes. See [Clearing Cubes](#).
  - Write a business rule that uses the CLEARDATA Essbase command to clear specific data values. See [CLEARDATA](#) in *Technical Reference for Oracle Analytics Cloud - Essbase*.
  - Use the Clear Data Slices REST API to clear business process and Essbase data for a specified region. See [Clear Data Slices](#) in *REST API for Oracle Enterprise Performance Management Cloud*.
- If the evaluation order in the application is changed after exporting data, the import may have unexpected results.

- If a value in a data load input file doesn't match the evaluated driver member type; for example, if the evaluated type of a driver member is "date" and its corresponding input value isn't a valid date format, a driver member casting error occurs. See [Driver Member Casting Errors](#).

## Driver Member Casting Errors

A driver member casting error occurs when a value in a data load input file doesn't match the evaluated driver member type. A driver member casting error occurs in any application where an invalid data file is loaded. The "driver member" refers to the members in a column in the data file. Here are some examples of driver member casting errors:

- If a driver member is of type "Date" and its corresponding input value isn't a valid date format
- If a nonexistent Smart List value is specified for a driver member of type "Smart List"
- If a nonnumeric value is supplied for a member of type "Currency," "Data," or "Percent."

A casting error can occur for each driver member specified in the input file and for every occurrence in a data record, so the number of casting errors for a given input record ranges from 0 to the number of drivers. Because successful driver member bindings can occur along with driver member binding errors, the application will not reject the entire input record, but the error will be noted in the import and export status. See [Viewing Data Import and Export Status](#).

Consider the following data record input file where a bad date value is specified:

```
Entity, aDate, aSl, aText, aCurr, aPercent, Point-of-View,Data Load
Cube Name
e1, exampleBadDateValue, s11, text11, 888, 0.99,
"FY15,Current,""BUVersion_1"",Local,u1,Jan",Plan1
```

Error messages displayed:

- After loading the data, the status window will read:
 

```
Outline data store load process finished (Invalid data values were not
loaded). 7 data records were read, 7 data records were processed, 7
were accepted for loading (verify actual load with Essbase log files),
0 were rejected.
```
- The error is noted as an error in the import and export status with the following entry details:
 

```
Category: Data record
Record Index: 2
Message: Unable to load specified data value in Record 2: (aDate:
exampleBadDateValue)
```
- If multiple casting errors occur, each error is recorded in the same error message:
 

```
Unable to load specified data values in Record 2: (aSl: aaaaaaas11),
(aPercent: cc), (aDate: exampleBadDateValue), (aCurr: bb)
```

- If the error message count exceeds the maximum limit, it will issue the following message:

```
The warning [Unable to load specified data values] message count limit (100)
exceeded: no more warnings of this type will be issued.
```

## Exporting Data

To export data to a file:

1. From the Home page, select **Application**, and then select **Overview**.
2. On the **Application page**, select **Actions**, and then **Export Data**.
3. On the **Export Data** page, click **Create**.
4. For **Location**, select the target environment of the data export file:
  - **Local**: Saves the data export file to a location on your local computer.
  - **Outbox**: Saves the data export file to the server. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).
5. Select the cube.
6. Select the file type:
  - **Comma delimited**: Creates a comma-delimited .csv file for each artifact.
  - **Tab delimited**: Creates a tab-delimited .txt file for each artifact.
  - **Other**: Creates a .txt file for each artifact. Enter the delimiter character that you want to use in the export file. For a list of supported delimiter characters and exceptions, see [Other Supported Delimiter Characters](#) .
7. For **Smart Lists**, specify **Export Labels** or **Export Names**.
8. For **Dynamic Members** , select whether to **Include** or **Exclude** dynamic calculation members during export.

Excluding dynamic members from exported data improves performance during data exports.

9. For **Decimals**, specify the number of decimal positions (0-16) to format the data after export, or select **None** to use the default precision formatting.

For example, specifying a decimal value of **3** in the **Decimals** field results in the exported data displaying three digits to the right of the decimal point, wherever applicable.

Selecting **None** formats the decimal number as specified in the default precision settings, whereas selecting **0** formats the data to display a whole number. For example, if the data value you are exporting is 123.45678, selecting 0 exports the data as 123, and selecting **None** exports the data as 123.45678.

10. For **Slice Definition**, select the slice of data to export.

If you are exporting data for multiple members simultaneously, make sure that at least one of the members you select is a non-shared member. You can export shared members individually because it's equivalent to selecting a base member. However, selecting level 0 descendants of a parent member whose descendants are all shared members is equivalent to not selecting any members from a dimension and the export will not run. Therefore, you must ensure that one of the members selected is a non-shared member.

11. **Optional:** If you selected **Outbox** as the location of the export data file, click **Save as Job** to save the export operation as a job, which you can run immediately or schedule to run at a later time.
  - You can run up to five export jobs at one time.
  - When scheduling export jobs, you can specify a unique output file name for each job.
  - For more information about scheduling jobs, see [Managing Jobs](#).
12. Click **Export**, and then specify where to save the data export file.

**Note:**

To reduce the size of data export files, if a slice has an entire row of #MISSING values, the row will be omitted from the data export file.

## Viewing Data Import and Export Status

You can view the status of a data import or export on the **Jobs** console.

1. Go to the **Jobs** console.

If you just created an import or export job and are on the **Application** page, select the **Jobs** icon at the top of the screen. If you are on the Home page, select **Application**, and then **Jobs**.
2. From the **Jobs** console, select the import or export job you want to view.

The status page displays messages for **Errors**, **Warnings**, **Info**, and **All**. If there are errors and you specified an error file name while defining the job, you can download the generated error file using the **Error File** link.

## Importing Exchange Rates for a Multicurrency Application

**Note:**

To view the exchange rates options, the application must have been created with the **Multicurrency** option enabled. When you select the **Multicurrency** option during application creation, a Currency dimension is then created. By default, the multicurrency type is *simplified*. If you do not have a Currency dimension in your application, the **Import Exchange Rates** and **Export Exchange Rate Template** options will not be displayed on the **Actions** menu. See [Setting Up Currencies](#).

To simplify managing exchange rates for a multiple currency application, you can export the provided `ExchangeRateTemplate.csv` template, enter your exchange rates in a spreadsheet, and then import the rates into your application. You can import exchange rates right away or schedule an **Import Exchange Rates** job to run later.

To import exchange rates using a template:



1. From the Home page, select **Application**, and then select **Overview**.
2. From the **Actions** menu, select **Export Exchange Rate Template**, and then open `ExchangeRateTemplate.csv` or save it locally.
3. In the `ExchangeRateTemplate.csv` template file, enter average and ending currency exchange rates for each period and each currency, specify members for the POV, and then save the file.

 **Note:**

The number 1 represents the exchange rate for the default currency in the application. Enter rates relative to the default currency.

4. From the **Actions** menu, select **Import Exchange Rates**, click **Create**, browse for the file, and then click **Import**.



 **Note:**

You can schedule the import to run as a job that runs right away or at a later time. To schedule an **Import Exchange Rates** job, select the **Inbox** option, point to an import file that is located in the Inbox, and then click **Save as Job**. See [Scheduling Jobs](#).

## Uploading and Downloading Files Using the Inbox/Outbox Explorer

Use the Inbox/Outbox Explorer to upload files to the server or download them to your computer.

To upload or download files:

1. From the Home page, select **Application**, and then select **Overview**.
2. On the **Application** page, select **Actions**, and then **Inbox/Outbox Explorer**.
3. **Optional:** Sort or filter the files displayed in the **Inbox/Outbox Explorer**.
  - To sort the files, click a heading. You can sort the files by **Name**, **Last Modified**, or **Size**.
  - To filter the files displayed, click  (Filter icon), enter a name in the **Filter** dialog box, and click **Apply**.
4. To upload a file from the server, click **Upload**. In the **Upload File** dialog box, click **Browse**, select the file to upload, and then click **Upload File**.
5. To download a file from the server, select the desired file, then click  (Actions icon), and then click **Download File**.
6. Click **Close** to close the **Inbox/Outbox Explorer** and return to the **Application** page.

 **Note:**

There is an upload file size limit of 2GB. If your upload file exceeds the size limit, either select a smaller file or use EPM Automate to upload the larger file. For information about EPM Automate, see *Working with EPM Automate for Oracle Enterprise Performance Management Cloud*.

## Refreshing the Application Database

The application database, which stores data for each cube in the application, is created when the application is created. You must refresh the database after changing the application structure and modifying artifacts such as dimensions and members.

Changes made to the application are not reflected to users performing data entry and approvals tasks until the application is refreshed. For example, when you modify properties of a dimension member, add a member, or change access permissions, these changes are reflected to users after you refresh the application. Oracle recommends that you notify all users, asking them to save their work and close the application, before you refresh the database.

Before refreshing the database:

- Back up your application and export data from all databases
- Decide if you want to enable all users or just the current Service Administrator to use the application in administration mode during the refresh
- Decide if you want to log off all users
- Terminate any active application requests

To refresh the database:

1. From the Home page, select **Application**, and then select **Overview**.
2. On the **Application** page, select **Actions**, and then **Refresh Database**.
3. On the **Refresh Database** page, click **Create**.
4. For **Before Refresh Database**, select from these options:
  - **Enable use of the application for:** Lets **All users** or **Administrators** (or the current logged in Service Administrator) access the application in administration mode during the refresh
  - **Log off all users:** Logs off all application users before starting the refresh
  - **Stop all active requests:** Terminates any active requests in the application before starting the refresh
5. For **After Refresh Database**, select from these options:
  - **Enable use of the application for:** Lets **All users** or **Administrators** use the application after the refresh.
  - **Validate Metadata:** When this option is selected, the system scans for member identity (ID) mismatches between the business process and Oracle Essbase and then automatically resolves them after the refresh process. Selecting Validate Metadata might add additional time to the refresh process. For more information, see [Validating Metadata](#).

**Note:** The Validate Metadata option is not available for cubes running on the legacy version of Essbase.

6. Click **Refresh Database** to refresh the database now, or click **Save as Job** to run the refresh later as a job. See [Managing Jobs](#).



**Note:**

When you refresh the application database, all the cubes in the database are refreshed.

## Validating Metadata

### About Validate Metadata

Use the **Validate Metadata** setting (formerly called **Autocorrect Errors**) as part of the database refresh process to scan for and automatically resolve member identity (ID) mismatches between the business process and Oracle Essbase.



**Caution:**

Selecting **Validate Metadata** might add additional time to the refresh process.

In certain cases, the identity of a member changes in a way that causes it to be not fully recognized in the multi-dimensional database used by the application. When a member's identity is not fully correctly established within all parts of the system, it could sometimes cause hierarchy issues like incorrect member ordering, or it could miss children underneath that member, or miss some siblings, or miss certain properties, and so on. Selecting **Validate Metadata** detects such members and automatically resolves their identity, allowing these members as well as their hierarchies along with properties and siblings, to be fully and correctly recognizable and usable within all the parts of the system.

### Viewing the Report Detailing Member Movement and Deletion

After making member ID corrections, members might be deleted or moved. A report file detailing any member movement (to a different parent) or deletion is generated and placed in the Outbox in a csv (comma-delimited) file format. Review the report to reaggregate some of the stored parent members where the child hierarchy may have changed.

For example:

Action	Member	Parent	Dimension	Cube	New Parent
Delete	Member1	Parent1	Scenario	Plan1	
Move	Member2	Parent2	Account	Plan2	Parent3

The system generates a CSV file to the Outbox folder, and the filename is automatically generated with the application name followed by `_autocorrect.csv`; for example, `vision_autocorrect.csv`. This file is overwritten on each run.

After running the **Refresh Database** job with the **Validate Metadata** setting, you can download the export file from the Outbox.

To download files:

1. Click **Application**, and then click **Jobs**.
2. Under **Recent Activity**, click the job.
3. At the top of **Job Details**, click the export file option to select a download location.

## Removing an Application

Proceed with caution when removing an application. Because removing an application will delete all of its contents and any scheduled jobs, make a backup of your application.

To remove an application:

1. From the Home page, select **Application**, and then select **Overview**.
2. On the **Application** page, select **Actions**, and then **Remove Application**.

# 4

## Managing Application and System Settings

### Related Topics

- [About Managing Application and System Settings](#)
- [Application Settings](#)
- [System Settings](#)
- [Calculation Options Settings](#)

### About Managing Application and System Settings

Service Administrators can specify defaults for the current application.

To view and manage application and system settings:

1. From the Home page, select **Application**, and then **Settings**.
2. On the **Application Settings** page, define the desired application settings.

The following two settings are specific to Enterprise Profitability and Cost Management:

- **Calculation Threads:** The number of rules that can be executed in parallel if a rule set is enabled for parallel calculation. See **Parallel Calculation** in the **Rule Set Calculation** options in [Creating a Rule Set](#).
- **Allocation Precision:** The decimal precision for calculated allocation results. Precision is calculated by rounding, not truncation. The default is 2 decimal places. Values can range from 7 to -6.

In addition to the Enterprise Profitability and Cost Management-specific settings, you can define settings in the following areas:

- [Application Settings](#)
- [System Settings](#)

### Application Settings

You can define application settings in the following areas:

- [Alias Settings](#)
- [Number Formatting](#)
- [Notifications](#)
- [Page Settings](#)
- [Other Options](#)
- [Profitability and Cost Management](#)

## Alias Settings

Table 4-1 Alias Settings

Setting	Description
Alias Table	Default alias table for the application
Display Member Label As	Default display options for the Member Selection dialog box. See <a href="#">Using the Member Selector</a> .

## Number Formatting

Table 4-2 Number Formatting Settings

Setting	Description
Thousands Separator	<ul style="list-style-type: none"> <li>• <b>None:</b> 1000</li> <li>• <b>Comma:</b> 1,000</li> <li>• <b>Dot:</b> 1.000</li> <li>• <b>Space:</b> 1 000</li> <li>• <b>Underscore:</b> 1_000</li> </ul>
Decimal Separator	<ul style="list-style-type: none"> <li>• <b>Dot:</b> 1000.00</li> <li>• <b>Space:</b> 1000 00</li> <li>• <b>Underscore:</b> 1000_00</li> </ul>
Negative Sign	<ul style="list-style-type: none"> <li>• <b>Prefixed minus:</b> -1000</li> <li>• <b>Suffixed minus:</b> 1000-</li> <li>• <b>Parentheses:</b> (1000)</li> </ul>
Negative Color	<ul style="list-style-type: none"> <li>• <b>Red</b></li> <li>• <b>Black</b></li> </ul>

## Notifications

Table 4-3 Notification Settings

Setting	Description
Task Lists	Not applicable for Enterprise Profitability and Cost Management
Approvals	Not applicable for Enterprise Profitability and Cost Management
Job Console	Select to enable notifications for jobs on the <b>Jobs</b> console. See <a href="#">Managing Jobs</a> .

## Page Settings

Table 4-4 Page Settings

Setting	Description
Indentation of Members	Set the default for indenting members on a page.

Table 4-4 (Cont.) Page Settings

Setting	Description
<b>Number of Items on the Page Drop-down</b>	Set the default for the number of items on the Page drop-down. If you shorten the number of items in the member list, the Search box can be more easily seen. If the list is shortened to 10 members, for example, then you won't need to scroll to see the Search box.

## Other Options

Table 4-5 Other Options



Setting	Description
<b>Date Format</b>	Not applicable for Enterprise Profitability and Cost Management.
<b>Attribute Dimension Date Format</b>	Select a date format for attribute dimensions in your application.
<b>Partial Grid Fetch Size (Rows,Columns)</b>	Enter the number of rows and columns in the format <code>nn, nn</code>
<b>Suppress Application Management Options in Smart View</b>	Select whether to suppress application management options in Oracle Smart View for Office.
<b>Enable Data Load for Adhoc Read Only Role</b>	
<b>Set Number of Seconds Before Rules Run in Background</b>	Enter a value between 0 and 600 seconds (10 minutes).  <div style="border-left: 2px solid #0070C0; padding-left: 10px; margin: 10px 0;"> <p> <b>Note:</b> Rules that are set to automatically run when a form is loaded or saved never run in the background.</p> </div> <div style="border-left: 2px solid #0070C0; padding-left: 10px; margin: 10px 0;"> <p> <b>Note:</b> The value entered here applies to business rules created in Calculation Manager. See <a href="#">Creating and Managing Business Rules</a>.</p> </div>
<b>Client Log Level</b>	Select None, Information, Warning, Error, or General
<b>Web Ad Hoc Grid</b>	Select whether to suppress missing values only or whether to suppress missing and zero values in Web Ad Hoc grids.
<b>Enable User Formulas in Ad Hoc</b>	If you select <b>Yes</b> , in an ad hoc grid, when you hover over a cell with a member formula attached, you see the member formula associated with the cell and you can perform the calculation on the fly.

Table 4-5 (Cont.) Other Options

Setting	Description
<b>Filter Out Excluded Members in Segment Dropdown</b>	Default is <b>Yes</b> . Choose <b>No</b> to display the excluded members in the row drop-down POV in forms.

## Profitability and Cost Management

Table 4-6 Profitability and Cost Management Settings

Setting	Description
<b>Calculation Threads</b>	The number of rules that can be executed in parallel if a rule set is enabled for parallel calculation. See <b>Parallel Calculation</b> in the <b>Rule Set Calculation</b> options in <a href="#">Creating a Rule Set</a> .
<b>Allocation Precision</b>	The decimal precision for calculated allocation results. Precision is calculated by rounding, not truncation. The default is 2 decimal places. Values can range from 7 to -6.

## System Settings

Table 4-7 System Settings

System Setting	Description
<b>Display Users' Full Names</b>	When selected, the system displays the user's full name (for example, Max Hennings). When cleared, the system displays the user's ID (for example, VHennings).
<b>Include Shared Members in Cube Refresh</b>	When selected, shared members will inherit the security access assigned to the base member. When cleared, shared members will inherit the highest security access based on a combination of the access assigned to the base member and parent of shared member.




Table 4-7 (Cont.) System Settings

System Setting	Description
<b>Default Ancestor Access</b>	<p>Select an option to specify the default user access to ancestor members in ad hoc grids and the Member Selector:</p> <ul style="list-style-type: none"> <li>• <b>None:</b> By default, users are not able to see the ancestor members of members that they have access to unless they are explicitly granted access to them.</li> <li>• <b>Read:</b> By default, users are granted Read Only access to the ancestor members of members that they have access to unless they are explicitly granted <b>Write</b> or <b>Display</b> access, which would override this default.</li> <li>• <b>Write:</b> By default, users are granted Write access to the ancestor members of members that they have access to unless they are explicitly granted <b>Read</b> or <b>Display</b> access, which would override this default.</li> <li>• <b>Display:</b> By default, users are granted Display Only access to the ancestor members of members that they have access to unless they are explicitly granted <b>Read</b> or <b>Write</b> access, which would override this default.</li> </ul> <p><b>Note:</b> Members with Display Only access are displayed, but instead of data values in the cells associated with those members, users will see #NoAccess.</p>
<b>Email Character Set</b>	Select <b>UTF-8</b> or <b>Regional Setting</b> .
<b>Business Rules Notification</b>	<p>If set to <b>Yes</b>, sends an emailed notification to a user or group when business rules created and enabled for notification in Calculation Manager are completed or encounter errors. In <b>Notify These Users</b>, select the user or group to notify.</p> <p><b>Note:</b> You specify whether to enable a business rule for notification when you create the rule in Calculation Manager using the <b>Enable Notifications</b> option in the rule's properties. See <i>Creating a Business Rule in Designing with Calculation Manager for Oracle Enterprise Performance Management Cloud</i>.</p> <p><b>Note:</b> See <a href="#">Creating and Managing Business Rules</a> for more information on business rules.</p>

Table 4-7 (Cont.) System Settings

System Setting	Description
<b>Notify These Users</b>	<p>If the <b>Business Rules Notification</b> setting is set to <b>Yes</b>, select the user or group to notify when business rules are complete or encounter errors.</p> <p><b>Note:</b> You can select only one user or group to notify.</p>
<b>Allow Drill Down on Shared Members in Ad Hoc</b>	<ul style="list-style-type: none"> <li>• <b>Yes</b> enables drilling on shared members in an ad hoc grid. When set to <b>Yes</b>, the <b>Drill to All Levels in Base</b> check box is displayed.</li> <li>• <b>No</b> disables drilling on shared members in an ad hoc grid.</li> </ul>
<b>Enable Use of the Application for</b>	<p>Determines whether users can access the application in administration mode, such as during backups.</p> <ul style="list-style-type: none"> <li>• <b>Administrators</b>—When you select Administrators, if any non-administrative users are logged on to the application, they are forced off the system and will not be able to log on.</li> <li>• <b>All Users</b>— To restore access to an application for all users, select All users.</li> </ul>
<b>Assign Application Owner</b>	<p>Assigns ownership of the application to another Service Administrator.</p>
<b>Enable the Display of Substitution Variables</b>	<p>Set how substitution variables display in the Member Selection dialog box when users respond to runtime prompts in business rules.</p> <ul style="list-style-type: none"> <li>• <b>Display All</b>—Displays all substitution variables.</li> <li>• <b>Display None</b>—Displays no substitution variables.</li> <li>• <b>Enable Filtering</b>—Displays only substitution variables that are valid for the runtime prompt.</li> </ul>
<b>Suppression Mode</b>	<p>Choose a suppression behavior for ad hoc grids in the web and in Smart View for cases where rows and columns contain missing data or zeroes.</p> <ul style="list-style-type: none"> <li>• <b>Suppress Missing values only</b> (default)—Suppresses rows, or columns, or both that contain No Data/Missing.</li> <li>• <b>Suppress Missing also Suppresses Zeros</b>—Suppresses rows, or columns, or both that contain both No Data/Missing and Zero.</li> </ul>

Table 4-7 (Cont.) System Settings

System Setting	Description
<b>Smart View Ad Hoc Behavior</b>	All new and recreated applications in Enterprise Profitability and Cost Management are automatically set to Standard. You cannot change this setting. For a complete description of the ad hoc features available in Standard mode, see <a href="#">Smart View Behavior Options in EPM Cloud</a> in <i>Working with Oracle Smart View for Office (Mac and Browser)</i> .
<b>Use All Alias Tables on Refresh</b>	If set to <b>Yes</b> , the system evaluates the alias name against all alias tables. If set to <b>No</b> (default setting), the system evaluates the alias name against the currently selected alias table. In either case, if the system cannot identify the input as a valid member name or alias, the input is displayed as a comment.
<b>Link Accounts by Default</b>	Not applicable in Enterprise Profitability and Cost Management.
<b>Attribute Dimension Re-order Threshold</b>	Enter a threshold value between 0 and 500 (500 is the default value). For attribute dimensions, when the number of members under a given parent exceeds the specified threshold value, then the members will be reordered at the end of a metadata load instead of during the load. Depending on the specific shape of the attribute dimension, adjusting this number can sometimes have an impact on performance. In general, this setting can be ignored unless attribute dimension load times degrade beyond acceptable levels.
<b>Set Reporting Options</b>	If you're using the next-generation Reports reporting solution, Oracle recommends you use this setting to upload any TrueType fonts that your company uses to produce reports. See <a href="#">Managing Fonts</a> . To upload TrueType fonts, click <b>Report Settings</b> , click <b>Manage Fonts</b> , click  , and then select the font files to upload.

## Calculation Options Settings

Enterprise Profitability and Cost Management calculation processes are designed to yield consistent and reliable calculation results. Enterprise Profitability and Cost Management offers Logical Clear and Allocation Rule Non Tuple calculation settings that may help enhance performance in some cases.

### Related Links

## Defining Logical Clear Versus Physical Clear

### Enabling Allocation Rule Non Empty Tuple

## Defining Logical Clear Versus Physical Clear

Enterprise Profitability and Cost Management calculation processes by default use the Logical clear calculation setting to calculate results. Logical clear can improve overall calculation times when the data growth in the database impacts database clear processes and may help enhance performance. In some cases, if you notice any calculation issue while using Logical clear, you may wish to change the calculation setting to Physical clear.

Use the `EPCM_CALC_CLEAR_TYPE` substitution variable to specify whether to use Logical or Physical clear. Since Logical clear is the default, if you want to use Logical clear, you do not need to enable the `EPCM_CALC_CLEAR_TYPE` substitution variable.

If you want to switch to Physical clear, follow these steps:

1. From the Home page, select **Tools**, and then **Variables**.
2. On the **Variables** page, select **Substitution Variables**.
3. Click **+**.  
A new variable is added to the bottom of the list.
4. Scroll to the bottom of the list, and select the cube where you want to add the variable.
5. For **Name**, enter `EPCM_CALC_CLEAR_TYPE`.
6. For **Value**, enter "Physical".
7. Click **Save**.

## Enabling Allocation Rule Non Empty Tuple

The Allocation Rule Non Empty Tuple (NET) setting can improve the calculation times for Simple Reclassification (SR) rules. This setting may be the solution if you experience long run times for SR rules with very large and very sparse source or destination ranges. In some cases the allocation logic of the affected rules is conducive to improvements while in others it is not. Regression testing is critical before promoting this calculation enhancement to a production environment.

Use the `EPCM_CALC_NET_ENABLE` substitution variable to enable Allocation Rule Non Empty Tuple (NET). The valid values for this substitution variable are Yes or No. When this variable is not present, the default is No.

To enable Allocation Rule Non Empty Tuple (NET):

1. From the Home page, select **Tools**, and then **Variables**.
2. On the **Variables** page, select **Substitution Variables**.
3. Click **+**.  
A new variable is added to the bottom of the list.
4. Scroll to the bottom of the list, and select the cube where you want to add the variable.

5. For **Name**, enter `EPCM_CALC_NET_ENABLE`.
6. For **Value**, enter "Yes".
7. Click **Save**.



**Note:**

For information on skipping empty tuples in custom calculation rules, see [Skipping Empty Tuples to Optimize Custom Calculations](#).

# 5

## Defining Valid Intersections

### Related Topics

- [Understanding Valid Intersections](#)
- [Creating Valid Intersections](#)
- [Managing Valid Intersections](#)
- [Suppressing Invalid Data in Forms](#)
- [Clearing Invalid Data](#)
- [Working with Valid Intersections](#)

## Understanding Valid Intersections

Valid intersections are cell interactions that are filtered based on rules you define, called valid intersection rules, which filter certain cell intersections to users when they enter data or select runtime prompts. For example, you can specify that certain programs are valid only for some periods or departments. After valid intersections are defined, cells containing invalid data are read-only. This restriction speeds the planning process and optimizes the information available to users.

Conversely, you might have a use case where data entry is allowed in most cell combinations and you only need to prevent data entry to a select few cell combinations. In this case, you can ease the definition process by defining invalid intersections. You define invalid intersections in the same way that you define valid intersections except you can specify the invalid intersection definition type while creating the intersection group.

To better understand how valid intersections affect behavior in forms and in runtime prompts, see [Working with Valid Intersections](#).

## Valid Intersection Groups

Valid intersection groups define:

- Dimensions to be included
- One of those dimensions as the anchor dimension
- Whether nonanchor dimensions are required or not
- Whether the anchor dimension members not specified or referenced will be valid or invalid

## Valid Intersection Rules

Valid intersection rules:

- Must use the same dimensions that were defined within their valid intersection group

- Valid intersection rules within the same valid intersection group that produce an apparent conflict or overlap, are marked valid if either valid intersection rule condition is met
- Valid intersection rules in different valid intersection groups that produce an apparent redundancy or overlap, are marked valid if they satisfy the requirements of all valid intersection groups

Thus, if any valid intersection group marks an intersection invalid, regardless of other valid intersection groups making it valid, the system will mark the intersection invalid. Invalid groups override valid group results.

 **Note:**

If you want to remove valid intersections regardless of what other valid intersection groups allow, then this rule must be in a different valid intersection group.

See [Valid Intersection Examples](#).

## Anchor and Nonanchor Dimensions

Anchor and nonanchor dimensions:

- Anchor dimensions are always required dimensions in the cube that is used in the valid intersection evaluation.
- Nonanchor dimensions are either required or not:
  - If a nonanchor dimension is required, any cube that doesn't use that dimension will ignore any valid intersection group where that dimension is tagged as required as it evaluates the valid intersections.
  - If a nonanchor dimension isn't required, any cube that doesn't use that dimension will still evaluate any valid intersection group that includes that dimension as not required and evaluate the intersections of any other dimensions in the valid intersection group in use in the cube.
- Unselected anchor dimension members are valid by default, but you can mark them invalid by clearing the **Unselected Members are Valid** option. This option marks all intersections with anchor dimension members not selected in this rule as invalid.

See [Valid Intersection Examples](#).

## Valid Intersection Examples

This section provides valid intersection group and valid intersection rule examples to illustrate a few simple, complex, and edge-case scenarios.

### Example: Anchor and Nonanchor Dimensions

The choice of the anchor dimension is critical. Consider the following example, which produces a different result based on the anchor dimension definition:

- Valid intersection group 1 defines Entity as the anchor dimension and Product as a nonanchor dimension.

- Valid intersection group 2 reverses this definition with Product as the anchor dimension and Entity as the nonanchor dimension.

**Table 5-1 Example - Anchor Dimension is Entity**

Valid Intersection Group	Anchor Dimension - Entity	Nonanchor Dimension - Product
1	DESC(500 - Manufacturing) - Unselected members are valid	DESC(P_TP1 - Computer Equipment)

Group 1 means entities that are descendants of Manufacturing are valid only with descendant products of Computer Equipment. No other products are valid with descendants of Manufacturing. All other entities besides descendants of Manufacturing are valid with all products, including descendants of Computer Equipment.

**Table 5-2 Example - Anchor Dimension is Product**

Valid Intersection Group	Anchor Dimension - Product	Nonanchor Dimension - Entity
2	DESC(P_TP1 - Computer Equipment) - Unselected members are valid	DESC(500 - Manufacturing)

Group 2 means products that are descendants of Computer Equipment are only valid with descendant entities of Manufacturing. No other entities are valid with descendants of Computer Equipment. All other products besides descendants of Computer Equipment are valid with all entities, including descendants of Manufacturing.

**▲ Caution:**

The choice of anchor dimension is significant. You'll get dramatically different results if you choose the wrong anchor dimension.

**Example: Required Dimension**

In the following example, if a nonanchor dimension isn't required, then the application evaluates all remaining dimension intersections in the valid intersection group for a cube that doesn't contain the nonrequired dimension. This behavior could result in the evaluation of a valid intersection group with only one effective dimension.

**Table 5-3 Example - Required vs. Non-Required Nonanchor Dimensions**

Valid Intersection Group	Anchor Dimension - Entity	Nonanchor Dimension - Product
1	DESC(500 - Manufacturing) - Unselected members are valid	DESC(P_TP1 - Computer Equipment) - Not required

In Group 1, the product dimension isn't required, and unselected entities are valid. Therefore, if the cube of the form or business rule, at runtime, doesn't include the product dimension, the



application evaluates the entity dimension selections to mark all entities as valid for a cube that doesn't contain the product dimension.

**Table 5-4 Example - Required vs. Non-Required Nonanchor Dimensions**

Valid Intersection Group	Anchor Dimension - Entity	Nonanchor Dimension - Product
2	DESC(500 - Manufacturing) - Unselected members are invalid	DESC(P_TP1 - Computer Equipment) - Not required

In Group 2, the product dimension isn't required, and unselected entities are invalid. Therefore, if a cube doesn't include the product dimension, then the application evaluates the entity dimension selections to mark all entities except descendants of Manufacturing as invalid. Thereafter, any cube that doesn't use the product dimension will only allow data entry in the descendants of Manufacturing entities.

**▲ Caution:**

Carefully consider whether a nonanchor dimension is required or not, especially if the result leaves a valid intersection group with only one effective dimension. Additionally, selecting the **Unselected Members are Valid** option for anchor dimension members also plays a significant role in the system behavior for valid intersections. See [Valid Intersection Examples](#).

**Example: Unselected Members are Valid**

In the following example, two intersection groups are valid. In one group, the anchor dimension unselected members are invalid (this option is cleared). In the other group, the anchor dimension unselected members are valid (this option is selected).

**Table 5-5 Example - Unselected Members are Valid**

Valid Intersection Group	Anchor Dimension - Account	Nonanchor Dimension - Entity
1	IDESC(BS - Balance Sheet) - Unselected members are invalid	000 - No Department
2	IDESC(GP - Gross Profit) - Unselected members are valid	IDESC(403 - Sales)

Because Group 1 defines all unselected members as invalid, the application marks noninclusive descendants of Balance Sheet invalid. Gross Profit isn't an inclusive descendant of Balance Sheet. So even though Group 2 explicitly states inclusive descendants of Gross Profit are valid with inclusive descendants Sales entities, the invalid definition from Group 1 overrides any further valid intersections of the same anchor dimension member set.

**Example: Redundant or Overlapping Valid Intersection Rules Within the Same Valid Intersection Group**

When valid intersection rules are within the same valid intersection group and produce any redundancy or overlap, the system marks an intersection valid if either of the valid intersection rule conditions are met.

**Table 5-6 Example - Redundant or Overlapping Valid Intersection Rules Within the Same Valid Intersection Group**

Valid Intersection Rule	Anchor Dimension - Account	Nonanchor Dimension - Entity
1	IDESC(GP - Gross Profit) - Unselected members are valid	IDESC(403 - Sales)
2	IDESC(NI - Net Income) - Unselected members are valid	IDESC(TD - Total Department)

Because Gross Profit is a descendant of Net Income and Sales is a descendant of Total Department, inclusive descendants of Gross Profit are valid with any inclusive Descendant of Total Department. Rule 1 is a subset of Rule 2, so Rule 1 is effectively a "No operation" rule and is unnecessary. There is no restriction on inclusive descendants of Gross Profit accounts only being valid for inclusive descendants of Sales Entities.

**Example: Redundant or Overlapping Valid Intersection Rules in Different Valid Intersection Groups**

When valid intersection rules are in different valid intersection groups and produce any redundancy or overlap, the system marks an intersection valid only if it satisfies the requirements of all valid intersection groups.

In the following example, there are redundant or overlapping rules in different groups:

**Table 5-7 Example - Redundant or Overlapping Valid Intersection Rules in Different Valid Intersection Groups**

Valid Intersection Group	Anchor Dimension - Account	Nonanchor Dimension - Entity
1	IDESC(GP - Gross Profit) - Unselected members are valid	IDESC(403 - Sales) - Required
2	IDESC(NI - Net Income) - Unselected members are valid	IDESC(TD - Total Department) - Not required

Because Group 1 is further restrictive for inclusive descendants of Gross Profit accounts being valid with inclusive descendants of Sales entities, the application enforces this group for these intersections. Other, non-Gross Profit accounts can still use all inclusive descendants of Total Department entities, but inclusive descendants of Gross Profit accounts must use inclusive descendants of Sales entities.

## Redundancy or Overlap in Valid Intersection Rules

Valid intersection rules within the same valid intersection group, which produce any apparent conflict or overlap, are marked valid if either valid intersection rule condition is met.

If different valid intersection groups share the same attributes, including the anchor dimension, required and not required nonanchor dimensions, and **Unselected Members are Valid** attribute, they will be treated as rules of the same valid intersection group.

## Shared Members and Valid Intersection Rules

Shared members are supported in valid intersection rules. If a base member is selected for a valid intersection rule, any shared members are also included in the rule. Conversely, if a shared member is selected for a valid intersection rule, the base member is also included in the rule.

## Substitution Variables and Valid Intersection Rules

You can use substitution variables in valid intersection rules. User variables are not supported. Substitution variables can be set on the Essbase server, application, or database level. The same substitution variable can exist on multiple levels; the application uses the first one it finds as it searches in this order:

1. Database (cube)
2. Application
3. Server

## Evaluation Order

Evaluation order for valid intersection groups orders invalid results sets as quickly as possible, increasing the speed and efficiency of the overall valid intersection evaluation.

For example, the application evaluates the first valid intersection group in the list, then the second group, and so on. If the application finds an invalid intersection in the second group in the list, it will stop evaluating the rest of the list because, once an intersection is defined as invalid, it will override other valid intersection rule results.

To change the order in which the groups are evaluated, see [Changing the Valid Intersection Group Evaluation Order](#).




## Creating Valid Intersections

You can define rules to filter certain cell intersections to users when they enter data, select members, or select runtime prompts.

To create a valid intersection:

1. Click **Application**, and then click **Valid Intersections**.
2. If it isn't already selected, click the **Setup** tab.
3. Create the valid intersection group:
  - a. Click **Create**.
  - b. Enter a name and description for the new intersection.
  - c. The **Enabled** checkbox is selected by default. To disable the valid intersection group, clear the **Enabled** checkbox. You can also enable or disable a valid

intersection group directly on the **Valid Intersections** page. See [Disabling and Enabling Valid Intersection Groups](#).

- d. For **Definition Type**, select one of the following:
    - **Valid Intersection**
    - **Valid Intersection**
  - e. To select the anchor dimension for the intersection group, click  next to **Select Anchor Dimension**.
  - f. **Optional:** By default, the anchor dimension members that are not specified in the valid intersection rule are marked valid. To clear this option, click  next to the anchor dimension, and then click **Unselected members are valid**. For an explanation of this option and for an example of how it's used, see [Anchor and Nonanchor Dimensions](#).
  - g. To select additional dimensions (called nonanchor dimensions), click **Add Dimension**.
  - h. **Optional:** By default, nonanchor dimensions are not required. To make a nonanchor dimension required, click  next to the nonanchor dimension, and click **Required**.
4. Define the valid intersection rule:
    - a. Click **Add Rule**.
    - b. To select the range of members to include, exclude, or remove in the valid intersection, click the drop-down icon next to the dimensions in the new rule:
      - Click **Edit** to open the **Select Members** page and select the members, substitution variables, and attributes to include in the valid intersection rule. See [Using the Member Selector](#)
      - Click **Add Exclusion** to define an exclusion in the rule. You can exclude a subset of what is included for that dimension.
      - Click **Clear** to clear the selection.To delete a rule, click the **Delete** icon.
  5. Click **Save and Close**.
  6. The new valid intersection group is added to the end of the valid intersections list. To reorder the rules in the list, see [Changing the Valid Intersection Group Evaluation Order](#).

## Managing Valid Intersections

### Related Topics

- [Viewing Valid Intersections](#)
- [Filtering Valid Intersections](#)
- [Importing and Exporting Intersections](#)
- [Changing the Valid Intersection Group Evaluation Order](#)
- [Disabling and Enabling Valid Intersection Groups](#)
- [Editing Details for a Valid Intersection Group](#)
- [Duplicating Valid Intersection Groups](#)

- [Deleting a Valid Intersection Group](#)




## Viewing Valid Intersections

To view valid intersections:

1. Click **Application**, and then click **Valid Intersections**.
2. If it isn't already selected, click the **Setup** tab.

 **Note:**

If Redwood Experience is enabled, the **Setup** tab is at the bottom of the page.

3. To search the entire listing for certain intersections, enter search criteria in the **Search** box and then click  to display only the intersections that meet the search criteria.
4. To filter the listing so it displays only the intersections that meet the filter criteria, specify the following filter options:
  - : Click to display the **Filter** page where you can select from a robust list of filter options. For a complete list of filter options and their descriptions, see [Filtering Valid Intersections](#).
  - : Click to clear all filters.
  - **Enabled**: Filters the list so you view only the intersections that are enabled (**Yes**), not enabled (**No**), or select **All**.
  - **Definition Type**: Filters the list so you view only the intersections that are the **Valid Intersection** or **Invalid Intersection** types, or select **All**.
5. You can also perform these tasks on the **Valid Intersections** page:
  - **Actions** menu: To import and export valid intersections, see [Importing and Exporting Intersections](#).
  - **Create**: See [Creating Valid Intersections](#).
  - **Refresh**: Click to refresh the intersections listing.
6. For each listing on the intersections page you can perform the following tasks:
  - **Enabled** column: Indicates whether an intersection is enabled. Click the check mark next to the intersection to disable or enable it. A green check mark indicates that the definition is enabled. See [Disabling and Enabling Valid Intersection Groups](#).
  - **Action** column: Click **•••** to edit, duplicate, or delete an intersection, or to move it up or down in the listing order. See the following topics:
    - [Changing the Valid Intersection Group Evaluation Order](#)
    - [Editing Details for a Valid Intersection Group](#)
    - [Duplicating Valid Intersection Groups](#)



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– Deleting a Valid Intersection Group

## Filtering Valid Intersections

You can filter the list of intersections by certain criteria such as whether the intersection is enabled or not, whether the definition is valid or invalid, when it was modified, and by whom. When you filter, only the intersections that meet the filter criteria are displayed on the **Valid Intersections** page.

To filter intersections:

1. Click **Application**, and then click **Valid Intersections**.
2. Click  to specify filter criteria:
  - **Enabled**: View only the intersections that are enabled (**Yes**), not enabled (**No**), or select **All**.
  - **Definition Type**: View only the intersections that are the **Valid Intersection** or **Invalid Intersection** types, or select **All**.
  - **Modified**: View only the intersections that were modified before or after a certain date and time, or the intersections modified within a range of dates or times. Select **After**, **Before**, or **Between** and then click  to specify the date and time criteria.
  - **Modified By**: View only the intersections modified by selected users.
3. Click **More** to further refine the filter criteria:
  - **Dimensions**
  - **Anchor Dimensions**
  - **Unselected members are valid**: Choose **Yes**, **No**, or **All**.
  - **Additional Dimensions Required**: Choose **Yes**, **No**, or **All**.
4. Click **Apply**.

## Importing and Exporting Intersections

### About Importing and Exporting Valid Intersections

You can export the filtered list of valid intersections from the listing page to a location on your local computer, or you can export them to the server. If no filter is defined on the listing page, then all intersections are exported.

Use the Import action to import intersections into the application from a location on your local computer or import them from the server. When you perform an import, the system tests the import file for anything that might break a definition; for example, if a cube is missing, or if an anchor dimension doesn't exist, or if a subrule is not found, errors are logged in the error file. Import jobs will only complete successfully if the import file has no errors.

 **Note:**

Subrules provide information about the content of the rules such as the member selection or exclusion for anchor and non anchor dimensions, and the restriction type applied for each subrule.

Depending on the export or import location you choose, the intersections are exported or imported in either an Excel file format (XLSX) or a zip file format.

 **Note:**

Locked valid intersection rules are not exported when you export valid intersections. Locked valid intersection rules (and rules that start with restricted prefixes such as FCCS\_, OCX\_, OEP\_, OFS\_, OPF\_, OWP\_, TRCS\_) are not imported when you import valid intersections.

### Valid Intersections Import File

The Excel import file must have two sheets with the following names for the first and second sheets:

1. Rules
2. Sub Rules

The `Rules` sheet has the following column headings:

- **Name**
- **Position**
- **Description**
- **Enabled**
- **Definition Type**
- **Anchor Dim Name**
- **Anchor Dimension Apply to Selected Members**
- **Dim1**
- **Dim1 Required**
- **Dim2**
- **Dim2 Required**
- **DimX**
- **DimX Required**

The `Sub Rules` sheet has the following column headings:

- **Name** - This column must contain the name of the Rule from the first sheet
- **Anchor Members**
- **Anchor Exclusion**


- **Anchor Exclusion All**
- **Dim1 Members**
- **Dim1 Exclusion**
- **Dim1 Exclusion All**
- **Dim2 Members**
- **Dim2 Exclusion**
- **Dim2 Exclusion All**
- **DimX Members**
- **DimX Exclusion**
- **DimX Exclusion All**

### Exporting and Importing Valid Intersections

To export and import intersections:

1. Click **Application**, and then click **Valid Intersections**.
2. Apply filters to the listing, as needed. See [Filtering Valid Intersections](#).
3. To export, click **Actions**, then **Export**, and then select the target location for the export file:
  - **Local**: Saves the export file to a location on your local computer. If you choose this option, click **Export**, and then specify where to save the export file.
  - **Outbox**: Runs a job that saves the export file in a zip format to the server which you can download now or use to schedule an export job later. If you choose this option, click **Save and Run Job**.

To download the export file from the Outbox:

    - a. Click **Application**, and then click **Jobs**.
    - b. Under **Recent Activity** click the export job.
    - c. On the **Job Details** page, click  to select a download location for the export file. You can also download the export file from the Inbox/Outbox Explorer for your business process.
4. If editing the export file in Excel, note that the Excel file has two sheets: **Rules** and **Sub Rules**.
5. To import, click **Actions**, then **Import**, and then select the location of the import source file:
  - **Local**: Loads the import file from a location on your computer. For **Source File**, click **Browse** to select the import file on your computer, and then click **Import**.
  - **Inbox**: Runs a job that loads the import file from the server. The import file must be in a zip file format. Enter the name of the file in **Source File**, click **Save and Run Job**, and then specify the **Name** and **Error File** on the **Save as Job** dialog. The error file provides information about the intersections that were not imported. You can download the error file from the Inbox/Outbox Explorer for your business process.



## Changing the Valid Intersection Group Evaluation Order

Evaluation order for intersection groups orders invalid results sets as quickly as possible, increasing the speed and efficiency of the overall intersection evaluation.

To learn more about evaluation order, see [Evaluation Order](#).

To change the position of a valid intersection group in a list:

1. Click **Application**, and then click **Valid Intersections**.
2. If it isn't already selected, click the **Setup** tab.

 **Note:**

If Redwood Experience is enabled, the **Setup** tab is at the bottom of the page.

3. To the right of the intersection group in the listing, click **...**.
4. Select **Move Up** or **Move Down**.

 **Tip:**

You can also drag intersection groups to move them up and down in the list.

## Disabling and Enabling Valid Intersection Groups

Intersection groups, by default, are enabled at the time of creation. If you don't want an intersection group to be evaluated or used, you can disable it on the **Valid Intersections** page. When an intersection group is disabled, the intersection rule for that group no longer applies when viewing application forms, business rules, or runtime prompts. You can also reenable a disabled intersection group.

To disable and enable an intersection group:

1. Click **Application**, and then click **Valid Intersections**.
2. If it isn't already selected, click the **Setup** tab.

 **Note:**

If Redwood Experience is enabled, the **Setup** tab is at the bottom of the page.

3. In the Enabled column of the intersection list, click the check mark next to the intersection group that you're disabling or enabling.

 **Note:**

The check mark is green if the group is enabled.

4. Ensure that any remaining groups that are enabled are still listed in the correct evaluation order in the intersections list. If they are not, then move them up or down in the order.

See [Changing the Valid Intersection Group Evaluation Order](#).

## Editing Details for a Valid Intersection Group


To edit intersection group details, you work with dimension members in the member selector. You can also define exclusions in intersection rules.




To edit intersection group details:

1. Click **Application**, and then click **Valid Intersections**.
2. If it isn't already selected, click the **Setup** tab.
3. Click the name of the intersection group you want to edit.

 **Note:**

A pagination bar displays at the bottom of the rules page. If you have a large number of rules, you can use the pagination bar to easily navigate between the rules pages and to jump to a specific page. The page size options (number of rules per page), which you can select on the pagination bar, are **25**, **50**, **100**, and **All**. (Note that the **All** option isn't available if you have more than 300 rules.)


- To edit dimension details, next to the dimension, click  to select the members to include, exclude, or remove in the intersection rule:
  - Click **Edit** to open the **Select Members** page and select members, substitution variables, and attributes to include in the intersection rule. You can also type in the members or functions.  
See [Using the Member Selector](#).
  - Click **Exclude** or **Exclude All** to define the dimension members you want to exclude from the rule:
    - \* **Exclude**: Selecting this option excludes members by ID. Only the specified members (base or shared) will be excluded.
    - \* **Exclude All**: Selecting this option excludes members by name. If a base member is specified, then the base and all of its shared members will be excluded. If a shared member is specified, then this member, its base member, and all other shared members of this member will be excluded.
  - Click **Clear** to clear the selection.

- To delete a dimension from an intersection group, next to the dimension, click , and then click .
  - To remove a rule from an intersection group, click .
  - To add a dimension or a rule to an intersection group, click **Add Rule** or **Add Dimension**.
4. Click **Save and Close**.

## Duplicating Valid Intersection Groups

To speed intersection group creation, you can duplicate an existing intersection group and then edit it.

To duplicate an intersection group:

1. Click **Application**, and then click **Valid Intersections**.
2. If it isn't already selected, click the **Setup** tab.
3. Click  to the right of the intersection group you want to duplicate, and then select **Duplicate**.

The duplicate group is added to the end of the intersections list with the word "Copy" appended to the name.

4. Open the intersection group and edit it.
5. Reorder the intersection groups, if needed. See [Changing the Valid Intersection Group Evaluation Order](#).

## Deleting a Valid Intersection Group


After a group is deleted, the intersection groups are reordered. If there are three intersection groups, and the second one in the order is deleted, the third intersection group becomes number two.

To delete an intersection group:

1. Click **Application**, and then click **Valid Intersections**.
2. If it isn't already selected, click the **Setup** tab.

### Note:

If Redwood Experience is enabled, the **Setup** tab is at the bottom of the page.



3. Click  to the right of the intersection group that you want to remove, and then select **Delete**.
4. Reorder the remaining intersections, if needed. See [Changing the Valid Intersection Group Evaluation Order](#).

To delete an intersection rule from an intersection group, see [Editing Details for a Valid Intersection Group](#).

## Suppressing Invalid Data in Forms

Suppressing invalid data hides rows or columns in application forms that contain invalid data. If this option isn't selected, then the application displays rows or columns that contain cells with data that are invalid. Cells with invalid data are read-only.

To suppress invalid data in forms:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Forms**.
2. Select the form, click , and then click **Layout**.
3. Under **Grid Properties**, select **Suppress invalid data - Rows** and/or **Suppress invalid data - Columns**.
4. Click **Save**.

## Clearing Invalid Data

### Related Topics

- [About Invalid Data](#)
- [Working With Invalid Intersection Reports](#)
- [Clearing Data at Invalid Intersections](#)

## About Invalid Data

If data already exists at intersections, then adding or modifying valid intersections invalidates the existing data. Creating a valid intersection rule or modifying an existing valid intersection rule doesn't clear data in the invalid intersections. You must generate a valid intersection rule report, which will show where data exists at invalid intersections, and then determine whether to clear the data.



### Note:


Data may remain at an invalid intersection for historical purposes or for use in forward looking scenarios. Therefore, it's not a requirement to clear data at invalid intersections.

## Working With Invalid Intersection Reports

You can view reports that show data at invalid intersections on the **Reports** tab of the **Valid Intersections** page. **Invalid Intersection Reports** lists existing reports, their status, and the last time they were run.

To work with invalid intersection reports:

1. Click **Application**, then **Valid Intersections**, and then click the **Reports** tab.

 **Note:**





If Redwood Experience is enabled, the **Reports** tab is at the bottom of the page.

2. Perform a task:

- To refresh the listing, click **Refresh**.
- To create a report, click **Create**, name the report, select the cube, choose the scope of the report, and then select when to run the report. You can run the report now or run the report later by saving it as a job. To save a report without running it, click **Save and Close**. To remove a report after it's run, click **Remove Reports**.

 **Note:**

Invalid intersection reports are not supported for aggregate storage cubes. Aggregate storage cubes are not listed in the **Cube** drop-down list.

- To edit a report, click  , and then **Edit**.
- To copy a report, click  , and then **Duplicate**.
- To run a report, click  , and then **Run**.
- To delete a report, click  , and then **Delete**.

## Clearing Data at Invalid Intersections

Users with appropriate permissions can clear the invalid data if the data isn't needed. To clear invalid data, run the report, and then click **Clear Invalid Intersections**.

## Working with Valid Intersections

### Related Topics

- [Working with Valid Intersections in Application Forms](#)
- [Working with Valid Intersections in Calculation Manager Rule Runtime Prompts](#)

## Working with Valid Intersections in Application Forms

Using valid intersections prevents data entry for invalid intersections as defined in the applicable valid intersection prevents group. The affected cells in the form display as read-only following standard, read-only color coding. If you hover the cursor over an invalid intersection, a tool tip displays indicating the cell is read-only because it's defined as an invalid intersection.

The valid intersection group applies first to the form point of view and page axis. If the point of view intersections are all invalid, then a warning message is displayed, and the form doesn't render a data grid until a valid intersection is selected.

If the point of view has valid intersections, then the rows and columns are filtered to restrict data entry at invalid intersections. If the **Suppress Invalid Data** option for the form is enabled, then the form suppresses invalid rows, columns, or both, as appropriate.

Any rows or columns, which consist of a mix of valid and invalid intersections, display those intersections as valid or invalid, as appropriate. Invalid intersections are displayed with standard, read-only shading and preclude data entry.

Application users can reset the point of view to the default, unfiltered list without closing and reopening the form by clearing the selections. Application users can also clear a selection, thus opening up more selections for other dimensions. They will not be able to render a form with a dimension cleared, because valid members must be selected for each dimension.

In the member selector, invalid members are suppressed due to valid intersection rules. Application users can display invalid members in the member selector using the **Show Invalid Members** option. Invalid members are displayed but are unavailable for selection.



#### Note:

Valid intersection groups don't grant access to dimension members. Valid intersection groups further restrict the valid intersections of dimension members already granted to an application user.

**Table 5-8 Form Behavior if Valid Intersections are Applied**

Action	Behavior
Open a form	The form renders with member selections as defined in the form definition, adhering to the user's access rights for dimensions, and applies valid intersection groups with the most recently used as current selections.
Select members from a point of view dimension	<p>The application:</p> <ul style="list-style-type: none"> <li>• Enables users to select a member on the point of view</li> <li>• In the member selector for a point of view dimension, enables users to select from a filtered list of remaining valid intersections, which is based on the members that were selected for the other point of view dimensions</li> <li>• Ignores the order in which point of view dimension members are selected because selecting a member from any dimension included in a valid intersection group dynamically filters the remaining dimension members lists for those dimensions included in the valid intersection group, as appropriate, when that dimension is selected</li> <li>• Provides the option to hide invalid members from dimension lists or display them as unselectable in the point of view</li> <li>• Provides the ability to reset the point of view to the fully unfiltered list without closing and reopening the form by clearing the selections</li> </ul> <p>Note that ad hoc forms, both in Web and Oracle Smart View for Office, will not filter page or point of view members according to valid intersection groups.</p>

**Table 5-8 (Cont.) Form Behavior if Valid Intersections are Applied**

Action	Behavior
Select <b>Go</b> to render a form based on point of view selections. You can also click the right arrow in the form point of view.	The form renders as defined based on the valid point of view intersections.
Enter and save data	The form data is entered and saved.

## Working with Valid Intersections in Calculation Manager Rule Runtime Prompts

Valid intersection groups apply to runtime prompts when launched from within the context of the application. Runtime prompts will prevent users from selecting invalid intersections as defined in the valid intersection groups.

Filtering according to valid intersection groups isn't supported in Oracle Smart View for Office forms. The rule, however, will not launch if you choose an invalid intersection in the runtime prompts both in the Web and in Smart View.

**Table 5-9 Runtime Prompt Behavior if Valid Intersections are Applied**

Action	Behavior
Launch a Calculation Manager rule runtime prompt	The application: <ul style="list-style-type: none"> <li>Prevents the user from selecting invalid intersections within the runtime prompt based on the valid intersection group</li> <li>Prevents the Calculation Manager rule from executing if there are invalid intersections in the runtime prompts</li> </ul>
Enter valid intersections	The valid intersection is allowed to be entered.

# 6

## Administering Data Integration

### Related Topics

- [Creating File-Based Integrations](#)
- [Defining Data Maps](#)

### Creating File-Based Integrations

Data Integration is the mechanism by which integration processes are performed in Oracle Enterprise Performance Management Cloud. You can define file-based and direct integration sources, create mapping rules to translate source data into the required target format, and execute and manage the periodic data loading process.

To create a file-based integration:

1. From the Home page, select **Application**, and then **Data Exchange**.
2. Click the **Data Integration** tab at the bottom of the page.
3. Review [Creating File-Based Integrations](#) in *Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

### Defining Data Maps

Define data maps to move data, comments, attachments, and supporting detail from source cubes and Smart Lists to target reporting cubes to consolidate data.

To create a data map:

1. From the Home page, select **Application**, and then **Data Exchange**.
2. Click the **Data Maps** tab at the bottom of the page.
3. Review [Defining Data Maps](#) in *Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

#### Note:

Cross pod data maps using Enterprise Profitability and Cost Management as a source are only supported if the target system is an Enterprise Profitability and Cost Management system.



# 7

## Managing Jobs

### Related Topics

- [About Jobs](#)
- [Job Types](#)
- [Accessing the Jobs Console](#)
- [Viewing Pending Jobs and Recent Activity](#)
- [Scheduling Jobs](#)  
Schedule jobs to perform common administrative tasks and lighten your workload. You can run jobs right away or schedule jobs to run later at intervals.
- [Editing and Deleting Jobs](#)
- [Exporting Job Console Files](#)
- [Exporting Supplemental Diagnostics](#)

## About Jobs

Jobs are actions such as:

- Importing and exporting metadata and data
- Refreshing the database
- Clearing cubes

The Jobs console enables you to see a record of both submitted and pending jobs. You can also use the Jobs console to run certain types of jobs, or to schedule them to run at intervals.

## Job Types

You need to select a job type when you filter jobs to view and schedule jobs to run now or later. The following table describes job types.

**Table 7-1 Job Types**

Job Type	Description
<b>Administration Mode</b>	Changes the login level for a business process. If you select <b>Administrators</b> , all non-administrative users will be logged off from the application after job execution. To restore access to an application for all users, select <b>All users</b> . See the <b>Enable Use of the Application for</b> setting in <a href="#">System Settings</a> .

Table 7-1 (Cont.) Job Types

Job Type	Description
<b>Batch Calculation</b>	<p>Job that is created as a result of running a calculation on the Calculation Control page. If you selected more than one POV to calculate, the Batch Calculation job summarizes information about all the POVs selected to calculate. Separate calculation jobs are also created for each individual POV.</p> <p>See <a href="#">Calculating Models</a>.</p>
<b>Clear Cell Details</b>	<p>Performs a cell clearing operation.</p> <p>See <a href="#">Clearing Cell Details</a>.</p>
<b>Clear Cube</b>	<p>Performs a cube clearing operation.</p> <p>See <a href="#">Clearing Cubes</a> for information about clearing cubes and creating Clear Cube jobs.</p> <p><b>Note:</b> The system prevents this job from starting if it's scheduled to start while the daily maintenance process is running. Oracle recommends that you reschedule this job to start outside of the daily maintenance window. See Managing Daily Maintenance in <i>Getting Started with Oracle Enterprise Performance Management Cloud for Administrators</i>.</p>
<b>Clear Point of View</b>	<p>Job that is created as a result of clearing a point of view either through the Enterprise Profitability and Cost Management application or with the "Clear Data by Point of View" REST API.</p> <p>See <a href="#">Clearing a Point of View</a> in this guide and Clear Data by Point of View in <i>REST API for Oracle Enterprise Performance Management Cloud</i>.</p>
<b>Compact Outline</b>	<p>Compacts the outline file of a cube. Compaction helps keep the outline file at an optimal size. Compacting the outline doesn't clear the data. Running this job won't push any changes from the business process to Oracle Essbase.</p> <p>See <a href="#">Compacting the Outline</a>.</p> <p><b>Note:</b> The system prevents this job from starting if it's scheduled to start while the daily maintenance process is running. Oracle recommends that you reschedule this job to start outside of the daily maintenance window. See Managing Daily Maintenance in <i>Getting Started with Oracle Enterprise Performance Management Cloud for Administrators</i>.</p>
<b>Content Update</b>	<p>The application is automatically refreshed during an application update. Information about the refresh is captured in the Content Update job, which propagates the changes introduced during the daily maintenance of the environment.</p> <p>See <a href="#">Setting Content Update Start Time</a>.</p>
<b>Copy Data</b>	<p>Copies data from one dimensional intersection to another, including relational data and supporting detail.</p> <p>See <a href="#">Copying Data</a>.</p>

Table 7-1 (Cont.) Job Types

Job Type	Description
<b>Copy Point of View</b>	<p>Job that is created as a result of copying a point of view either through the Enterprise Profitability and Cost Management application or with the "Copy Data by Point of View" REST API.</p> <p>See <a href="#">Copying a Point of View</a> in this guide and Copy Data by Point of View in <i>REST API for Oracle Enterprise Performance Management Cloud</i>.</p>
<b>Copy Version</b>	<p>Copies data from one bottom-up or target version of a selected scenario to another bottom-up or target version within the same scenario.</p> <p>See <a href="#">Copying Versions</a>.</p>
<b>Data Map</b>	<p>Job that is created as a result of creating data mappings between a source application and a target reporting application.</p> <p>See <a href="#">Defining Data Maps</a> in <i>Administering Data Integration for Oracle Enterprise Performance Management Cloud</i>.</p>
<b>Delete Point of View</b>	<p>Job that is created as a result of deleting a point of view either through the Enterprise Profitability and Cost Management application or with the "Delete Point of View" REST API.</p> <p>See <a href="#">Deleting a Point of View</a> in this guide and Delete Point of View in <i>REST API for Oracle Enterprise Performance Management Cloud</i>.</p>
<b>Execute Bursting Definition</b>	<p>Runs a report bursting job.</p> <p>If you're using the next-generation Reports reporting solution, the bursting feature enables you to run a single report or book for more than one member of a single dimension for one data source, and publish a PDF output for each member.</p> <p>See <a href="#">Working with Bursting</a> in <i>Designing with Reports for Oracle Enterprise Performance Management Cloud</i>.</p>
<b>Export Audit</b>	<p>Exports audit records to a Comma Separated Values (CSV) file.</p> <p>See <a href="#">Export Audit</a>.</p>
<b>Export Cell-Level Security Definitions</b>	<p>Exports a cell-level security definition that was saved as a job.</p> <p>See <a href="#">Importing and Exporting Cell-Level Security Definitions</a>.</p>
<b>Export Data</b>	<p>Performs a data export that was saved as a job.</p> <p>See <a href="#">Exporting Data</a></p> <p><b>Note:</b> The system prevents this job from starting if it's scheduled to start while the daily maintenance process is running. Oracle recommends that you reschedule this job to start outside of the daily maintenance window. See <a href="#">Managing Daily Maintenance</a> in <i>Getting Started with Oracle Enterprise Performance Management Cloud for Administrators</i>.</p>

Table 7-1 (Cont.) Job Types

Job Type	Description
<b>Export Diagnostics</b>	Exports supplemental diagnostic information to a zip file titled <code>Pcm_Supplemental_Diagnostics.zip</code> . See <a href="#">Exporting Supplemental Diagnostics</a> .
<b>Export Job Console</b>	Exports records about the jobs in the Jobs console to a zip file titled <code>allJobDetails&lt;date&gt;.zip</code> . See <a href="#">Exporting Job Console Files</a> .
<b>Export Metadata</b>	Exports metadata into a file using the settings specified in an <code>export metadata</code> job. See <a href="#">Exporting Metadata</a> . <b>Note:</b> The system prevents this job from starting if it's scheduled to start while the daily maintenance process is running. Oracle recommends that you reschedule this job to start outside of the daily maintenance window. See <i>Managing Daily Maintenance in Getting Started with Oracle Enterprise Performance Management Cloud for Administrators</i> .
<b>Export Security</b>	Exports the security records or access control list (ACL) records for specified users or groups to a Comma Separated Values (CSV) file. See <a href="#">Export Security</a> .
<b>Import Audit</b>	An EPM Automate command that imports data audit records from a ZIP file that you created by exporting audit data from an environment. See <a href="#">importAppAudit</a> .
<b>Import Cell-Level Security Definitions</b>	Imports a cell-level security definition that was saved as a job. See <a href="#">Importing and Exporting Cell-Level Security Definitions</a> .
<b>Import Data</b>	Imports data from a file in the repository into the application using the import data settings specified in the <code>Import Data</code> job type. See <a href="#">Import Data</a> . <b>Note:</b> The system prevents this job from starting if it's scheduled to start while the daily maintenance process is running. Oracle recommends that you reschedule this job to start outside of the daily maintenance window. See <i>Managing Daily Maintenance in Getting Started with Oracle Enterprise Performance Management Cloud for Administrators</i> .
<b>Import Job Console</b>	An EPM Automate command that clones job console records using a ZIP file containing job console records exported from an environment. See <a href="#">importJobConsole</a> .

Table 7-1 (Cont.) Job Types

Job Type	Description
<b>Import Metadata</b>	<p>Imports metadata from a file in the repository into the application using the import metadata settings specified in an <code>import metadata</code> job.</p> <p>See <a href="#">Importing Metadata</a>.</p> <p><b>Note:</b> The system prevents this job from starting if it's scheduled to start while the daily maintenance process is running. Oracle recommends that you reschedule this job to start outside of the daily maintenance window. See Managing Daily Maintenance in <i>Getting Started with Oracle Enterprise Performance Management Cloud for Administrators</i>.</p>
<b>Import Security</b>	<p>Imports the security records or access control list (ACL) records from a Comma Separated Values (CSV) file.</p> <p>See <a href="#">Import Security</a>.</p>
<b>Invalid Intersection Report</b>	<p>Runs a report that shows where data exists at invalid intersections.</p> <p>See <a href="#">Working with Invalid Intersection Reports</a>.</p>
<b>Merge Data Slices</b>	<p>Merges incremental data slices of an aggregate storage cube. Fewer slices improve a cube's performance. You can merge all incremental data slices into the main database slice or merge all incremental data slices into a single data slice without changing the main database slice. You can optionally remove cells that have a value of zero.</p> <p>See <a href="#">Merging Data Slices</a>.</p> <p><b>Note:</b> The system prevents this job from starting if it's scheduled to start while the daily maintenance process is running. Oracle recommends that you reschedule this job to start outside of the daily maintenance window. See Managing Daily Maintenance in <i>Getting Started with Oracle Enterprise Performance Management Cloud for Administrators</i>.</p>
<b>Optimize Aggregation</b>	<p>Generates optimized views based on collected query tracking information in an Enterprise Profitability and Cost Management reporting cube (PCM_REP).</p> <p>See <a href="#">Optimizing Aggregation for the PCM_REP Reporting Cube</a>.</p> <p><b>Note:</b> The system prevents this job from starting if it's scheduled to start while the daily maintenance process is running. Oracle recommends that you reschedule this job to start outside of the daily maintenance window. See Managing Daily Maintenance in <i>Getting Started with Oracle Enterprise Performance Management Cloud for Administrators</i>.</p>

Table 7-1 (Cont.) Job Types

Job Type	Description
<b>Refresh Database</b>	<p>Refreshes the application database. See <a href="#">Refreshing the Application Database</a>.</p> <p><b>Note:</b> The system prevents this job from starting if it's scheduled to start while the daily maintenance process is running. Oracle recommends that you reschedule this job to start outside of the daily maintenance window. See Managing Daily Maintenance in <i>Getting Started with Oracle Enterprise Performance Management Cloud for Administrators</i>.</p>
<b>Restructure Cube</b>	<p>Performs a full restructure of a block storage cube to eliminate or reduce fragmentation. This will also remove empty blocks. Running this job won't push any changes from the business process to Essbase. See <a href="#">Improving Cube Performance</a>.</p> <p><b>Note:</b> The system prevents this job from starting if it's scheduled to start while the daily maintenance process is running. Oracle recommends that you reschedule this job to start outside of the daily maintenance window. See Managing Daily Maintenance in <i>Getting Started with Oracle Enterprise Performance Management Cloud for Administrators</i>.</p>
<b>Rules Add Member</b>	<p>Adds a member to one or more rules. See <a href="#">Adding Members to Rules</a>.</p>
<b>Rules Copy to Model</b>	<p>Copies one or more rules to a model. See <a href="#">Copying Rules to a Model</a>.</p>
<b>Rules Copy to RuleSet</b>	<p>Copies one or more rules to a rule set. See <a href="#">Copying Rules to a Rule Set</a>.</p>
<b>Rules Disable</b>	<p>Disables a rule or rules. <a href="#">Enabling and Disabling Rules</a>.</p>
<b>Rules Enable</b>	<p>Enables a rule or rules. See <a href="#">Enabling and Disabling Rules</a>.</p>
<b>Rules Replace Member</b>	<p>Finds a member in a rule and replaces it with another member. See <a href="#">Replacing Members in Rules</a>.</p>
<b>Run Calculation</b>	<p>Job that is created as a result of running a calculation for a POV on the Calculation Control page. See <a href="#">Calculating Models</a>.</p>
<b>Smart Push</b>	<p>Uses Smart Push to move data from one cube to another. See <a href="#">Moving Data from One Cube to Another Using Smart Push</a></p>

Table 7-1 (Cont.) Job Types

Job Type	Description
<b>Validate Model</b>	<p>Validates models to make sure there are no potential calculation failures.</p> <p>The Validate Model job is created when you use the Validate Model EPM Automate command or the Validate Model Rest API. If you run Model Validation from the Enterprise Profitability and Cost Management user interface, a job is not created.</p> <p>See Validate Model in <i>REST API for Oracle Enterprise Performance Management Cloud</i>.</p>

## Accessing the Jobs Console

You can access the **Jobs** console from these places in Enterprise Profitability and Cost Management:

- From the Home page, select **Application**, and then **Jobs**.
- From the Home page, select **Modeling**, and then **Jobs**.
- From any of the pages in the **Application** or **Modeling** cluster, select the **Jobs** card above the page.

## Viewing Pending Jobs and Recent Activity

By default, when you first access the **Jobs** console, the **Recent** jobs list displays the last three days' jobs. You can expand this by adding a date filter.

- To switch the view from **Recent** to **Pending**, click the drop-down arrow next to **Recent**, and select **Pending**.
- To search or filter the job list, perform an action:
  - To search for job by name, enter text in the **Search** field, and then press **Enter** or click **Search** (🔍).
  - To filter jobs, click a tab under the **Search** field to add that filter to the Search. Then, click the filter in the **Search** field to select the parameters for the filter. You can add more than one filter to the **Search** field. To remove a filter from the **Search** field, click **X** on the filter tab.

### Note:



The default parameter is automatically selected. De-select that parameter to filter by a different parameter value.

The following filters are available:

- \* **Job Type:** Type of job that was run (for example, Clear Cubes). For more information, see [Job Types](#). By default, **Import Security** is displayed.

 **Note:**



You can select multiple job types. The number of selections appears in the **Search** field. For example, if you select two job types, it will show as Job Type (2) in the **Search** field.

- \* **Status:** Status of the job (for example, Pending). By default, **Completed** is displayed.
- \* **Start Time:** Date and time range that a job was started. Click **Calendar** () to edit the date and time range.
- \* **End Time:** Date and time range that a job was completed. Click **Calendar** () to edit the date and time range.

 **Note:**

After selecting one or more of the above filter criteria, you can also enter a search text or wildcard character in the **Search** field and press **Enter**.

The search results are listed in the **Jobs** console.

- To sort data in each column in ascending or descending order, click **Sort** () in the column header.
- To view a job's details, click **Actions** () , and then select **Details**.

 **Note:**

- The application is automatically refreshed during an application upgrade. Any errors that occur during the upgrade are captured in the **Content Update** job.
- If a scheduled job execution is terminated because of automated daily maintenance, an EPM Automate resetService command, or due to an unforeseen outage, the job will be restarted when the environment comes back online.
- Jobs older than 90 days are purged.

## Scheduling Jobs

Schedule jobs to perform common administrative tasks and lighten your workload. You can run jobs right away or schedule jobs to run later at intervals.

### Related Topics

- [Scheduling Jobs to Run Now](#)
- [Scheduling Jobs to Run Later](#)



- [Scheduling Hourly Jobs](#)

## Scheduling Jobs to Run Now

To schedule jobs to run now:

1. From the **Jobs** console, click the **Actions** drop-down, and select **Schedule**.
2. On the **General** tab of the **Schedule Job** page, specify the following, and then click **Next**.
  - **What type of job is this?:** Select one of the job types listed. For more information on job types, see [Job Types](#).
  - **When do you want to run this job?:** Select **Run Now**.
3. On the **Job Details** tab, select a job from the job list, and then click **Next**.

 **Note:**

- If you're running import or export jobs, you can run up to five jobs at one time.
- For export jobs, you can specify a unique output file name for each job. From the jobs list, click **Edit** next to the selected job and specify the output file name with a zip extension. The unique file name you specify will override the default export file name when the job runs.
- To prevent automatic backup from failing due to certain jobs running during daily maintenance, Oracle Enterprise Performance Management Cloud disallows certain jobs from starting while the daily maintenance process is running. If the system prevents a job from starting, the reason will be stated in the Job Details. If you've enabled email notifications for the Job Console, you'll receive an email notification when a job does not start. If you have a job that is scheduled to start during the daily maintenance process, it is recommended that you reschedule your job to start outside of the daily maintenance window.

4. Review your choices. If satisfactory, click **Finish**.

## Scheduling Jobs to Run Later

To schedule jobs to run later:

1. From the **Jobs** console, click the **Actions** drop-down, and select **Schedule**.
2. On the **General** tab of the **Schedule Job** page, specify the following:
  - **What type of job is this?:** Select one of the job types listed. For more information on job types, see [Job Types](#).
  - **When do you want to run this job?:** Select the date and time when you want the job to run.  
**Schedule starting from:** Select the starting date and time, including the time zone.
  - **How often do you want to run this job?:** Specify the following, and then click **Next**.

Option	Description
<b>Name</b>	<p>Enter a name for this instance of the scheduled job. This doesn't have to be the job name that was originally assigned when the job was created. For example, you can enter a name that reflects your scheduling requirement. Suppose you are scheduling an instance of a job that was originally named <b>Refresh Database</b> when it was created. You can name this instance of the scheduled job <b>MyWeeklyCubeRefresh</b>.</p> <p>After you schedule this job, the name you specify is listed in the Jobs console with a system-generated name; such as <b>MyWeeklyCubeRefresh : Refresh Database</b>, where <b>MyWeeklyCubeRefresh</b> is the name that you entered for the scheduled job and <b>Refresh Database</b> is the name that you originally defined during the job creation.</p>
<b>Recurrence Pattern</b>	<p>Specify the frequency with which to run the job:</p> <ul style="list-style-type: none"> <li>– <b>Hourly:</b> See <a href="#">Scheduling Hourly Jobs</a>.</li> <li>– <b>By Minute:</b> Set the <b>Frequency</b> for 15 or 30 minutes. The job will start running in 15 or 30 minutes and continue to run at the selected frequency until the ending date and time; for example, if you set the job to run every 15 minutes and the starting time is 3:15, the job will start to run at 3:30, then 3:45, and so on. Jobs cannot be scheduled to run in increments smaller than 15 minutes.</li> <li>– <b>Run Once:</b> The job will run once at the starting date and time.</li> <li>– <b>Daily:</b> The job will run at the starting date and time and continue to run each day until the end date.</li> <li>– <b>Weekly:</b> The job will run at the starting date and time and continue to run each week until the end date.</li> <li>– <b>Monthly:</b> The job will run at the starting date and time and continue to run each month thereafter until the end date.</li> <li>– <b>Yearly:</b> The job will run at the starting date and time and continue to run each year thereafter until the end date.</li> </ul>
<b>End Date</b>	If the job is recurring, select an ending date and time.

3. On the **Job Details** tab, select a job from the job list, and then click **Next**.

 **Note:**

- If you're running import or export jobs, you can run up to five jobs at one time.
- For export jobs, you can specify a unique output file name for each job. From the jobs list, click **Edit** next to the selected job and specify the output file name with a zip extension. The unique file name you specify will override the default export file name when the job runs.

4. Review your choices. If satisfactory, click **Finish**.

## Scheduling Hourly Jobs

Hourly jobs run according to a timetable which is based on the values you set in the **Schedule starting from** and **Hour** fields. The schedule for **Hourly** jobs restarts each day during the midnight hour and the recurring job starts at the first hour, second hour, third hour (and so on up to 12 hours) after the midnight hour, depending on the value you select in the **Hour** field.

For example, if you specify a value of **5** in the **Hour** field, the hours during which the job will run each day are 12 AM, 5 AM, 10 AM, 3 PM, and 8 PM. The start time indicates the hour and minute when the system should start honoring the schedule, and the end time indicates when the system should stop. So if the start time is 12:48 PM on 11/18, then that means 12:48 AM, 5:48 AM, and 10:48 AM have already occurred on the current day (11/18) and the next available timeslot is 3:48 PM, which is when the scheduled job will run for the first time. After that it will run at 8:48 PM on 11/18. However on 11/19 it starts over again and will run at 12:48 AM, 5:48 AM, 10:48 AM, and so on until the system reaches the specified end time (in this case, 12:48 PM on 11/19).



### Note:

When a job spans two days, the job runs during the midnight hour the next day and re-sets the recurrence pattern.

**Table 7-2 Timetable for Hourly Jobs**

Hourly Recurrence	Timetable
1 (default)	AM: 12:00, 1:00, 2:00, 3:00, 4:00, 5:00, 6:00, 7:00, 8:00, 9:00, 10:00, 11:00 PM: 12:00, 1:00, 2:00, 3:00, 4:00, 5:00, 6:00, 7:00, 8:00, 9:00, 10:00, 11:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 1 hour, the job will run for the first time at 12:48 PM, and then again at 1:48 PM, 2:48 PM, 3:48 PM, and so on.
2	AM: 12:00, 2:00, 4:00, 6:00, 8:00, 10:00 PM: 12:00, 2:00, 4:00, 6:00, 8:00, 10:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 2 hours, the job will run for the first time at 12:48 PM, and then again at 2:48 PM, 4:48 PM, 6:48 PM, and so on.
3	AM: 12:00, 3:00, 6:00, 9:00 PM: 12:00, 3:00, 6:00, 9:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 3 hours, the job will run for the first time at 12:48 PM, and then again at 3:48 PM, 6:48 PM, 9:48 PM, 12:48 AM, 3:48 AM, and so on.

**Table 7-2 (Cont.) Timetable for Hourly Jobs**

Hourly Recurrence	Timetable
4	AM: 12:00, 4:00, 8:00 PM: 12:00, 4:00, 8:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 4 hours, the job will run for the first time at 12:48 PM, and then again at 4:48 PM, 8:48 PM, 12:48 AM, 4:48 AM, and so on.
5	AM: 12:00, 5:00, 10:00 PM: 3:00, 8:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 5 hours, the job will run for the first time at 3:48 PM, and then again at 8:48 PM, 12:48 AM, 5:48 AM, 10:48 AM, and so on.
6	AM: 12:00, 6:00 PM: 12:00, 6:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 6 hours, the job will run for the first time at 12:48 PM, and then again at 6:48 PM, 12:48 AM, 6:48 AM, and so on.
7	AM: 12:00, 7:00 PM: 2:00, 9:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 7 hours, the job will run for the first time at 2:48 PM, and then again at 9:48 PM, 12:48 AM, 7:48 AM, and so on.
8	AM: 12:00, 8:00 PM: 4:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 8 hours, the job will run for the first time at 4:48 PM, and then again at 12:48 AM, 8:48 AM, and so on.
9	AM: 12:00, 9:00 PM: 6:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 9 hours, the job will run for the first time at 6:48 PM, and then again at 12:48 AM, 9:48 AM, 6:48 PM, and so on.
10	AM: 12:00, 10:00 PM: 8:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 10 hours, the job will run for the first time at 8:48 PM, and then again at 12:48 AM, 10:48 AM, 8:48 PM, and so on.
11	AM: 12:00, 11:00 PM: 10:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 11 hours, the job will run for the first time at 10:48 PM, and then again at 12:48 AM, 11:48 AM, 10:48 PM, and so on.

Table 7-2 (Cont.) Timetable for Hourly Jobs

Hourly Recurrence	Timetable
12	AM: 12:00 PM: 12:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 12 hours, the job will run for the first time at 12:48 PM, and then again at 12:48 AM, and so on.

## Editing and Deleting Jobs

You can edit the schedule for pending jobs, and delete pending and complete jobs. You can't modify or delete jobs that are processing.

To edit a job:

1. From the **Jobs** console, select the job you want to edit.
2. Click the drop-down arrow next to **Recent**, and select **Pending**.
3. Click **Actions** (⋮), and then select **Edit**.
4. In **Edit a Scheduled Job** screen, modify the schedule, and then click **Next**.

 **Note:**

When changing the frequency of a job, the job will not run at the new frequency until the next time it runs at the previous frequency; for example, if the job is set up to recur daily and you change the frequency to hourly, the job won't start running at the new hourly frequency until after the scheduled daily job runs the next day. If you want the job to begin running at the new frequency sooner, Oracle recommends that you delete the scheduled job and create a new one.

5. Review your choices. If satisfactory, click **Finish**.

To delete a job:

1. From the **Jobs** console, select the job you want to delete.
2. Click the drop-down arrow next to **Recent**, and select **Pending**.
3. Click **Actions** (⋮), and then select **Delete**.

 **Note:**


To delete multiple jobs, select the jobs, click the **Actions** drop down, and then select **Delete**.

4. Review your choices. If satisfactory, click **Finish**.

## Exporting Job Console Files

You can export information about the jobs in the **Jobs** console to a CSV file, and then download the CSV file to your local machine.

To export and download an Export Job Console file:

1. From the **Jobs** console, click the **Actions** drop-down, and select **Export**.  
An **Export Job Console** job is created.
2. When the job status says "Complete", click the hyperlink for the **Export Job Console** job, or click **...**, and select **Details**.
3. On the **Job Details** page, click  next to **Export Job Console**.  
The export file is downloaded to your local machine in a file called `allJobDetails<date>.csv`.
4. Click the `allJobDetails<date>.csv` file to open it in Excel.



### Note:

You can also download the `allJobDetails<date>.csv` from the **Inbox/Outbox Explorer**. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).

## Exporting Supplemental Diagnostics

You can export supplemental diagnostic information in the form of CSV files, text files, and reports and zip them into a single file, which you can then download to your local machine.

The general types of information collected are metadata, aggregate data, and statistical data related to the structure of the application and its execution characteristics. Information is collected for diagnosis and support. No sensitive information or actual data is collected. When working with Oracle Support to diagnose a problem, you may be requested to provide this file.

To run an Export Diagnostics job:

1. From the **Jobs** console, click the **Actions** drop-down, and select **Schedule**.
2. On the **General** tab of the **Schedule Job** page, specify the following information:
  - **What type of job is this?:** Select **Export Diagnostics**.
  - **When do you want to run this job?:** Select **Run Now**.  
If you want to schedule the job to run later, see [Scheduling Jobs to Run Later](#).
3. **Export Diagnostic Job** is displayed on the **Job Details** tab. Click **Next**.
4. On the **Review** tab, click **Finish**.

An **Export Diagnostics** job is created and displayed in the **Jobs** console with an initial status of **Processing**. After the status changes to **Completed**, you can download the file.

To download the Export Diagnostics file:

1. Click the **Overview** card above the **Jobs** console.
2. From the **Overview** tab on the **Application** page, click the **Actions** drop-down, and select **Inbox/Outbox Explorer**.
3. In the **Inbox/Outbox Explorer**, select `Pcm_Supplemental_Diagnostics.zip`, then click **...**, and then select **Download File**.
4. In your downloads, click `Pcm_Supplemental_Diagnostics.zip`.
5. In Explorer, a `PCM_Supplemental_Diagnostics` folder is created. Expand this folder, and then click the `Model_Statistics.csv` file to open it in Excel.





# Part III

## Building and Calculating Models

### Related Topics

- [Creating and Managing Models](#)
- [Creating and Managing Rules](#)
- [Running Model Validation](#)
- [Calculating Models](#)
- [Analyzing Calculations](#)
- [Viewing Rule Balancing Reports](#)

### Videos

Your Goal	Watch This Video
Understand the key concepts of modeling in Enterprise Profitability and Cost Management.	 <a href="#">Models and Modeling in Enterprise Profitability and Cost Management</a>
Learn how to create models, and how to add rule sets, allocation rules, and custom calculation rules to models.	 <a href="#">Creating Models and Rules in Enterprise Profitability and Cost Management</a>
Learn how validate rules, calculate models by running all rules or selected rules only, and clear calculated data.	 <a href="#">Validating and Calculating Models in Enterprise Profitability and Cost Management</a>
Learn how to run reports to troubleshoot model calculations in the Calculation Analysis screen, and how to use the Rule Balancing screen to analyze model calculations.	 <a href="#">Analyzing and Troubleshooting Model Calculations in Enterprise Profitability and Cost Management</a>





# 8

## Creating and Managing Models

### Related Topics

- [About Models](#)
- [Creating a Model](#)
- [Managing Models](#)
- [Generating a Model Documentation Report](#)
- [Generating a Model Comparison Report](#)

### Videos

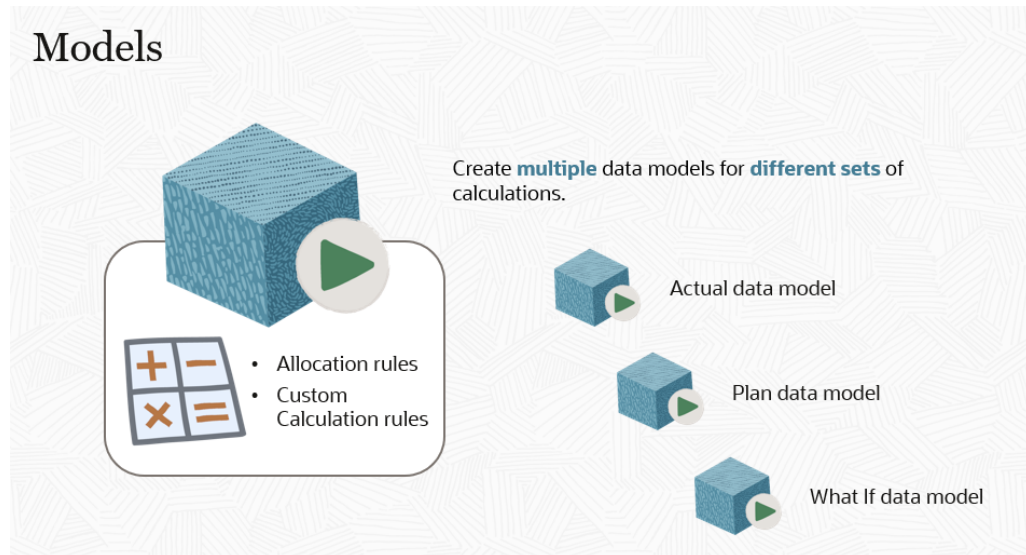
Your Goal	Watch This Video
Understand the key concepts of modeling in Enterprise Profitability and Cost Management.	 <a href="#">Models and Modeling in Enterprise Profitability and Cost Management</a>
Learn how to create models, and how to add rule sets, allocation rules, and custom calculation rules to models.	 <a href="#">Creating Models and Rules in Enterprise Profitability and Cost Management</a>

## About Models

You start the modeling process in Enterprise Profitability and Cost Management by creating models. Models are containers for allocation and custom rules. If you have different sets of rules that you want to apply to your data, you can create multiple models.

For example, you can create one model for calculating actual data, a second model for calculating plan data, and a third model for calculating What If scenarios. You can run different models against the same base financial data to analyze how different drivers or allocation scenarios affect your end results.

## Models



Once a model is created, you can run it against one or more data POVs.


For example, you could run a Forecasting model against 12 periods of data. When you run a model against a data POV, the system layers the results on top of the source data without changing it. This makes it easy to undo or redo a single rule, a rule set, or all of your rules at once. See [Calculating Models](#).

## Creating a Model

To create a model:

1. From the Enterprise Profitability and Cost Management Home page, select **Modeling**, and then **Models**.
2. On the **Models** page, click **+** (Create Model icon).
3. In the **Create Model** dialog box, enter a **Name** and **Description** for your model.  
The name cannot contain any special characters.
4. **Optional:** You can define default member selections for dimensions that will use the same member for all the rules in the model. Defining default member selections saves you from having to select the members for a dimension each time the dimension is used in a rule.

To define default member selections:

- a. In the **Model Context** section, click the **Add Dimensions** drop-down and select a dimension.
- b. Click **Select Member**, and then click  (Invoke Member Selector icon).
- c. In the **Select Members** dialog box, select the member that you want to assign to the dimension, and then click **OK**.

When making default member selections, you can select only level 0 members. See [Using the Member Selector](#) for more information about using the **Select Members** dialog box.

See [Understanding Model and Rule Set Context](#).

5. Click **Save and Close** to return to the **Models** page.


## Managing Models

From the Models page, you can edit, delete, copy, inspect, and refresh models.

### Editing a Model

You can edit the description of an existing model or modify the members selected for the model context by removing the existing dimensions and member selection, or by adding new dimensions and members.


To edit a model:

1. In the **Models** screen, select a model, and then click  (Edit Model icon).
2. In the **Edit Model** dialog box, make any desired changes, and then click **Save and Close**.

### Deleting a Model

If you no longer need the models you created, you can delete the models one by one. When you delete a model, the rules in the model are also deleted.


To delete a model:

1. In the **Models** screen, select the model you want to delete.  
You can select only one model at a time.
2. Click  (Delete Model icon).
3. Click **OK** to confirm the deletion.

### Copying a Model

You can create a copy of a model that preserves the existing rules, and then revise the copied model with new rules. For example, you can preserve the rules of a particular year's model in the copied model, but revise it with new rules for another year.

To copy a model:

1. In the **Models** screen, select a model, and then click  (Copy Model icon).
2. In the **Copy Model** dialog box, enter a name for the copied model, and then click **OK**.  
The copied model is now displayed in the models list.




#### Note:

When you copy a model, all the rules in the model are also copied.

### Inspecting a Model


You can inspect the properties of a model.

To inspect a model:

1. In the **Models** screen, select the model you want to inspect.
2. Click  (Inspect Model icon).

The properties of the selected model appear in the right pane.

### Refreshing the Models List

You can refresh the models listed in the Models screen by clicking  (Refresh icon). The refresh action fetches an updated list of models.

## Generating a Model Documentation Report

The Model Documentation report provides an overview of all the details relevant to a model. It shows the source of allocated values and the logic used to allocate them.

The report shows the name and sequence of the rules used in the model and gives an explanation of the purpose of each rule. If you click a hyperlink for a rule, it will show you details about the rule and the actual rule definition. The hyperlinks enable you to easily navigate through the different areas in the report. For example, you can navigate from the overview of a rule and the sequence in which it occurs to the actual rule definition.

You can save the report locally and distribute it to others, or attach it to other reports to help explain the allocation process to internal or external reviewers and auditors.

The Model Documentation can be generated from the Models page or from the Rule Designer.

To generate a Model Documentation report from the Models page:

1. From the Home page, select **Modeling**, and then **Models**.
2. From the **Models** page, select a model.
3. Click the **Actions** drop-down, and select **Model Documentation Report**.
4. Select any of these formats:
  - PDF
  - EXCEL
  - WORD
  - XML
  - HTML

To generate a Model Documentation report from the Rule Designer:

1. From the Home page, select **Modeling**, and then **Designer**.
2. Click the **Actions** drop-down, and select **Model Documentation Report**.
3. Select any of these formats:
  - PDF
  - EXCEL
  - WORD

- XML
- HTML

**Sample Model Documentation Report**

**Model Snapshot Documentation Report** ORACLE

**Application** : BksML40  
**Model name** : 10 Actuals Allocation Process  
**Description** : Allocation program for Actuals allocations approved for 2021.  
**Created By** : epm\_default\_cloud\_admin  
**Creation Date** : 02/01/2022 09:40:44  
**Modified By** : epm\_default\_cloud\_admin  
**Modified Date** : 02/01/2022 09:40:44  
**Model Context** : Driver.NoDriver

Rule Set Name	Rule Name	Rule Type	Sequence	Enabled	Use Context	Modified By Modified Date	Description
Occupancy Expense Allocations			1	Y	Y	epm_default_cloud_admin 02/01/2022 09:40:45	Occupancy expenses are reassigned from cost centers where the expenses are paid to the cost centers that use the facilities. A rule Set Context is defined for Activity, Product, Customer, and Region dimensions to select the 'No-dimname' members. These dimensions are not meaningful in managing these rules.
Occupancy Expense Allocations	<a href="#">Utilities Expense Adjustment</a>	Custom Calculation	1	Y	Y	epm_default_cloud_admin 02/01/2022 09:40:45	Increases Utilities Expenses by 10%.
Occupancy Expense Allocations	<a href="#">Rent and Utilities Reassignment</a>	Allocation	2	Y	Y	epm_default_cloud_admin 02/01/2022 09:40:45	Rent and Utility expenses are reassigned from the Corporate cost center to the business function cost centers. A driver based on the square feet of each building used by each cost center is used to apportion the expenses.
Manufacturing COGs Related Expense Assignment			2	Y	Y	epm_default_cloud_admin 02/01/2022 09:40:45	Materials expenses that are not included in Cost of Goods sold are applied to products in this rule set. A rule set context for Activity, Customer, and Region dimensions is set to the 'No-dimname' members as these dimensions do not used in these rules.

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1 of 26

**Detailed Information about the Utilities Expense Adjustment Rule in the Model**

**Model Snapshot Documentation Report** ORACLE

**Rule Set Name** : Occupancy Expense Allocations  
**Rule Name** : [Utilities Expense Adjustment](#)  
**Use Rule Set Context** : Y  
**Rule Set Context** :  
 Activity.No Activity  
 Customer.No Customer  
 Product.No Product

**Calculation Mode** : Serial Calculation  
**Iterations** :

Destination	Context	Target	Result Dimension	Estimated Target Count
Account		Utilities		1
Activity	No Activity			
Customer	No Customer			
Driver	NoDriver			
Entity		Corporate		1
Product	No Product			
PCM_Balance				0
<b>Formula</b>	[PCM_Adjustment In]= ([PCM_Input],[PCM_Rule]) * .10;			

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6 of 26

**Tip:**

If you are generating a Model Documentation Report for a large model, it may be more efficient to use the [Generate Model Documentation Report](#) REST API.

## Generating a Model Comparison Report

The Model Comparison report enables you to see the differences between two models. You can use the report to:

- Compare the differences in logic between two different models.  
For example, if you have two different business units using slightly different logic, you can use the report to see what the differences in logic are.
- Compare the differences in logic between an older version of a model and a new version of that same model.  
For example, assume you have a process to allocate your actuals throughout fiscal 2021, and in fiscal 2022 you decide to make some changes to the allocation process. In this example, you could copy the rules in the original Fiscal 2021 Actuals Allocation Process model into a new model called Fiscal 2022 Actuals Allocation Process. After you made changes to the rules in the new model in 2022, you could then run the Model Comparison report to see the differences in the allocation process you were using in 2021 versus 2022.

To generate a Model Comparison report:

1. From the Home page, select **Modeling**, and then **Models**.
2. From the **Models** page, select the two models that you want to compare.
3. Click the **Actions** drop-down, and select **Model Comparison Report**.
4. Select any of these formats:
  - PDF
  - EXCEL
  - WORD
  - XML
  - HTML

***Sample Model Comparison Report***

Model Comparison Report		ORACLE						
Application: BksML40								
Model	10 Actuals Allocation Process	20 Forecast Allocation Process						
Global Context Members	Driver.NoDriver		Driver.NoDriver					
Rulesets not in other Model								
Rulesets with Differences	Occupancy Expense Allocations							
10 Actuals Allocation Process vs 20 Forecast Allocation Process								
Rule Set Name	Rule Name	Rule Type	Enabled	Enabled	Sequence	Sequence	Use Context	Use Context
Occupancy Expense Allocations			true	true	1	1	true	true
Occupancy Expense Allocations	Utilities Expense Adjustment	Custom Calculation	true	true	1	1	true	true
Rule Set Name : Occupancy Expense Allocations								
	10 Actuals Allocation Process	20 Forecast Allocation Process						
Enabled	true	true						
Sequence	1	1						
Use Context	true	true						
Ruleset Context Members	Activity.NoActivity;Customer.NoCustomer;Product.NoProduct		Activity.NoActivity;Customer.NoCustomer;Product.NoProduct					
Rules not in other Model								
Rules with Differences	Utilities Expense Adjustment							
Rule Set Name: Occupancy Expense Allocations								
Rule Name: Utilities Expense Adjustment								
Rule Type: Custom Calculation								
	10 Actuals Allocation Process	20 Forecast Allocation Process						
Enabled	true	true						
Sequence	1	1						
Target	Account.FAC8200;Entity.CC1001;		Account.FAC8200;Entity.CC1001;					
Formula	PCM_Balance[PCM_Adjustment ln] =		PCM_Balance[PCM_Adjustment ln] =					
2/10/2022 15:23 PM			http://den00bzk.us.oracle.com:9000 (22.02.63)				1 of 2	

# 9


## Creating and Managing Rules

### Related Topics

- [About Rules](#)
- [Types of Rules](#)
- [Rule and Rule Member Considerations](#)
- [Dimension and Member Requirements When Creating Rules](#)
- [Understanding Model and Rule Set Context](#)
- [Understanding How System Dimensions Are Used in Rules](#)
- [Creating Allocation Rules](#)
- [Creating Custom Calculation Rules](#)
- [Creating Rule Sets](#)
- [Creating Multiple Rules](#)
- [Creating Multiple Rule Sets](#)
- [Using the Rule Designer](#)

### Video

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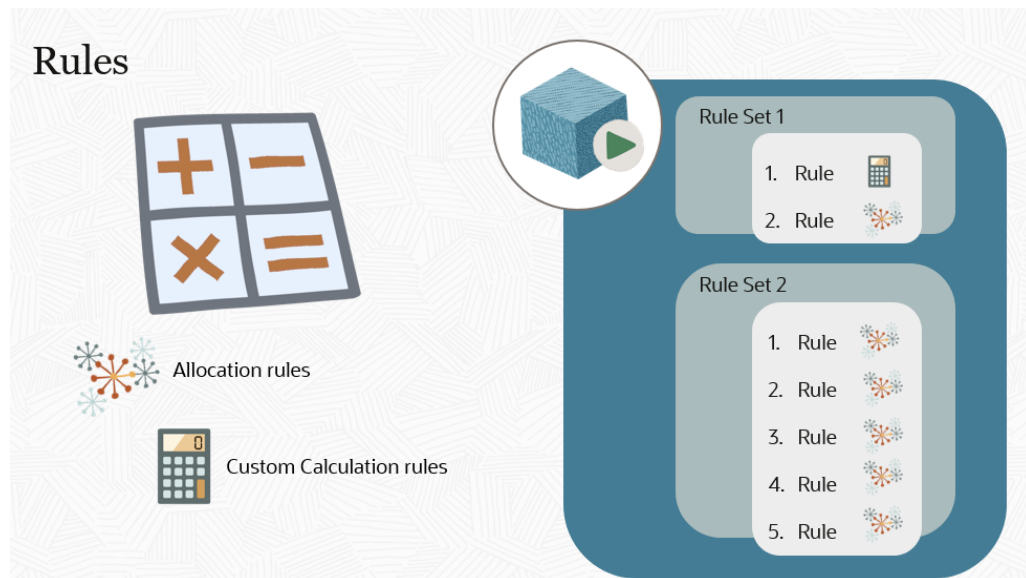
Your Goal	Watch This Video
Learn how to create models, and how to add rule sets, allocation rules, and custom calculation rules to models.	 <a href="#">Creating Models and Rules in Enterprise Profitability and Cost Management</a>

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## About Rules

After you create a model, the next step in the modeling process is to add rules to the model. The rules in a model tell Enterprise Profitability and Cost Management how to execute allocations and custom calculations. You can sequence rules and group them into sets, giving you a granular level of control over the order of your calculation logic.





## Types of Rules

In an Enterprise Profitability and Cost Management application, there are two types of rules:

- **Allocation Rules**, which define the source and destination of allocated data, which drivers are used to allocate the data, and where offsets are placed to balance accounts.

Examples of allocation rules include:

- Rent and Utilities Reassignment, where rent and utility expenses are reassigned from the Corporate cost center to the business function cost centers. A driver based on the square feet of each building used by each cost center is used to apportion the expenses.
- Product Material Allocation, where the cost of materials is allocated to products in the Bike family. A driver member "BOMRate" that reflects the unique rate of consumption of materials by each product is used in the driver basis.
- Activity Costing Assignments, where operating expenses for each functional cost center are assigned to Business Sustaining, Customer Sustaining, or Product Sustaining activities based on the activity time split statistic collected at each cost center.
- **Custom Calculation Rules**, which contain formulas in an Oracle Essbase MDX format and are primarily used for adjusting data or creating driver values used in subsequent allocation rules.

An example of a custom calculation rule is a Utilities Expense Adjustment that increases utility expenses at Corporate Headquarters by 10 percent.

 **Note:**

The allocation and custom calculation rule examples above are some of the rules used in the BksML50 sample application that is provided with Enterprise Profitability and Cost Management. You can refer to the examples in the sample application to get ideas of the different types of rules; however, keep in mind that these examples may not necessarily relate to your application.

## Rule and Rule Member Considerations

As you work with rules and rule members in Enterprise Profitability and Cost Management, keep in mind the following considerations:

- For each unique rule in Enterprise Profitability and Cost Management, there will be a corresponding rule member in Oracle Essbase that matches the rule name. The rule member is created in Essbase during the first calculation run after the rule is created in the Enterprise Profitability and Cost Management Rule Designer. It is advisable to refresh the cube after creating new rules. (See [Using the Rule Designer](#) and [Calculating a Model](#)).
- All rule names must be unique within a model.
- A rule can exist in multiple models.

This is because each model has its own definition of the rule, so the definition of the rule can vary from one model to another. In that sense, they are different rules. But since they both share the same rule name, they both share the same rule member in Essbase; so in that sense, they are the same rule.

- Deleting a rule in the Rule Designer does *not* delete the rule *members* associated with that rule. This is important to understand because deleting a rule member also deletes the data associated with the rule member. (See [Deleting a Rule or Rule Set](#).)
- The only way to delete a rule member is from the Edit Member Properties page accessed from the Application, Dimensions tab. (See [Deleting Members](#).)
- Rule members can have attributes and UDAs.  
Attributes and UDAs make it possible to categorize rules. (See [Working with Attributes](#).)
- If a rule that has been calculated is renamed, then a new member with the new rule name is added to the cube. The old member name still persists, and any data associated with that member name remains in the cube.

## Dimension and Member Requirements When Creating Rules

For each rule that you create in Enterprise Profitability and Cost Management, you must provide full dimensional context for source and destination intersections or for target intersections, depending on the rule type.

In Enterprise Profitability and Cost Management, the following dimensions are required: Years, Period, Scenario, and Version POV dimensions; Entity and Account dimensions; and Balance and Rule system dimensions. Multicurrency applications include a Currency dimension. Additionally, your application may include a number of custom dimensions. In order for a rule to run, it must have members assigned to all of these dimensions regardless of whether the dimension applies to the rule you are creating.

The Years, Period, Scenario, and Version POV dimensions and the Balance and Rule system dimensions are not included in the rule definition, and you do not need to explicitly assign members to these dimensions when creating a rule. The members for the POV dimensions are assigned when you calculate models on the Calculation Control page (see [Calculating Models](#)), and the members for the system dimensions are automatically assigned by the Enterprise Profitability and Cost Management application. This leaves the Entity and Account dimensions, the optional Currency dimension, and any custom dimensions in your application for which you must assign members during rule creation.

For dimensions that are not relevant in a rule, use a "No<dimname> " member. For example, if you are creating a rule that allocates data not assigned to a specific Customer, Activity, or Product dimension, then you would assign **No Customer**, **No Activity**, and **No Product** to these dimensions.

The screenshot shows the 'Create Allocation Rule' interface with the following structure:

- Definition
- Source/Destination** (selected)
- Driver
- Offset
- Validation

Under the 'Source (1)' section, the following dimensions and members are listed:

- Entity
- Account
- Customer: No Customer (highlighted with a red box)
- Activity: No Activity (highlighted with a red box)
- Driver
- Product: No Product (highlighted with a red box)

 **Note:**

You set up "No<dimname> " members for dimensions when you are creating your dimensions and members. See [Adding Members to a Dimension](#) and [Adding "No<dimname>" Members](#).

 **Note:**

If your rule set contains many rules and all of them use the same dimension member selections, it is more efficient to create a Rule Set Context that defines the members for your dimensions rather than selecting the same members for each dimension each time the dimension is used in a rule. See [Understanding Model and Rule Set Context](#).

## Understanding Model and Rule Set Context

If you are creating a large number of rules, you can use Model and Rule Set Contexts to define default member selections for dimensions that will use the same member for all the rules in the model or rule set. This saves you from having to select the same members for a dimension each time the dimension is used in a rule.

Let's consider an example using the BksML50 sample application that is provided with Enterprise Profitability and Cost Management. In addition to the Entity and Account dimensions required in Enterprise Profitability and Cost Management, the sample application includes Customer, Activity, Driver, and Product custom dimensions. So, for each rule that you create in the sample application, you must select members for Entity, Account, Customer, Activity, Driver, and Product. See [Dimension and Member Requirements When Creating Rules](#).

For this example, we will set up a model and rule set as follows:

- Model: 10 Actuals Allocation Process
- Rule Set: Occupancy Expense Allocations

Begin by setting up the 10 Actuals Allocation Process model. In this example, we can set up the Model Context to select default members for any of the Entity, Account, Customer, Activity, Driver, and Product dimensions.

The screenshot shows the 'Create Model' dialog box. At the top, there are buttons for 'Save', 'Save and Close', and 'Close'. The 'Name' field contains '10 Actuals Allocation Process' and the 'Description' field contains 'Allocation program for Actuals allocations approved for 2021.' Below the description is the 'Model Context' section, which is currently empty with the text 'No data to display.' A red box highlights the 'Add Dimensions' dropdown menu, which is open and shows a list of dimensions: Entity, Account, Customer, Activity, Driver, and Product.

As you consider the types of calculations you will be doing, think about whether it makes sense to narrow down the calculations to specific members for any of these dimensions.

In this example, allocations or custom calculations will affect all of the activities, customers, products, entities, and several accounts at some point. That leaves the Driver dimension. Assume that Driver has only one member, and there is only one rule that uses that member. Since Driver will only be used in one rule, you will save yourself time in the modeling process by creating a Model Context that defines the default selection for the Driver dimension.

**Model Context**  
Define global member selections for dimensions that will use the same member for all rules in the model. Add Dimensions ▼

---

Driver NoDriver ...

Since we are not assigning an actual database member to the the Driver dimension, we will select *NoDriver* for the default member selection. *NoDriver* is a member that fulfills the requirement that every dimension must have a member even if the dimension is not used in the rule. (The *NoDriver* member was set up and added to the Driver custom dimension when the Driver dimension was created.)

At this point, our context selections are:

Dimensions required for rule source & destination	Model Context Dimension Selection
Driver	NoDriver
Activity	
Customer	
Product	
Entity	
Account	

The next step is to create the Occupancy Expense Allocations rule set. In this rule set, we want to use the Model Context we defined when we created the 10 Actuals Allocation Process model, where we set the Driver dimension to *NoDriver*. To do this, we will select **Use Model Context** in the **Definition** tab on the **Create Rule Set** page.

Create Rule Set : Occupancy Expense Allocations

**Definition**   Member Selections

\* Rule Set: Occupancy Expense Allocations

Description: Occupancy expenses are reassigned from cost centers where the expenses are paid to the cost centers that use the facilities. A Rule Set Context is defined for Activity, Product, and Customer dimensions to select the 'No<dimname>' members. These dimensions are not meaningful in managing these rules.

\* Sequence: 1

Enabled:

**Use Model Context**

**Rule Set Calculation Options**

Serial Calculation

Parallel Calculation

Iterative Calculation

Number of Iterations: 1

In addition to using the Model Context, we can create a Rule Set Context to define default members for any of the Entity, Account, Customer, Activity, and Product dimensions. (Note that the Driver dimension is not available to select in the Rule Set Context. This is because we enabled the Model Context, which has *NoDriver* defined for the Driver dimension. Any dimensions defined in the Model Context are not available to select in the Rule Set Context.)

Create Rule Set : Occupany Expense Allocations

Definition **Member Selections**

**Rule Set Context**  
Define selected members for dimensions that will apply to all rules of the Program.

Add Dimensions ▼

- Entity
- Account
- Customer
- Activity
- Product

Since we are creating rules for the Occupancy Expense Allocations rule set, we will *not* be moving data in the Activity, Product, or Customer dimensions, but we will be moving data in the Entity and Account dimensions. Since the Activity, Product, and Customer dimensions do not apply to the rules we will create in the rule set, we will set the Rule Set Context to *No Activity*, *No Customer*, and *No Product* for these dimensions.

**Rule Set Context**  
Define selected members for dimensions that will apply to all rules of the Program.

Add Dimensions ▼

Activity	<i>No Activity</i>	...
Customer	<i>No Customer</i>	...
Product	<i>No Product</i>	...

As we did with the *NoDriver* selection we defined in the Model Context, we are assigning these "No<dimname>" members to fulfill the requirement that every dimension must have a member even if the dimension does not apply in the rule. Making these selections in the Rule Set Context means that you will not have to select members for these dimensions in any new rules that you create in the rule set.

At this point, our context selections are:

Dimensions required for rule source & destination	Model Context Dimension Selection	Rule Set Context Dimension Selection
Driver	NoDriver	No Driver
Activity		No Activity
Customer		No Customer
Product		No Product
Entity		
Account		

We are now ready to create the rules in the Occupancy Expense Allocations rule set. For each rule that we create in this rule set, we will select **Use Rule Set Context**.

Rule Set Name Occupancy Expense Allocations

\* Rule Name

Description

\* Sequence 1

Enabled

**Use Rule Set Context**

Remember that the Rule Set Context in this example includes the Activity, Customer, and Product dimensions. In addition, the Rule Set also uses the Model Context, which set a default value for the Driver dimension. So, when we get to the definition screen at the rule level, we will only see options to select members for Entity and Account.

Create Allocation Rule

Definition **Source/Destination** Driver Offset Validation

▶ Source (0)

▶ Entity

▶ Account

Create Custom Rule

Definition **Target** Validation

▶ Target Dimensions (0)

▶ Entity

▶ Account

At this point, our context selections are:

Dimensions required for rule source & destination	Model Context Dimension Selection	Rule Set Context Dimension Selection	Rule Dimension Selection
Driver	NoDriver	No Driver	No Driver
Activity		No Activity	No Activity
Customer		No Customer	No Customer
Product		No Product	No Product
Entity			
Account			

If you are creating a rule where either the Model Context or Rule Set Context does not apply, you can disable these selections. At the Rule level, you handle exceptions by deselecting **Use Rule Set Context**. At the Rule Set level, you handle exceptions by deselecting **Use Model Context**. Note that since the Rule Set Context also includes the Model Context, if you deselect **Use Rule Set Context**, you are also deselecting **Use Model Context**.

In our example, deselecting **Use Rule Set Context** results in all the dimensions in the application being displayed in the **Source/Destination** tab for allocation rules and in the **Target** tab for custom rules. Specifically, in addition to the Entity and Account dimensions, now the Activity, Customer, and Product dimensions from the Rule Set Context are displayed, and the Driver dimension from the Model Context is displayed.

### Create Allocation Rule

Definition
**Source/Destination**
Driver
Offset
Validation

▶ Source (0)

▶ Entity

---

▶ Account

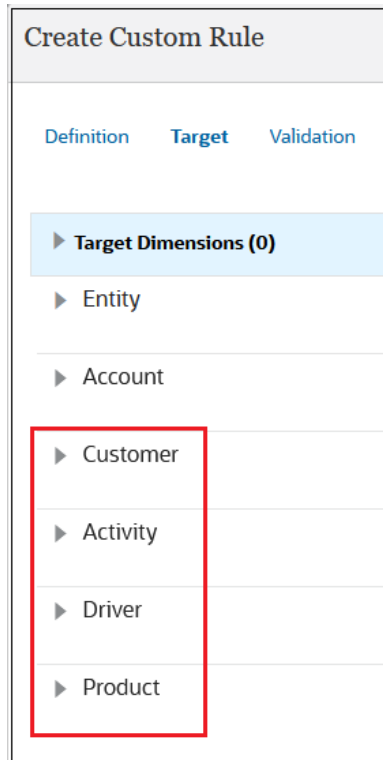
▶ Customer

▶ Activity

▶ Driver

▶ Product





Now let's consider what would happen if you set up rules in the BksML50 sample application and didn't define a Model Context and a Rule Set Context. Each rule still needs all six dimensions defined for the source and destination in allocation rules or for the target in custom rules. If you didn't define a model and rule set context, you would need to manually select members for all the dimensions for every rule you create. If your rule set contains 200 rules and all of them use same dimensions, it is more efficient to define the members for your dimensions in the Rule Set Context than to select them when you define each rule.

## Understanding How System Dimensions Are Used in Rules

### Related Topics

- [Overview of the PCM\\_Rule and PCM\\_Balance System Dimensions](#)
- [Understanding PCM\\_Balance Dimension Members](#)
- [PCM\\_Balance Example](#)

## Overview of the PCM\_Rule and PCM\_Balance System Dimensions

System dimensions in Enterprise Profitability and Cost Management include:

- [PCM\\_Rule Dimension](#)
- [PCM\\_Balance Dimension](#)

### PCM\_Rule Dimension

The **PCM\_Rule** dimension contains all your allocation and custom calculation rules. When you run calculations, the results of each rule are tracked separately. This helps

you to individually track the impact of each allocation and custom calculation, and it allows you to undo any rules that were run.

### Sample PCM\_Rule Dimension

Member Name	Parent Member	Default Data Storage	Hierarchy	Data Type	PCM_CLC Consol op.	PCM_REP Consol op.	Default Alias Table
<b>PCM_Rule</b>		Never Share	Not Set	Unspecified	Ignore	Ignore	
<b>PCM_Calculation Rules</b>	PCM_Rule	Store	Not Set	Unspecified	Addition	Addition	Calculation Rules
PCM_NoRule	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	NoRule
Utilities Expense Adjustment	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Rent and Utilities Reassignment	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Product Material Allocation	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Activity Costing Assignments	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Executive Office Support Activity Charge Out	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Facilities Support Activity Charge Out	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Finance Support Activity Charge Out	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
HR Support Activity Charge Out	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
IT Support Activity Charge Out	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Marketing Activity Assignment	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Shipping Activity Assignment	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Assembly Activity Assignment	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Machining Activity Assignment	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Finishing Activity Assignment	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Quality Assurance Activity Assignment	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Customer Service Activity Assignment	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Inside Sales Activity Assignment	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Outside Sales Activity Assignment	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Customer Support Costs Assignment to Market I	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Product Support Costs Assignment to Market Int	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	
Product COGS Assignment to Market Intersector	PCM_Calculation Rules	Store	Not Set	Unspecified	Addition	Addition	



#### Note:

The rules in this example are from the BksML50 sample application provided with Enterprise Profitability and Cost Management. See [Creating the Sample Application](#) for information on how to access the sample application.

## PCM\_Balance Dimension

The **PCM\_Balance** dimension keeps track of adjustments (custom calculations) and allocations (allocation rules), while preserving the original input data. The PCM\_Balance dimension has three main functions:

- Separates input values from calculated values
- Maintains a Net Balance when many rules act on a single location to allocate funds in or out and adjust values up or down
- Creates a remainder amount to track how much unallocated amounts remain available for future rules to allocate

### PCM\_Balance Dimension

Member Name	Parent Member	Default Data Storage	Hierarchy	Data Type	PCM_CLC Consol op.	PCM_REP Consol op.	Default Alias Table
<b>PCM_Balance</b>		Label only	Not Set	Unspecified	Ignore	Ignore	
<b>PCM_Net Balance</b>	PCM_Balance	Store	Not Set	Unspecified	Addition	Addition	Net Balance
PCM_Input	PCM_Net Balance	Store	Not Set	Unspecified	Addition	Addition	Input
<b>PCM_Net Change</b>	PCM_Net Balance	Store	Not Set	Unspecified	Addition	Addition	Net Change
PCM_Adjustment In	PCM_Net Change	Store	Not Set	Unspecified	Addition	Addition	Adjustment In
PCM_Adjustment Out	PCM_Net Change	Store	Not Set	Unspecified	Addition	Addition	Adjustment Out
PCM_Allocation In	PCM_Net Change	Store	Not Set	Unspecified	Addition	Addition	Allocation In
PCM_Allocation Out	PCM_Net Change	Store	Not Set	Unspecified	Addition	Addition	Allocation Out
<b>PCM_Remainder</b>	PCM_Balance	Store	Not Set	Unspecified	Addition	Addition	Remainder
PCM_Adjustment In.[PCM_Remainder]	PCM_Remainder	Shared	Not Set	Unspecified	Addition	Addition	Adjustment In
PCM_Adjustment Out.[PCM_Remainder]	PCM_Remainder	Shared	Not Set	Unspecified	Addition	Addition	Adjustment Out
PCM_Allocation In.[PCM_Remainder]	PCM_Remainder	Shared	Not Set	Unspecified	Addition	Addition	Allocation In
PCM_Input.[PCM_Remainder]	PCM_Remainder	Shared	Not Set	Unspecified	Addition	Addition	Input
<b>PCM_OutFlow</b>	PCM_Remainder	Store	Not Set	Unspecified	Addition	Addition	OutFlow
PCM_Allocation Offset Amount	PCM_OutFlow	Store	Not Set	Unspecified	Addition	Addition	Allocation Offset Amount
PCM_Allocation Out.[PCM_OutFlow]	PCM_OutFlow	Shared	Not Set	Unspecified	Addition	Addition	Allocation Out
<b>PCM_System</b>	PCM_Balance	Store	Not Set	Unspecified	Addition	Addition	System
PCM_CalculatedDriverValue	PCM_System	Store	Not Set	Unspecified	Addition	Addition	CalculatedDriverValue
PCM_ScratchAllocation Out	PCM_System	Store	Not Set	Unspecified	Addition	Addition	ScratchAllocation Out
PCM_ScratchAllocation In	PCM_System	Store	Not Set	Unspecified	Addition	Addition	ScratchAllocation In

## Understanding PCM\_Balance Dimension Members

**PCM\_Balance** dimension members include:

- [PCM\\_NetBalance](#)
- [PCM\\_Remainder](#)
- [PCM\\_System](#)

### PCM\_NetBalance

**PCM\_NetBalance** is the sum of the **PCM\_Input** and **PCM\_Net Change** members.

Member Name	Parent Member	Default Data Storage	Hierarchy	Data Type	PCM_CLC Consol op.	PCM_REP Consol op.	Default Alias Table
<b>PCM_Balance</b>		Label only	Not Set	Unspecified	Ignore	Ignore	
<b>PCM_Net Balance</b>	PCM_Balance	Store	Not Set	Unspecified	Addition	Addition	Net Balance
PCM_Input	PCM_Net Balance	Store	Not Set	Unspecified	Addition	Addition	Input
<b>PCM_Net Change</b>	PCM_Net Balance	Store	Not Set	Unspecified	Addition	Addition	Net Change
PCM_Adjustment In	PCM_Net Change	Store	Not Set	Unspecified	Addition	Addition	Adjustment In
PCM_Adjustment Out	PCM_Net Change	Store	Not Set	Unspecified	Addition	Addition	Adjustment Out
PCM_Allocation In	PCM_Net Change	Store	Not Set	Unspecified	Addition	Addition	Allocation In
PCM_Allocation Out	PCM_Net Change	Store	Not Set	Unspecified	Addition	Addition	Allocation Out
<b>PCM_Remainder</b>	PCM_Balance	Store	Not Set	Unspecified	Addition	Addition	Remainder
<b>PCM_System</b>	PCM_Balance	Store	Not Set	Unspecified	Addition	Addition	System

- **PCM\_Input:** Where data is loaded. The **PCM\_Input** value is never overridden. This is important because if a calculation is reversed or calculated values are cleared, you can go back to the original input value.
- **PCM\_Net Change:** The sum of **PCM\_Adjustment In**, **PCM\_Adjustment Out**, **PCM\_Allocation In**, and **PCM\_Allocation Out**.
  - **PCM\_Adjustment In:** Typically used in Custom Calculation rules.
  - **PCM\_Adjustment Out:** Typically used in Custom Calculation rules.
  - **PCM\_Allocation In:** Where the allocated values are written in the *destination* in an Allocation rule. An allocation in is typically a positive value.
  - **PCM\_Allocation Out:** Where the offsetting entry is written in the *source* in an Allocation rule. An allocation out is typically a negative value.

### PCM\_Remainder

**PCM\_Remainder** tracks the build up of costs as rules are added to **PCM\_Input**.

Member Name	Parent Member	Default Data Storage	Hierarchy	Data Type	PCM_CLC Consol op.	PCM_REP Consol op.	Default Alias Table
PCM_Balance		Label only	Not Set	Unspecified	Ignore	Ignore	
PCM_Net Balance	PCM_Balance	Store	Not Set	Unspecified	Addition	Addition	Net Balance
PCM_Remainder	PCM_Balance	Store	Not Set	Unspecified	Addition	Addition	Remainder
PCM_Adjustment In [PCM_Remainder]	PCM_Remainder	Shared	Not Set	Unspecified	Addition	Addition	Adjustment In
PCM_Adjustment Out [PCM_Remainder]	PCM_Remainder	Shared	Not Set	Unspecified	Addition	Addition	Adjustment Out
PCM_Allocation In [PCM_Remainder]	PCM_Remainder	Shared	Not Set	Unspecified	Addition	Addition	Allocation In
PCM_Input [PCM_Remainder]	PCM_Remainder	Shared	Not Set	Unspecified	Addition	Addition	Input
PCM_OutFlow	PCM_Remainder	Store	Not Set	Unspecified	Addition	Addition	OutFlow
PCM_Allocation Offset Amount	PCM_OutFlow	Store	Not Set	Unspecified	Addition	Addition	Allocation Offset Amount
PCM_Allocation Out [PCM_OutFlow]	PCM_OutFlow	Shared	Not Set	Unspecified	Addition	Addition	Allocation Out
PCM_System	PCM_Balance	Store	Not Set	Unspecified	Addition	Addition	System

Typically, the remainder amount is increased by the allocation amount received from the source (allocation in), and reduced by the amount allocated to the destination (allocation out).

In some rare cases, only a portion of a source is allocated, or a balancing entry is posted to a location other than the source (see [Defining an Allocation Rule Offset](#)).

For example, assume you have a cost center hierarchy with an Administration member, and the Administration member includes Finance, Human Resources, and Executive Office. Assume further that you run a rule that allocates Executive Office salaries, and then you run another rule that allocates Administration salaries. Since Administration salaries also include Executive Office salaries, the System dimension maintains a Remainder amount to ensure that the Executive Office salaries are not allocated a second time, as well as ensuring that any executive salaries received by the Administration department are also allocated.

By default, offsetting entries are written to the **PCM\_Allocation Out** member in the source. If you specify an alternate offset location then **PCM\_Allocation Out** is written to the alternate location and **PCM\_Allocation Offset Amount** is written to the source. This allows you to place the offset to the desired location and still reduce the remainder value in the source so it can no longer allocate any amounts.

The following children of **PCM\_Remainder** are shared members. Shared members allow you to roll up the same members in different ways to calculate different values, thereby building an alternative hierarchy.

- PCM\_Input
- PCM\_Adjustment In
- PCM\_Adjustment Out
- PCM\_Allocation In
- PCM\_Allocation Out

## PCM\_System

The **PCM\_System** member holds temporary values used by the calculation engine during the execution of a rule. The values are erased after the rule is executed.

Member Name	Parent Member	Default Data Storage	Hierarchy	Data Type	PCM_CLC Consol op.	PCM_REP Consol op.	Default Alias Table
PCM_Balance		Label only	Not Set	Unspecified	Ignore	Ignore	
PCM_Net Balance	PCM_Balance	Store	Not Set	Unspecified	Addition	Addition	Net Balance
PCM_Remainder	PCM_Balance	Store	Not Set	Unspecified	Addition	Addition	Remainder
PCM_System	PCM_Balance	Store	Not Set	Unspecified	Addition	Addition	System
PCM_CalculatedDriverValue	PCM_System	Store	Not Set	Unspecified	Addition	Addition	CalculatedDriverValue
PCM_ScratchAllocation Out	PCM_System	Store	Not Set	Unspecified	Addition	Addition	ScratchAllocation Out
PCM_ScratchAllocation In	PCM_System	Store	Not Set	Unspecified	Addition	Addition	ScratchAllocation In

## PCM\_Balance Example

The **PCM\_Balance** dimension keeps track of adjustments (custom calculations) and allocations (allocation rules), while preserving the original input data. We will demonstrate this using an example.

Assume you have the following members and POV:

- **Entities:** Corp HQ, Marketing, Sales, Finance
- **Account:** Utilites
- **POV:** Actual, FY22, Jan, Working

The grid shows the **PCM\_Balance** members in the columns, and the entites in the rows.

	A	B	C	D	E	F	G
1	Actual	FY22	Jan	Working	Utilities		
2							
3		Input	Allocation In	Allocation Out	Adjustment In	Adjustment Out	Net Balance
4	Corp HQ						
5	Marketing						
6	Sales						
7	Finance						
8	Total						

In this example, we will:

- Load input data
- Run a custom calculation rule to adjust the utilities expenses by 10%
- Run an allocation rule to allocate the adjusted data from Corporate HQ to the other three entities (Marketing, Sales, Finance)

After we load the data and run the rules, you will see that the **Input** total does not change, and the **Net Balance** only changes when we add an adjustment entry to modify the data.

As we go through this example, remember that **PCM\_Net Balance** is the sum of **Input**, **Allocation In**, **Allocation Out**, **Adjustment In**, and **Adjustment Out**.

PCM_Balance
PCM_Net Balance
PCM_Input
PCM_Net Change
PCM_Adjustment In
PCM_Adjustment Out
PCM_Allocation In
PCM_Allocation Out

### Step 1: Load input data

We will begin by loading input data. In this example, we will load **Utilities** expenses of **\$3,000** to the intersection of **Actual->FY22->Jan->Working->Utilities->Corp HQ->Input**.

	A	B	C	D	E	F	G
1	Actual	FY22	Jan	Working	Utilities		
2							
3		Input	Allocation In	Allocation Out	Adjustment In	Adjustment Out	Net Balance
4	Corp HQ	\$ 3,000					\$ 3,000
5	Marketing						\$ -
6	Sales						\$ -
7	Finance						\$ -
8	Total	\$ 3,000	\$ -	\$ -	\$ -	\$ -	\$ 3,000

**Step 2: Run a custom calculation rule to adjust Corp HQ utilities by 10%**

The next step is to run a custom calculation rule to adjust the utilities expenses by 10%. The adjustment calculation is `[PCM_Adjustment In]:=([PCM_Input],[PCM_Rule])* .10;` with a target of **Corp HQ->Utilities**. The system finds the **Input** value for **Corp HQ->Utilities** and writes the adjustment value to the **Adjustment In** member. In this example, we specified the destination in our formula; it wasn't chosen by the system automatically.

	A	B	C	D	E	F	G
1	Actual	FY22	Jan	Working	Utilities		
2							
3		Input	Allocation In	Allocation Out	Adjustment In	Adjustment Out	Net Balance
4	Corp HQ	\$ 3,000			\$ 300		\$ 3,300
5	Marketing						\$ -
6	Sales						\$ -
7	Finance						\$ -
8	Total	\$ 3,000	\$ -	\$ -	\$ 300	\$ -	\$ 3,300

**Step 3: Run an allocation rule to allocate the adjusted data from Corporate HQ to Marketing, Sales, and Finance**

When we run the allocation rule, the system takes **Corp HQ->Utilities->Net Balance** and allocates that to the other **Entities->Utilities->Allocation In** members, while also creating an offsetting entry for **Corp HQ->Utilities->Allocation Out**.

	A	B	C	D	E	F	G
1	Actual	FY22	Jan	Working	Utilities		
2							
3		Input	Allocation In	Allocation Out	Adjustment In	Adjustment Out	Net Balance
4	Corp HQ	\$ 3,000		\$ (3,300)	\$ 300		\$ -
5	Marketing		\$ 1,100				\$ 1,100
6	Sales		\$ 1,100				\$ 1,100
7	Finance		\$ 1,100				\$ 1,100
8	Total	\$ 3,000	\$ 3,300	\$ (3,300)	\$ 300	\$ -	\$ 3,300

Notice that after running these rules, the **Input** total of **\$3,000** did not change, and the **Net Balance** only changed when we added the adjustment entry to modify the data. The allocation moves data around to different places, but *none of the rule calculations ever change the Input data*. If after running the rules, the Net Balance for Corporate HQ was \$0, you could still go back and see the \$3,000 that was originally loaded.

If we add the **PCM\_Rule** dimension to this example, the information in the grid displays as follows. (The **All Rules** section aggregates all three steps.)

	A	B	C	D	E	F	G	H
1	Actual	FY22	Jan	Working	Utilities			
2								
3			Input	Allocation In	Allocation Out	Adjustment In	Adjustment Out	Net Balance
4	No Rule	Corp HQ	\$ 3,000					\$ 3,000
5		Marketing						\$ -
6		Sales						\$ -
7		Finance						\$ -
8		Total	\$ 3,000	\$ -	\$ -	\$ -	\$ -	\$ 3,000
9								
10			Input	Allocation In	Allocation Out	Adjustment In	Adjustment Out	Net Balance
11	Rule 1	Corp HQ				\$ 300		\$ 300
12		Marketing						\$ -
13		Sales						\$ -
14		Finance						\$ -
15		Total	\$ -	\$ -	\$ -	\$ 300	\$ -	\$ 300
16								
17			Input	Allocation In	Allocation Out	Adjustment In	Adjustment Out	Net Balance
18	Rule 2	Corp HQ			\$ (3,300)			\$ (3,300)
19		Marketing		\$ 1,100				\$ 1,100
20		Sales		\$ 1,100				\$ 1,100
21		Finance		\$ 1,100				\$ 1,100
22		Total	\$ -	\$ 3,300	\$ (3,300)	\$ -	\$ -	\$ -
23								
24	All Rules		Input	Allocation In	Allocation Out	Adjustment In	Adjustment Out	Net Balance
25		Corp HQ	\$ 3,000		\$ (3,300)	\$ 300		\$ -
26		Marketing		\$ 1,100				\$ 1,100
27		Sales		\$ 1,100				\$ 1,100
28		Finance		\$ 1,100				\$ 1,100
29		Total	\$ 3,000	\$ 3,300	\$ (3,300)	\$ 300	\$ -	\$ 3,300

## Creating Allocation Rules

### Related Topics

- [About Creating Allocation Rules](#)
- [Creating an Allocation Rule Definition](#)
- [Defining an Allocation Rule Source and Destination](#)
- [Defining an Allocation Rule Driver](#)
- [Defining an Allocation Rule Offset](#)
- [Validating Allocation Rules](#)
- [Running a Rule Data Validation Report for Allocation Rules](#)
- [Using Ad Hoc to Analyze Allocation Rule Data](#)

## About Creating Allocation Rules

When you create an allocation rule, you define the following information:

- **Source:** Where the data you are allocating starts out
- **Destination:** Where the allocated data needs to go
- **Driver:** How to split the source data across the destinations
- **Offset:** How to balance out the allocated data

By default, allocation rules allocate 100% of the amounts in the source intersections. The allocation driver determines the proportion each destination intersection receives

using a driver value / total driver value ratio. If a destination has no driver value, then it receives no allocation. The source amounts automatically include any amounts allocated to the source intersections by previously-executed rules.



**Tip:**

Review [Dimension and Member Requirements When Creating Rules](#) before you begin creating your allocation rules.

**Allocation Rule Example**

In this example, facilities expenses for the **Corporate** cost center are allocated to the **Facilities** account across multiple cost centers.

Definition	Source/Destination	Driver	Offset	Validation
	▶ Source (2) ...			Destination (28) ...
	▲ Entity ...			...
	Corporate <i>Add Source</i>			Facilities Sales Manufacturing Marketing Shipping Customer Service Administration <i>Add Destination</i>
	▲ Account ...			...
	Facilities Expenses <i>Add Source</i>			Same As Source(Account)

The **Facilities** allocation uses a driver of **Occupancy Square Feet**.



Definition   Source/Destination   **Driver**   Offset   Validation

Allocate Evenly  
 Specify Driver Location

**Specify Driver Location**  
 Defines the member used to calculate the allocation ...

PCM_Balance	Same As Destination
PCM_Rule	Same As Destination
Entity	Same As Destination
Account	Occupancy Square Feet
Customer	Same As Destination
Activity	Same As Destination
Driver	Same As Destination
Product	Same As Destination
Period	Same As Destination
Years	Same As Destination

The offset tells the system to post the allocated data to an alternate location.

Definition   Source/Destination   Driver   **Offset**   Validation

Post Offset to the Source Location  
 Post Offset to Alternate Location

**Offset Dimensions**  
 Add dimensions for Offset


Entity	Same As Source
Account	Allocations Sent
Customer	Same As Source
Activity	Same As Source
Driver	Same As Source
Product	Same As Source

 **Note:**

The allocation rule in this example is used in the BksML50 sample application provided with Enterprise Profitability and Cost Management. See [Creating the Sample Application](#) for information on how to access the sample application.

## Creating an Allocation Rule Definition

To create an allocation rule definition:

1. From the Home page, select **Modeling**, and then **Designer**.
2. On the **Waterfall Setup** tab, click the **Model** drop-down, and select a model.
3. Select the rule set to which you want to add the allocation rule.
4. Click , and then select **Allocation Rule**.
5. On the **Create Allocation Rule** page, in the **Definition** tab, enter the following information:
  - **Rule Name:** Enter a name for the rule.

For example, the "Occupancy Expense Allocations" rule set in the the BksML50 sample application provided with Enterprise Profitability and Cost Management, contains an allocation rule called "Rent and Utilities Reassignment" .

Rule names have the same restrictions as the member names in Oracle Essbase. See [Naming Restrictions for Dimensions, Members, and Aliases](#).
  - **Description:** Enter a description for the rule.

The description you enter here will appear in the Model Documentation report. Enter a description that will make the information about the allocation rule informative for anyone reviewing the model logic in the future. See [Generating a Model Documentation Report](#).

For example, you could say something like; "Rent and Utility expenses are reassigned from the Corporate cost center to the business function cost centers. A driver based on the square feet of each building used by each cost center is used to apportion the expenses."
  - **Sequence:** Enter a number to determine the order in which the rule will run in the rule set.

The Sequence can be any whole number from 1 to 9999.

Rules with the same sequence number will run at the same time if parallel calculation is enabled for the parent rule set, and the number specified for **Calculation Threads** in the Applications Settings. (See "Step 5: Select a Rule Set Calculation Option" in [Creating a Rule Set](#), and "Calculation Threads" in [About Managing Application and System Settings](#).)
  - **Enabled:** If selected, the rule will be active when the calculation is performed.
  - **Use Rule Set Context:** If selected, the member selections done when the rule set was created will apply to this rule. If a Model Context has been enabled for the rule set, it will also be applied. See [Understanding Model and Rule Set Context](#).

- **Allocated Amount Type:** Limits how much of the source is allocated. Select an option:
  - **None:** This is the default option. If selected, all of the money in the source is allocated.
  - **Currency:** If selected, limits the amount allocated from each source intersection by the currency value entered in the **Amount** field. For example, an amount of 1000 would limit the allocation from each cell to 1000 of whatever currency is used.
  - **Percentage:** If selected, limits the amount allocated from each source intersection by the percentage entered in the **Amount** field. For example, 50 would limit the allocation from each cell to 50%.
- **Amount:** If you select **Currency** or **Percentage** for the **Allocated Amount Type**, enter the currency value or the percentage value to allocate in the rule.

6. Click **Save**.

### Allocation Rule Definition Example

In this example, the Rent and Utilities Reassignment rule will be the second rule run in the Occupancy Expense Allocations rule set. It will use a previously-defined Rule Set Context, and does not have a specific allocated amount type.

Definition	Source/Destination	Driver	Offset	Validation
Rule Set Name: Occupancy Expense Allocations				
* Rule Name: Rent and Utilities Reassignment				
Description: Rent and Utility expenses are reassigned from the Corporate cost center to the business function cost centers. A driver based on the square feet of each building used by each cost center is used to apportion the expenses.				
* Sequence: 2				
Enabled: <input checked="" type="checkbox"/>				
Use Rule Set Context: <input checked="" type="checkbox"/>				
Allocated Amount Type: None				
Amount: <input type="text"/>				

## Defining an Allocation Rule Source and Destination

Use the **Source/Destination** tab on the **Create Allocation Rule** page to define how to allocate data from the source to the destination.

When you first access the **Source/Destination** tab, the required Entity and Account dimensions, the optional Currency dimension if you have a multicurrency application, and any custom dimensions in your application are displayed in the **Source** column. If you have defined and enabled a Rule Set Context or a Model Context, any dimensions defined in the Rule Set Context or a Model Context are not displayed. See [Understanding Model and Rule Set Context](#).

Review these topics for more information:

- [Defining an Allocation Source](#)
- [Defining an Allocation Destination](#)
- [Managing Filters for Source and Destination Members](#)

- [Allocation Source/Destination Example](#)

## Best Practices for Allocation Rule Source and Destination


- Avoid using tops of hierarchies in rule Source, Destination or Targets whenever possible. The database is efficient, but compact rule definitions can make it more efficient. For example, a source defined as "AllAccounts", "AllEntities", "AllCompanies", and "AllProducts", where Accounts, Entities, Companies, and Products each have 1000 level 0 members requires the database to scan 1000<sup>4</sup> (1 trillion) potential locations for source data.
- Use the "Same as Source" option in the allocation destination. See [Setting the Destination to Same As Source](#).
  - Allows you to use a single rule to process many source combinations where you want allocations to "stay home" for some dimensions and spread across others
  - Often allows one Enterprise Profitability and Cost Management rule to replace many rules from a legacy system
- Source member selections should favor the parent member
  - Avoid picking individual children if you can pick a parent, or use an alternate hierarchy designed for rule processing that allows you to group members in a common parent.
  - Oracle Essbase is often much faster if it can process all descendants of a parent instead of making multiple passes for each child.
- Questionable source and destination combinations need to be challenged. For example, if both your Source and Destination is "Total Entity", you will have a large cross product of Entity combinations.
- If you adopt allocation rule designs from a legacy system, make sure you understand the true business requirement before applying them to your rules in Enterprise Profitability and Cost Management.

## Defining an Allocation Source


Begin by defining the members from which the rule will retrieve the data to allocate.

For each dimension in the **Source** column, select the member or members that hold the data to allocate. You must select a member for every dimension. If a dimension does not apply to the data in your rule, select the No<dimname> member. See [Dimension and Member Requirements When Creating Rules](#).

To select members for the source:


1. Expand a dimension in the **Source** column.
2. Click **Add Source**, and then click .
3. In the **Select Members** dialog box, select the desired members, and click **OK**. See [Using the Member Selector](#).

If you have several members to add to the source dimensions and you know the member names, instead of adding each member one-by-one from the **Select Members** dialog

box, you can click  to the right of the **Source** heading and enter the members in the **Dimension Member Editor**.


For example, if you have a list of members in an Excel spreadsheet, you can copy these members from Excel, and then paste them into the **Dimension Member Editor**. The members will be added to the dimensions in the source to which they were assigned when the dimensions were created. See [Adding Members to a Dimension](#).

 **Note:**

The members you enter in the **Dimension Member Editor** can be assigned to any applicable dimension in the source. To add multiple members to a specific dimension, click  next to the dimension.

 **Tip:**

Selecting an upper-level member selects all the descendants of that member. For example, if you choose "All Accounts", then your selection is really all the Level 0 descendants of "All Accounts". The rule will execute an allocation for each level-0 member. Selecting an upper-level member eliminates the need to pick each specific member individually.

You can also click  next to a dimension in the **Source** column, and select one of the following options:

- **Add Multiple Members Source:** Accesses a dialog box where you can assign multiple members to the dimension at one time instead of having to individually select each member.
- **Calculation Segmentation:** If selected, rules are segmented into smaller rules to execute separately. This optimization option produces the same results but executes in a faster way.

 **Note:**

You should use Calculation Segmentation only when your source range is extremely large and sparsely populated. As a best practice, you should call support before proceeding with this option.

- **Clear <Dimname> Selections:** Clears all of the members you have selected for the dimension.

To remove an individual member, click on the member, and then select **Remove<MemberName>**, where <MemberName> is the name of the member you are removing.

 **Note:**



See [Managing Filters for Source and Destination Members](#) for information on how to filter the source and destination members used in a rule.

## Defining an Allocation Destination


After defining an allocation source, the next step is to define the members that describe where to allocate the data.

For each dimension in the **Destination** column, select the members that are to receive the allocated data. If you select a parent member, the allocation will go to its all its level 0 descendants.

To select members for the destination:


1. Click  next to a dimension in the **Source** column to expand it.
2. In the **Destination** column, click **Add Destination**, and then click .
3. In the **Select Members** dialog box, select the desired members, and click **OK**. See [Using the Member Selector](#)


If you have a large number of members to add to the destination dimensions and you know the member names, instead of adding each member one-by-one from the **Select**

**Members** dialog box, you can click  to the right of the **Destination** heading and enter the members in the **Dimension Member Editor**.

For example, if you have a list of members in an Excel spreadsheet, you can copy these members from Excel, and then paste them into the **Dimension Member Editor**. The members will be added to the dimensions in the destination to which they were assigned when the dimensions were created. See [Adding Members to a Dimension](#).

 **Note:**

The members you enter in the **Dimension Member Editor** can be assigned to any applicable dimension in the destination. To add multiple members to a specific dimension, click  next to the dimension.

You can also click  next to a dimension in the **Destination** column, and select one of the following options:

- **Add Multiple Members Destination:** Accesses a dialog box where you can enter multiple members to the dimension at one time instead of having to individually select each member.
- **Set Destination Same As Source:** Defines the members set for a destination dimension to be the same as the members set for the source dimension. See [Setting the Destination to Same As Source](#).

- **Clear <Dimname> Selections:** Clears all of the members you have selected for the dimension.

To remove an individual member, click on the member, and then select **Remove<MemberName>**, where <MemberName> is the name of the member you are removing.




#### Note:

See [Managing Filters for Source and Destination Members](#) for information on how to filter the source and dimension members used in a rule.

## Setting the Destination to Same As Source

You can define the members for a dimension in the destination to be the same as the members selected for a dimension in the source. In this case, when the rule runs, members in the destination are selected for allocation by matching to the member selection in the source. Members in the source selection that are not level 0 are resolved to level 0 members and then are matched with level 0 members in the destination. This means that values associated with a source member are not allocated to other members for the dimension, but will remain associated with the same member as the source.

To set the destination members to be the same as the source members:

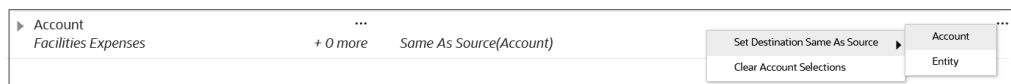
1. Click  next to a dimension in the **Destination** column.
2. Select **Set Destination Same As Source**.

When you select **Set Destination Same As Source**, you can select the same dimension used in the source (*Same as Source, Same Dimension*), or you can select a different dimension (*Same as Source, Different Dimension*).

### Same as Source, Same Dimension

Select the same dimension that you used in the source if you want to allocate to the same *members* in the destination dimension that you used in the source dimension. This is the default.

In this example, we selected the Account dimension, which is the same as the source Account dimension.



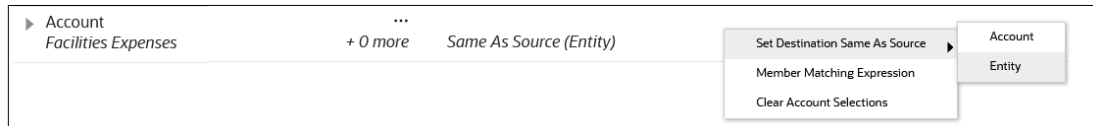
When defining the destination range, you can use the *Same as Source, Same Dimension* option for as many dimensions as desired.

### Same as Source, Different Dimension

In rare cases when dimension members in different dimensions are nearly identical, you can use the *Same as Source, Different Dimension* option. In this case, you are requesting that the destination members match the source members you selected for a different dimension.

Selecting a different dimension than the source dimension allows you to create source and destination references with dimensions that use members names that occur in multiple dimensions. For example, you could use both the Origin Entity and Target Entity dimensions in order to track sending and receiving entities in the allocation results.

In this example, we selected the Entity dimension, which is different than the source Account dimension.



When defining the destination range, you can use the *Same as Source, Different Dimension* option for only one dimension.


### Note:

When using the *Same as Source, Different Dimension* option, keep in mind that you cannot have duplicate member names, even if the members are in different dimensions. For example, if you had an Entity called *Sales* and an Account called *Sales*, you would use a prefix to differentiate the members. For example, *ENT\_Sales* and *ACC\_Sales*.

See [Defining Member Matching Expressions](#) for information on how to define expressions to match member names.

## Defining Member Matching Expressions

When selecting a destination dimension that is different than the source dimension, you can define expressions that use wildcard characters to match member names. To do this:

1. Click  next to the destination dimension, and select **Member Matching Expression**.
2. Enter the expressions for the member names in the **Member Matching Expression** dialog box.

The following characters are available when creating member matching expressions:

- "#" means ignore (trim) one character in the member name
- "\*" represents the characters that are left after the characters represented by # are trimmed.

Using the "#" and "\*" characters, you can trim a prefix, a suffix, or both a prefix and a suffix from a member name before a match is attempted.

Each expression can have multiple #s, but only one \*. For example:

###\* trims a 3-char prefix

\*#### trims a 4-char suffix

##\*### trims both a prefix and a suffix

##\*#\*### is not allowed

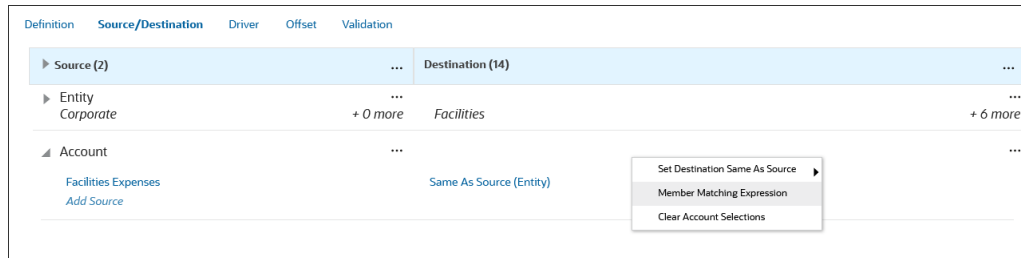


## Member Matching Expression Example

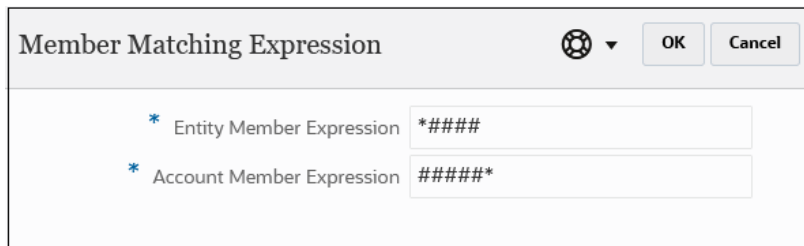
Let's consider an example where your application has two dimensions, Entity and Account, with members as follows:

- Entity: mem1\_ENT, mem2\_ENT, mem3\_ENT
- Account: ACCT\_mem1, ACCT\_mem2, ACCT\_mem3

In this example, we will select Account for the source dimension, and set the members in the destination dimension to be the same as the members in the source Account dimension, but with Entity selected for the destination dimension. We will then add expressions to match the members for the Entity and Account dimensions.



In this example, the expressions to match the members for the Entity and Account dimensions are follows:



For Entity, the expression `*#####` ignores the four characters at the end of the member name `_ENT` and leaves the characters in the front.

For Account, the expression `#####*` ignores the five characters `ACCT_` and leaves the rest of the characters in the member name to be matched.

Applying both of these expressions results in Entity's `mem1_ENT` matching with Account's `ACCT_mem1`.

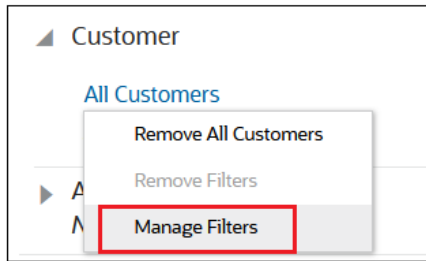
## Managing Filters for Source and Destination Members

When you select an upper level member for a source or destination dimension in an allocation rule, all level-0 descendants of that member are included in the rule. If you do not want to include all the level-0 descendants in a rule, you can apply a filter to limit the included members.

For example, assume your member selection is All Customers, and All Customers has 1,000 level-0 descendants. Assume further that you want to include only the customers in Delivery Zone B in your rule. In this case, you could apply a filter to limit the level-0 descendants included in your rule to only customers in Delivery Zone B.

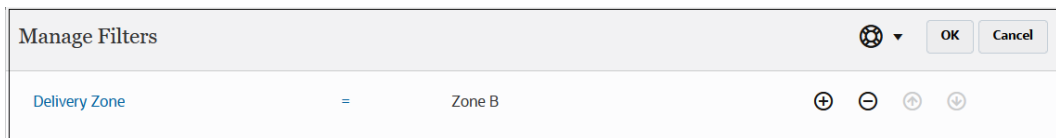
To add a filter to a member:

1. In the **Source/Destination** tab, click the desired member and select **Manage Filters**.

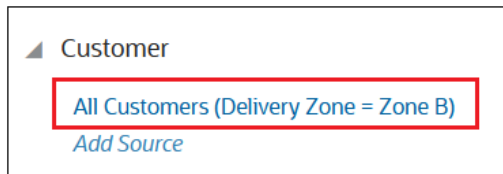


2. In the **Manage Filters** dialog box, click  .
3. Enter the member name and a filter value.

In our example, we filtered the customers to Delivery Zone B.



You can add more than one filter. When you add a filter, it is shown next to the member.



 **Note:**

To remove a filter, click the member and select **Remove Filters**. If you have more than one filter, click the filter you want to remove.

## Allocation Source/Destination Example

In this example, facilities expenses for the **Corporate** cost center are allocated to the **Facilities Expenses** account across multiple cost centers.

Definition	Source/Destination	Driver	Offset	Validation
	▶ Source (2) ...			Destination (28) ...
	▲ Entity ...			...
	Corporate Add Source			Facilities Sales Manufacturing Marketing Shipping Customer Service Administration Add Destination
	▲ Account ...			...
	Facilities Expenses Add Source			Same As Source(Account)

## Defining an Allocation Rule Driver

The driver definition tells the system how to split the source data across the destinations.

Select an option to specify how to allocate the data:

- **Allocate Evenly:** Allocates data evenly across all destinations.
- **Specify Driver Location:** Uses a driver to determine the percentages to allocate to each destination. If a destination has no driver value, then it receives no allocation.





If you choose to use a driver to determine the allocation proportions, note the following:

- All of the dimensions in the database are available to use as a driver, regardless of whether a Rule Set Context or a Model Context has been enabled for the rule. (See [Understanding Model and Rule Set Context](#).)
- In addition to the Entity and Account dimensions, optional Currency dimension, and any custom dimensions required to create a rule, the Years, Period, Scenario, and Version POV dimensions and the PCM\_Balance and PCM\_Rule system dimensions are available for driver selection.
  - The POV dimensions enable you to use a data value from another POV for the driver.
  - The PCM\_Rule dimension enables you to use a data value generated by a previous rule for the driver.
  - The PCM\_Balance dimension is usually used in combination with the PCM\_Rule dimension. When a rule runs, it writes the result to the intersection of the rule member and the Allocation In or Allocation Out balance members.

All of the dimensions, with the exception of the system dimensions, are initially set to *Same As Destination*. PCM\_Rule is set to *NoRule*, and PCM\_Balance is set to *Input*. These are the default settings. Leave the dimensions at their default values if you want the driver value to be referenced by the destination locations defined on the **Source/Destination** tab.

If you want the driver value to be referenced by a fixed member that is different than the destination location, you can have only one driver member selection per dimension, and it must be a single member. It can be either an upper-level member or a level-0 member, but you can have only one selection per dimension.

To change the driver location reference to a fixed member:

1. Click the default *Same As Destination* value next to a dimension, and then click .  
If you are specifying a fixed member for the PCM\_Balance dimension, click the default *Input* value and select **Remove Input**. The driver value changes to *Same As Destination*.  
Click *Same As Destination*, and then click .  
If you are specifying a fixed member for the PCM\_Rule dimension, click the default *NoRule* value, and select **Remove NoRule**. The driver value changes to *Same As Destination*. Click *Same As Destination*, and then click .
2. In the **Select Members** dialog box, select the dimension member that will be used to calculate the allocation. See [Using the Member Selector](#).  
You can select only one member per dimension for the driver. The member selected can be an upper-level member or a level-0 member.  
You can optionally click  to the right of the **Specify Driver Location** heading and enter the members to use as the driver in the **Dimension Member Editor**. The members will be added to the dimensions to which they were assigned when the dimensions were created. See [Adding Members to a Dimension](#).

## Best Practices for Allocation Rule Drivers

- Avoid using dynamic members (upper-level members or members with a formula) in the driver definition.
  - Oracle Essbase ignores destinations with no driver data.
  - Dynamic members require a computation or aggregation before Essbase can determine if driver data is present.
  - A large destination range can result in many unnecessary computation steps for determining whether the driver data is absent.
  - An upper-level member returns an aggregated value – it does not define where to allocate.
- Use data prep rules to compute driver data in ranges where allocation rules will need it – compute once, use many.
- Keep in mind that if you are migrating from EBS, PSFT or other ledger-based allocations, the driver does *not* contribute to the destination definition.

## Allocation Driver Example

This example defines a driver of **Occupancy Square Feet**.

Specify Driver Location	
Defines the member used to calculate the allocation	
PCM_Balance	Same As Destination
PCM_Rule	Same As Destination
Entity	Same As Destination
Account	Occupancy Square Feet
Customer	Same As Destination
Activity	Same As Destination
Driver	Same As Destination
Product	Same As Destination
Period	Same As Destination
Years	Same As Destination


## Defining an Allocation Rule Offset

The offset tells the system how to balance out the allocated data. Select an option to specify where to post the offset:

- **Post Offset to the Source Location:** If you select this option, the selected Source dimension members are used as the offset.
- **Post Offset to an Alternate Location:** If you select this option, you specify a dimension target to calculate the offset values.

By default the offset is the same as the source location.

If you want to post the offset to an alternate location:

1. Select **Post Offset to an Alternate Location**.
2. Click the default *Same As Source* value next to a dimension, and then click .
3. In the **Select Members** dialog box, select the dimension member to use for the offset. You must select a single, level-0 member. See [Using the Member Selector](#).

You can optionally click  to the right of the **Offset Dimensions** heading and enter the members in the **Dimension Member Editor**.

The members will be added to the dimensions to which they were assigned when the dimensions were created. See [Adding Members to a Dimension](#).

### Note:

You do not need to select an alternate member for every dimension. Instead, select an alternate member only for those dimensions whose members are different from the members in the source location.

## Best Practices for Allocation Rule Offsets

- Use offset source if no integration to GL is required and reporting needs are only management reports.
- Because the offset *writes* the data, do not use upper-level members in the offset definition. You should question any design that requires an upper-level offset as this implies another allocation of offset amounts.
- Use the Allocation Accounts and/or Data Step dimensions to categorize offsets and make them easier to isolate for integration purposes.

## Allocation Offset Example

In this example, the offset tells the system to post the allocated data for the Account dimension to an Allocations Sent account. For all of the other dimensions, the allocated data will be posted to the same member as defined in the source.

Definition	Source/Destination	Driver	Offset	Validation
<input type="radio"/> Post Offset to the Source Location <input checked="" type="radio"/> Post Offset to Alternate Location				
<b>Offset Dimensions</b> Add dimensions for Offset				
Entity				Same As Source
Account				Allocations Sent
Customer				Same As Source
Activity				Same As Source
Driver				Same As Source
Product				Same As Source

## Validating Allocation Rules

When you access the **Validation** tab, any errors or warnings in your allocation rules are displayed. The validation checks each rule for these conditions:

- The rule is fully defined  
This means that the source and destination definitions for each rule must include members for every dimension.
- Dimension members referenced in your rule definitions exist in the database

If you delete members from dimensions that are referenced in existing rules, the rules can't run.

If you have several validation errors or warnings, you can click **Export to Excel**, and use the Excel spreadsheet as a checklist as you go back to the **Source/Destination** tab to fix the errors and warnings.

Continue fixing any errors in your rules until there are no errors listed on the **Validation** tab.

**Note:**

See [Validation Errors and Warnings](#) for details on the errors and warnings that may occur when validating your allocation rules.

## Running a Rule Data Validation Report for Allocation Rules

Rule Data Validation reports help you verify that all required source and driver data is included for allocation rules. The report displays a summary of the intersections for the selected rule's source and driver as well as any rule and driver data totals and number of total records. You can select to display Summary Values Only or Summary Values along with Source Data and/or Driver Data. If the intersection count is greater than 1000, only the first 100 intersections are displayed. If either Source Data or Driver Data is not selected, that portion of the report is blank.

Use this report to validate that your source and driver allocations are set up correctly.

For example, assume you run a Rule Balancing report and notice that a particular rule is not allocating anything, or maybe the rule is not allocating in the way that you expected. In this scenario, the Rule Data Validation report can help you pinpoint the problem by querying both the source and driver to determine exactly what data is being allocated and what driver data is being used.

To continue with this example, assume that you are allocating \$8 million dollars of rent, but your rule source only comes up with \$6 million dollars. If this happens, either the rule source was set up incorrectly, or the correct data did not get imported to the source. The Rule Data Validation report is where you would be able to see exactly how much money is included in the source range that you defined.

To run a Rule Data Validation report:

1. From the Home page, select **Modeling**, and then **Designer**.
2. From the **Waterfall Setup** tab, select an allocation rule.
3. Click **Actions**, and select **Rule Data Validation Report**.
4. In the **Rule Data Validation Report** dialog box:
  - Select values for the **Years**, **Period**, **Scenario**, and **Version** POV dimensions.
  - Select whether to include **Summary Values Only** or **Summary Values and a Data Sample**.

If you select to include **Summary Values and a Data Sample**, select whether to include **Source Data**, **Driver Data**, or both Source and Driver data.

 **Tip:**

Including all the detail in a Rule Data Validation report can take a long time and produce a large report. Try displaying just the summary information as a first step.

- Specify a **Rounding Precision** to apply to the results. The default is two decimal places. You can round up to ten decimal places. The rounding precision you specify applies to both the source and driver data values.
5. Click **Run**, and select a format in which to display the report:
- PDF
  - EXCEL
  - WORD
  - XML
  - HTML

 **Note:**

When reviewing Rule Data Validation reports:

- If *No Data* is displayed next to **Source Data Total**, it means that either the data is not loaded or the rule source isn't correctly defined to find the data.
- If *No Data* is displayed next to **Driver Data Total**, it means that either the data is not loaded or driver definition is incorrectly defined.
- If either source or driver data cannot be found, the rule will not produce any results.

In the sample reports below, a driver of "Occupancy Square Feet" is used to determine how much Rent and Utilities charges to allocate. The Source Data Total (the total amount of money in all of the source intersections combined) came to \$8,420,000, and the Driver Data Total (the total square feet for all for all of the destinations defined by the allocation rule) came to 18,500 square feet.

***Sample Rule Data Validation Report with Summary Values Only***



## Rule Data Validation Report

**Application** : BksML40  
**Point of View** : Years:Period:Scenario:Version  
                   FY21:Jan:Actual:Working  
**Rule Set Name** : Occupancy Expense Allocations  
**Rule Name** : Rent and Utilities Reassignment  
**Rule Type** : Allocation  
**Data Option** : Summary Values Only

**Source Data Total** : 8420000  
**Driver Data Total** : 18500

**Sample Rule Data Validation Report with Summary Values and a Data Sample for both Source Data and Driver Data**

### Rule Data Validation Report

**Application** : BksML40  
**Point of View** : Years:Period:Scenario:Version  
                   FY21:Jan:Actual:Working  
**Rule Set Name** : Occupancy Expense Allocations  
**Rule Name** : Rent and Utilities Reassignment  
**Rule Type** : Allocation  
**Data Option** : Summary Values and Data Sample  
**Source Data** : Yes  
**Driver Data** : Yes

Source Data Total : 8420000  
 Driver Data Total : 18500

**Source Data**  
**Source Data Count** : 2  
**Context** : NoActivity : NoCustomer : NoProduct : NoDriver : FY21 : Jan : Actual : Working : PCM\_Remainder : PCM\_Rule

Cell Name	Value
<b>Account : Entity</b>	
FAC8100 : CC1001	6000000
FAC8200 : CC1001	2420000

**Driver Data**  
**Driver Data Count** : 13  
**Context** : NoActivity : NoCustomer : NoProduct : NoDriver : FY21 : Jan : Actual : Working : PCM\_Input : PCM\_NoRule

Cell Name	Value
<b>Account : Entity</b>	
STAT1101 : CC8200	300
STAT1101 : CC8300	600
STAT1101 : CC8400	1000
STAT1101 : CC7001	750
STAT1101 : CC6001	2000
STAT1101 : CC5001	500
STAT1101 : CC4100	2500
STAT1101 : CC4200	7500
STAT1101 : CC4300	1000
STAT1101 : CC4400	1000
STAT1101 : CC3100	150
STAT1101 : CC3200	750
STAT1101 : CC2001	450

## Using Ad Hoc to Analyze Allocation Rule Data

You can create an ad hoc grid to analyze a preconfigured data slice targeted for a specific rule's data elements.

To perform ad hoc analysis for a specific allocation rule:

1. From the Home page, select **Modeling**, and then **Designer**.
2. From the **Waterfall Setup** tab, select an allocation rule.
3. From the **Actions** menu, select **View Rule Data**, and then select an option to define what data element to include. For allocation rules, you can perform ad hoc analysis on these elements:
  - **Source**
  - **Destination**
  - **Driver Basis** (only available if you specified a driver location when you defined the rule)
  - **Offset** (only available if you specified an alternate location for the offset when you defined the rule)
4. The ad hoc grid opens in a new tab. See [Using Ad Hoc for Data Entry and Analysis](#) for details on how to work in the grid.

The following is an ad hoc grid displaying the destination data elements for the Rent and Utilities Reassignment allocation rule in the BKSML50 sample application that is provided with Enterprise Profitability and Cost Management. (See [Creating the Sample Application](#) for information on how to access the sample application.)

### *Ad Hoc Grid Showing the Destination Data for a Sample Rent and Utilities Reassignment Allocation Rule*

Years	Period	Scenario	Version	Driver	Future1	Future2	View	Activity	Customer	Product	Currency	Account
FY22	Jun	Actual	Working	NoDriver	NoFuture1	NoFuture2	Periodic	No Activity	No Customer	No Product	USD_Reporting	Facilities Expenses
					Allocation In							
					199459							
					998999							
					538999							
					22622							
					886486							
					332452							
					842562							

#### Note:

Before performing ad hoc analysis, the rule must be calculated and a POV defined. The current POV selected on the Rule Balancing page is the POV that is used to show the allocation rule data. See [Calculating Models](#) and [Viewing Rule Balancing Reports](#).

## Creating Custom Calculation Rules

### Related Topics

- [About Creating Custom Calculation Rules](#)

- [Creating a Custom Calculation Rule Definition](#)
- [Defining a Custom Calculation Rule Target](#)
- [Validating Custom Calculation Rules](#)
- [Using Ad Hoc to Analyze Custom Calculation Rule Data](#)

## About Creating Custom Calculation Rules

Custom calculation rules let you modify or create data in place. In a custom calculation rule, you define:

- The target range for the calculation
- The formula to execute for all cells in the target range

You can use custom calculation rules to:

- Calculate driver data
- Create what-if changes
- Adjust costs and revenues

### Design Considerations

When creating custom calculation rules, keep in mind the following:

- Member selections in the rule target really means "traverse these intersections"
- The target range defines the Level 0 intersections the rule will visit, executes the formula, and writes the result to the result member.
- The rule formula supports basic math functions
- CASE statements work, other MDX functions are not supported

### Best Practices

Custom calculation rules are very sensitive to sparse ranges. To prevent performance challenges:

- Minimize the target range as much as is practical.
- Use `NONEMPTYTUPLE` on one of the formula operand tuples preceding formula. See [Skipping Empty Tuples to Optimize Custom Calculations](#).

For example:

```
[PCM_Adjustment In]:= NONEMPTYTUPLE ([PCM_Input],[PCM_Rule])  
([PCM_Input],[PCM_Rule]) * .10;
```

### Custom Calculation Rule Example


In this example, the Entity and Account dimensions are specified for the target range for the calculation, and the formula will be executed for all cells in that range.

 **Note:**

The custom calculation rule in this example is used in the BksML50 sample application provided with Enterprise Profitability and Cost Management. See [Creating the Sample Application](#) for information on how to access the sample application.

## Creating a Custom Calculation Rule Definition

To create a custom calculation rule definition:

1. From the Home page, select **Modeling**, and then **Designer**.
2. On the **Waterfall Setup** tab, click the **Model** drop-down, and select a model.
3. Select the rule set to which you want to add the custom rule.
4. Click , and then select **Custom Calculation Rule**.
5. On the **Create Custom Calculation Rule** page, in the **Definition** tab, enter the following information:

- **Rule Name:** Enter a name for the rule.

For example, the "Occupancy Expense Allocations" rule set in the the BksML50 sample application provided with Enterprise Profitability and Cost Management, contains a custom rule called "Utilities Expense Adjustment".

Rule names have the same restrictions as the member names in Oracle Essbase. See [Naming Restrictions for Dimensions, Members, and Aliases](#).

- **Description:** Enter a description for the rule.

For example, you could say something like; "Increases utilities expenses by 10%"

The description you enter here will appear in the Model Documentation report. Enter a description that will make the information about the custom rule informative for anyone reviewing the model logic in the future. See [Generating a Model Documentation Report](#).

- **Sequence:** Enter a number to determine the order in which the rule will run in the rule set.

The Sequence can be any whole number from 1 to 9999.

Rules with the same sequence number will run at the same time if parallel calculation is enabled for the parent rule set, and depending on the number specified for **Calculation Threads** in the Applications Settings. (See "Step 5: Select a Rule Set Calculation Option" in [Creating a Rule Set](#) and "Calculation Threads" in [About Managing Application and System Settings](#).)

- **Enabled:** If selected, the rule will be active when the calculation is performed.
- **Use Rule Set Context:** If selected, the member selections done when the rule set was created will apply to this rule. If a Model Context has been enabled for the rule set, it will also be applied. See [Understanding Model and Rule Set Context](#).

## Defining a Custom Calculation Rule Target

Define the target range for the calculation and the formula to execute for all cells in the target range.

When you first access the **Target** tab, the required Entity and Account dimensions, the optional Currency dimension if you have a multicurrency application, and any custom dimensions in your application are displayed under **Target Dimensions**. (If you have defined and enabled a Rule Set Context or a Model Context, any dimensions defined in the Rule Set Context or a Model Context are not displayed. See [Understanding Model and Rule Set Context](#).)

To define a custom calculation rule target:

1. On the **Target** tab, click the drop down, and select a **Result Dimension**.
2. Enter the MDX formula for the custom calculation rule.

If you have a large formula, click **Expand** to expand the formula text box to a larger pop-up window. After you enter a formula, click **Validate** to ensure that the formula is valid.


See [Formula Syntax for Custom Calculation Rules](#) and [Skipping Empty Tuples to Optimize Custom Calculations](#) for information on how to create the formula.


3. Select a member or members for each target dimension.

You must select a member for every dimension. If a dimension does not apply to the data in your rule, select the No<dimname> member. See [Dimension and Member Requirements When Creating Rules](#).

### Note:


The dimension you selected for the **Result Dimension** is not included as a target dimension since a member from the result dimension must appear in the left hand (results side) of the formula.

To select members, expand a target dimension, click **Add Target**, and then click  to invoke the **Select Members** dialog box. See [Using the Member Selector](#).

If you have a large number of members to add to the target dimensions and you know the member names, instead of adding each member one-by-one from the **Select Members** dialog box, you can click  to the right of the **Target Dimensions** heading and enter the members in the **Dimension Member Editor**.

For example, if you have a list of members in an Excel spreadsheet, you can copy these members from Excel, and then paste them into the **Dimension Member Editor**. The members will be added to the dimensions in the target to which they were assigned when the dimensions were created. See [Adding Members to a Dimension](#).

 **Note:**

The members you enter in the **Dimension Member Editor** can be assigned to any applicable dimension in the target. To add multiple members to a specific dimension, click  next to the dimension.

You can also click  next to a dimension, and select one of the following options:

- **Add Multiple Target Members:** Accesses a dialog box where you can assign multiple members to the dimension at one time instead of having to individually select each member.
- **Clear <Dimname> Selections:** Clears all of the members you have selected for the target dimension.

To remove an individual member, click on the member, and then select **Remove<MemberName>**, where <MemberName> is the name of the member you are removing.

 **Note:**

See [Managing Filters for Target Members](#) for information on how to filter the target members used in a rule.

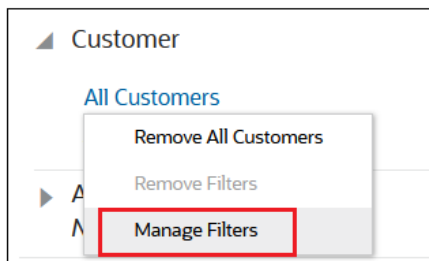
## Managing Filters for Target Members


When you select an upper level member for a target dimension in a custom calculation rule, all level 0 descendants of that member are included in the rule. If you do not want to include all the level 0 descendants in a rule, you can apply a filter to limit the included members.

For example, assume your member selection is All Customers, and All Customers has 1,000 level 0 descendants. Assume further that you want to include only the customers in Delivery Zone B in your rule. In this case, you could apply a filter to limit the level 0 descendants included in your rule to only customers in Delivery Zone B.

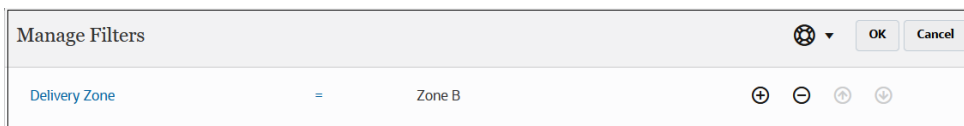
To add a filter to a member:

1. In the **Target** tab, click the desired member and select **Manage Filters**.

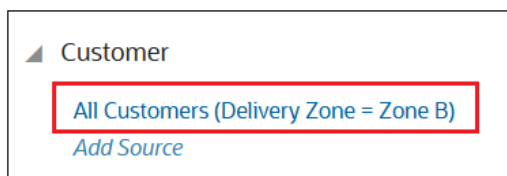


2. In the **Manage Filters** dialog box, click .
3. Enter the member name and a filter value.

In our example, we filtered the customers to Delivery Zone B.



You can add more than one filter. When you add a filter, it is shown next to the member.



 **Note:**

To remove a filter, click the member and select **Remove Filters**. If you have more than one filter, click the filter you want to remove.

## Formula Syntax for Custom Calculation Rules

This topic describes the syntax to use when creating custom calculation rules.

The syntax is summarized as follows:

- The basic formula format is Result equals Formula, where Result and Formula are separated by :=, so Result := Formula.
- The left side of the equation is the Result, a tuple that determines where custom calculated results are written.

 **Note:**

A tuple is a comma-separated list of members enclosed in parentheses.

The tuple is an MDX specification of one or more members where no two members are in the same dimension. Only member names are allowed in the tuple expression. Member functions are not supported for custom calculations. Dynamic and attribute members are not allowed in the Result. The Result must include a single member from the Result dimension. It must be Level 0 and may be part of a Level 0 tuple, such as ([STA1120], [Feb]). The Result dimension is defined in the **Target** tab of the **Custom Rule** page.

 **Note:**

MDX is a joint specification of the XML for Analysis founding members. For more information about allowable MDX syntax, see [Chapter 7, "MDX"](#), of the *Oracle Essbase Technical Reference*.

- The right side of the equation is the Formula, a simple MDX numeric value expression. It includes the other members, tuples, or constants at any level and the mathematical expression to perform. It must include at least one member from the Result dimension and may be Level 0, upper level, or a tuple.

 **Note:**

Members on either side of the equation must be enclosed in square brackets, [ ].

Tuples must be enclosed in parentheses, ( ).

The Formula expression must end in a semicolon, ;.

The Formula can use the following:

- **Constants:** [STAT1120] :=1;

 **Note:**

A constant can be a numeric constant such as 7. It can be an expression that references values from other members in the result dimension, and it can reference values expressed as member tuples.

- **A mathematical operation:** [STAT1114] := ([STAT1305], [Rule]) \* ([STAT1307], [Rule]);

 **Note:**

Mathematical operations must always include a Rule dimension member.

- Custom calculation rules support the following syntax formats for member names:
  - **No qualification:** Only the member name is provided.  
Example: [MemberName]



- **Full qualification:** The fully qualified name (FQN) for the member.  
Example: `[Dimension].[Gen2].[Gen3].[Gen4]...[MemberName]`
- Custom calculation rules support the following syntax for substitution variables:
  - The substitution variable name must be written inside square brackets ([]) and start with an &(ampersand) in the formula.  
Example Formula: `([Rule1],[PCM_Adjustment In]) := ([PCM_Input],[PCM_Rule],[&Prior_Year]) *.10;`
  - Do *not* use square brackets to enclose the substitution variable.  
Correct variable value: 2022  
Incorrect variable value: [2022]

**Note:**

For information about optimizing performance when defining custom calculation rules, see [Skipping Empty Tuples to Optimize Custom Calculations](#).

## Skipping Empty Tuples to Optimize Custom Calculations

Data sets can be very sparse and calculating empty result sets can noticeably degrade performance. To avoid calculating empty result sets, you can use the NONEMPTYTUPLE property clause in custom calculation formulas. Using NONEMPTYTUPLE restricts where the system attempts to calculate. To set this up, you define a tuple that will only be calculated if it isn't empty. Then, you define a simple numeric operation to be applied to the tuple.

### Syntax

The syntax for using NONEMPTYTUPLE is as follows:

```
tuple := NONEMPTYTUPLE (nonempty_member_list) numeric_value_expression;
```

Where:

- `tuple`: An MDX specification of one or more members, where no two members can be from the same dimension
- `NONEMPTYTUPLE`: An optional property you can use to optimize calculation performance. If used, then you must follow this literal property with `nonempty_member_list`.
- `nonempty_member_list`: One or more comma-separated member names from different dimensions. A tuple must be present in `numeric_value_expression`.
- `numeric_value_expression`: A simple MDX numeric value expression, such as a number or an arithmetic operation

The expression must be on the right side of the equation. You must use only arithmetic operators. An error is returned if you use non-arithmetic operators such as AND, OR, or IF.

**For example:**

```
[UnitCost] := NONEMPTYTUPLE ([TotalExpense], [NetBalance]) ([TotalExpense],
[NetBalance]) / ([Units], [CostPool]);
```

This example says the following:

1. Look at the tuple ([TotalExpense], [NetBalance]).
2. If that tuple, or intersection, is not empty (that is, it contains a real value), then perform the following operation:  
Take the tuple ([TotalExpense], [NetBalance]) and divide it by the tuple ([Units], [CostPool]) to yield UnitCost.
3. If the tuple is empty, skip it and evaluate the next instance.

### Rules for Use

A tuple is a combination of members from some set of different dimensions, for example:

```
([product2], [account5], customer3))
```

```
([myactivity], [yourdepartment])
```

The requirements for adding NONEMPTYTUPLE to the formula of Profitability and Cost Management custom calculation rules are as follows, where A, B, and C represent tuples:

- You can use NONEMPTYTUPLE only when a tuple has some value. Otherwise, the result could be unexpected. Suppose the following:
  - $A=B+C$  -- You can't use NONEMPTYTUPLE on either B or C. If B or C is missing, the result will be None, which is incorrect.

#### Note:

To calculate  $A=B+C$  using NONEMPTYTUPLE, use two rules:

- \* Rule 1:  $A=A+B$  with NONEMPTYTUPLE on B
- \* Rule 2:  $A=A+C$  (or  $A=A-C$ ) with NONEMPTYTUPLE on C

In this case, whenever the value for B is *not* missing, it will be added to A; and whenever the value for C is *not* missing, it will be added to A.

- $A=B-C$  -- You can't use NONEMPTYTUPLE on either B or C. If B or C is missing, the result will be None, which is incorrect (unless you use two rules as described previously).
- You can use NONEMPTYTUPLE when the result is the same whether the tuple is missing or not. Suppose the following:
  - $A=B$  -- You can use NONEMPTYTUPLE on B.
  - $A=B*C$  -- You can use NONEMPTYTUPLE on either B or C.
  - $A=B/C$  -- You can use NONEMPTYTUPLE on either B or C.

To summarize, you can safely use NONEMPTYTUPLE in multiplication or division operations. For addition or subtraction, you must evaluate its use for each separate case to avoid unexpected results.

 **Note:**

For information on writing custom calculation rules, see [Formula Syntax for Custom Calculation Rules](#). For information on enabling non-empty tuples, see "How do you enable Non-Empty Tuples (NET) in Enterprise Profitability and Cost Management?" in [Frequently Asked Questions \(FAQ\) about Enterprise Profitability and Cost Management](#).

## Validating Custom Calculation Rules

When you access the **Validation** tab, any errors or warnings in your custom calculation rules are displayed. The validation checks each rule for these conditions:

- The rule is fully defined  
This means that the target definitions for each rule must include members for every dimension.
- Dimension members referenced in your rule definitions exist in the database  
If you delete members from dimensions that are referenced in existing rules, the rules cannot run.

If you have several validation errors or warnings, click **Export to Excel**. You can use the Excel spreadsheet as a checklist as you go back to the **Target** tab to fix the errors and warnings.

Continue fixing any errors in your rules until there are no errors listed on the **Validation** tab.

 **Note:**

See [Validation Errors and Warnings](#) for details on the errors and warnings that may occur when validating your custom calculation rules.

## Using Ad Hoc to Analyze Custom Calculation Rule Data

You can create an ad hoc grid to analyze a preconfigured data slice targeted for a specific rule's data elements.

To perform ad hoc analysis for a specific custom calculation rule:

1. From the Home page, select **Modeling**, and then **Designer**.
2. From the **Waterfall Setup** tab, select a custom calculation rule.
3. From the **Actions** menu, select **View Rule Data**, and then select **Target**.

**Note:** You can only select **Target** as a data element for Custom Calculation rules. The other options on the drop-down menu are for Allocation rules.

4. The ad hoc grid opens in a new tab. See [Using Ad Hoc for Data Entry and Analysis](#) for details on how to work in the grid.

The following is an ad hoc grid displaying the target data for Utilities Expense Adjustment custom calculation rule in the BKSML50 sample application that is provided with Enterprise Profitability and Cost Management. (See [Creating the Sample Application](#) for information on how to access the sample application.)

### **Ad Hoc Grid Showing the Target Data for a Sample Utilites Expense Adjustement Custom Calculation Rule**

Years	Period	Scenario	Version	Driver	Future1	Future2	View	Activity	Customer	Product	Currency	Account	Entry
FY22	Feb	Actual	Working	NoDriver	NoFuture1	NoFuture2	Periodic	No Activity	No Customer	No Product	USD_Reporting	Utilities	Corporate
Adjustment In													
Utilities Expense Adjustment													
200000													

#### Note:

Before performing ad hoc analysis, the rule must be calculated and a POV defined. The current POV selected on the Rule Balancing page is the POV that is used to show the Custom Calculation rule data. See [Calculating Models](#) and [Viewing Rule Balancing Reports](#).

## Creating Rule Sets

### Related Topics

- [About Rule Sets](#)
- [Rule Set Design Best Practices](#)
- [Creating a Rule Set](#)

## About Rule Sets

Rule sets enable you to group related rules together to better organize calculation logic definitions, to calculate similar rules together, and to simplify the definition of rules that share common dimension members.

Rule sets have a set order, determined by the rule set sequence number, and may also contain options specific to the execution of rules within the rule set.

You must create a rule set before creating rules.

The following are some examples of rule sets in the BksML50 sample application provided with Enterprise Profitability and Cost Management:

- Occupancy Expense Allocations
- Manufacturing COGs Related Expense Assignment
- Activity Costing
- Customer Product Region Profitability Calculation

## Rule Set Design Best Practices

Calculation options at the rule set level are Serial, Parallel, and Iterative.

Best practices for Parallel rule sets:


- Designing rules that are independent of each others' source and destination targets allows you to use parallel calculation.
- Because parallel calculation has diminishing returns, more than five concurrent threads generally does not improve performance.

Best practices for Iterative rule sets:

- Iterative rule sets are only useful for solving reciprocal allocation systems.
- Ensure that each rule has a portion of the destination range that exits the reciprocal system.
- Experiment with the number of iterations.
- Create a no reciprocal sweep rule for each rule in the reciprocal system to sweep out any remainders.

## Creating a Rule Set


To create a rule set:

1. From the Home page, select **Modeling**, and then **Designer**.
2. On the **Waterfall Setup** tab, click the **Model** drop-down, and select a model.
3. Click , and select **Rule Set**.
4. In the **Definition** tab, enter information about the rule set:
  - **Rule Set:** Enter a name for the rule set.  
For example, the BksML50 sample application provided with Enterprise Profitability and Cost Management has a rule set called "Occupancy Expense Allocations".
  - **Description:** Enter a description for the rule set.  
The description you enter here will appear in the Model Documentation report. Enter a description that will make the information about the rule set informative for anyone reviewing the model logic in the future. See [Generating a Model Documentation Report](#).  
For example, a description for an Occupancy Expense Allocations rule set could be: "Occupancy expenses are reassigned from cost centers where the expenses are paid to the cost centers that use the facilities. A Rule Set Context is defined for Activity, Product, Customer, and Region dimensions to select the No<dimname> members as the dimensions are not used in these rules."
  - **Sequence:** Enter a number to determine the order in which the rule set will run. The sequence also determines the order in which the rule set is displayed on the **Waterfall Setup** tab. The sequence can be any whole number from 1 to 9999.
  - **Enabled:** If selected, the rule set will be active when the calculation is performed.
  - **Use Model Context:** If selected, the member selections done during model creation will apply to all the rules in the rule set. When you use a model context, you avoid having to select the same members for every rule, which

saves time and ensures consistency. See [Understanding Model and Rule Set Context](#).

5. Select a **Rule Set Calculation** option:
  - **Serial Calculation:** Runs all rules in the rule set sequentially, depending on their sequence number.
  - **Parallel Calculation:** Runs rules with the same sequence number at the same time. The number of rules that can be executed in parallel is defined in the **Calculation Threads** setting in **Application Settings**. See [About Managing Application and System Settings](#).
  - **Iterative Calculation:** Runs the rule set multiple times in sequence. If you select this option, enter the number of iterations to run. Iterative Calculations are used to resolve the impact of reciprocal allocation relationships in a model.
6. **Optional:** In the **Member Selections** tab, create a **Rule Set Context** to define members for dimensions that will apply to all rules in the rule set. Defining default member selections saves you from having to select the members for a dimension each time the dimension is used in a rule. You can make default member selections for dimensions that are used in defining the source and destination in allocation rules or the target in custom rules. See [Understanding Model and Rule Set Context](#).

To define default member selections for the dimensions in a rule set:

- a. Click the **Add Dimensions** drop-down, and select a dimension.
- b. Click **Select Member**, and then click .
- c. In the **Select Members** dialog box, select the member that you want to assign to the dimension, and then click **OK**.



When making default member selections for a Rule Set Context, you can select only level 0 members. See [Using the Member Selector](#) for more information about using the **Select Members** dialog box.

7. Click **Save and Close**.

## Creating Multiple Rules

Use the **Rules** page to create multiple rules at once. This is useful when you need to create a large number of rules in a rule set. You can create the initial outline of the rules, and then come back later and fill in the details for each rule. This can save you time and help you manage your models more efficiently.

To create multiple rules:

1. From the Home page, select **Modeling**, and then **Designer**.
2. On the **Waterfall Setup** tab, click the **Model** drop-down, and select a model.
3. Select the rule set to which you want to add the rules.
4. Click , and then select **Multiple Rules**.
5. On the **Rules** page, click  to add a new rule, and then enter the following information:
  - **Name:** Enter a name for the rule.

For example, the "Occupancy Expense Allocations" rule set in the the BksML50 sample application provided with Enterprise Profitability and Cost Management, contains an allocation rule called "Rent and Utilities Reassignment" .

Rule names have the same restrictions as the member names in Oracle Essbase. See [Naming Restrictions for Dimensions, Members, and Aliases](#).

- **Rule Type:** Select **Allocation** or **Custom Calculation**.

**Allocation** rules define the source and destination of allocated data, which drivers are used to allocate the data, and where offsets are placed to balance accounts. See [About Creating Allocation Rules](#).

**Custom Calculation** rules contain formulas in an Essbase MDX format and are primarily used for adjusting data or creating driver values used in subsequent allocation rules. See [About Creating Custom Calculation Rules](#).

- **Sequence:** Enter a number to determine the order in which the rule will run in the rule set. The sequence also determines the order in which the rule is displayed under the rule set on the **Waterfall Setup** tab.

The Sequence can be any whole number from 1 to 9999.

Rules with the same sequence number will run at the same time if parallel calculation is enabled for the parent rule set, and the number specified for **Calculation Threads** in the Applications Settings. (See "Step 5: Select a Rule Set Calculation Option" in [Creating a Rule Set](#), and "Calculation Threads" in [About Managing Application and System Settings](#).)


- **Enabled:** If selected, the rule will be active when the calculation is performed.
- **Use Rule Set Context:** If selected, the member selections done when the rule set was created will apply to this rule. If a Model Context has been enabled for the rule set, it will also be applied. See [Understanding Model and Rule Set Context](#).
- **Description:** Enter a description for the rule.

Enter a description that will make the information about the allocation rule informative for anyone reviewing the model logic in the future.

For example, you could say something like; "Rent and Utility expenses are reassigned from the Corporate cost center to the business function cost centers. A driver based on the square feet of each building used by each cost center is used to apportion the expenses."

The description you enter here will appear in the Model Documentation report. See [Generating a Model Documentation Report](#).

6. Add as many rules as desired, and then click **Save**.
7. Click **OK** in the **Express Edit Rules Status** dialog box to return to the Rule Designer.

After you add rules, they are displayed under the rule set in the Rule Designer. You can then select each individual rule and click  (Edit) to add detailed information about the rule.

**Note:**

If you reopen the **Rules** page to add additional rules or to make changes to rule information, you cannot edit the selections for **Rule Type** or **Rule Set Context** on previously-created rules.


## Creating Multiple Rule Sets

Use the **Rule Sets** page to create multiple rule sets at once. This is useful when you need to create a large number of rule sets in a model. You can create the initial outline of the rule sets, and then later come back to define the specific details for each rule set. This can save you time and help you manage your models more efficiently.

To create multiple rule sets:

1. From the Home page, select **Modeling**, and then **Designer**.
2. On the **Waterfall Setup** tab, click the **Model** drop-down, and select a model.
3. Click **+**, and select **Multiple Rule Sets**.
4. On the **Rule Sets** page, click **+** to add a new rule set, and then enter the following information:
  - **Name:** Enter a name for the rule set.  
For example, the BksML50 sample application provided with Enterprise Profitability and Cost Management has a rule set called "Occupancy Expense Allocations".
  - **Sequence:** Enter a number to determine the order in which the rule set will run. The sequence also determines the order in which the rule set is displayed on the **Waterfall Setup** tab. The sequence can be any whole number from 1 to 9999.
  - **Enabled:** If selected, the rule set will be active when the calculation is performed.
  - **Use Model Context:** If selected, the member selections done during model creation will apply to all the rules in the rule set. When you use a model context, you avoid having to select the same members for every rule, which saves time and ensures consistency. See [Understanding Model and Rule Set Context](#).
  - **Description:** Enter a description for the rule set.  
Enter a description that will make the information about the rule set informative for anyone reviewing the model logic in the future.  
For example, a description for an Occupancy Expense Allocations rule set could be: "Occupancy expenses are reassigned from cost centers where the expenses are paid to the cost centers that use the facilities. A Rule Set Context is defined for Activity, Product, Customer, and Region dimensions to select the No<dimname> members as the dimensions are not used in these rules."  
The description you enter here will appear in the Model Documentation report. See [Generating a Model Documentation Report](#).
5. Add as many rule sets as desired, and then click **Save**.
6. Click **OK** in the **Express Edit Rule Sets Status** dialog box to return to the Rule Designer.



When you add a new rule set, it is displayed with the existing rule sets on the **Waterfall Setup** page. You can then select the rule set and click  (Edit) to add more detailed information about the rule set.

**Note:**

If you reopen the **Rule Sets** page to add additional rule sets or to make changes to rule set information, you cannot edit the selection for **Use Model Context** on previously-created rule sets.

## Using the Rule Designer

**Related Topics**

- [About the Rule Designer](#)
- [Using the Waterfall Setup Tab](#)
- [Using the Mass Edit Tab](#)

## About the Rule Designer

Use the Rule Designer to create and manage rules and rule sets.

To access the Rule Designer:

1. From the Home page, select **Modeling**, and then **Designer**.
2. Once you are in the Rule Designer, you can:
  - Use the **Waterfall Setup** tab to create, edit, delete, and copy rule sets and rules. The Waterfall Setup tab shows the full sequence of rule sets and rules for the model. See [Using the Waterfall Setup Tab](#).
  - Use the **Mass Edit** tab to add and replace members, copy rules to rule sets and models, and enable and disable rules. See [Using the Mass Edit Tab](#).

## Using the Waterfall Setup Tab

The **Waterfall Setup** tab in the Rule Designer shows the full sequence of rule sets and rules for the selected model. The sequence manages the order in which the rule set and rules are run. When you select a rule set or rule, information about it is displayed on the right side of the page.

The screenshot shows the Oracle Rule Designer interface. At the top, there is a search bar and a model dropdown set to '10 Actuals Allocation Process'. Below this is a toolbar with icons for adding, editing, deleting, and refreshing, along with an 'Actions' dropdown. The main area is split into two panes. The left pane shows a tree view of various allocation rules, with 'Rent and Utilities Reassignment' highlighted. The right pane displays the details for the selected rule, including a description: 'Rent and Utility expenses are reassigned from the Corporate cost center to the business function cost centers. A driver based on the square feet of each building used by each cost center is used to apportion the expenses.' Other details include Rule Sequence (2), Enabled (Yes), Use Rule Set Context (Yes), Rule Type (Allocation), Created By (epm\_default\_cloud\_admin), Creation Date (May 5, 2023 6:21 PM), Updated By (epm\_default\_cloud\_admin), and Last Updated Date (June 15, 2023 4:31 PM). At the bottom of the left pane, there are buttons for 'Waterfall Setup' and 'Mass Edit'.


Tasks that you can complete on the **Waterfall Setup** tab include::

- [Creating Allocation Rules](#)
- [Creating Custom Calculation Rules](#)
- [Creating a Rule Set](#)
- [Creating Multiple Rules](#)
- [Creating Multiple Rule Sets](#)
- [Editing a Rule or Rule Set](#)
- [Viewing Rule Definitions](#)
- [Deleting a Rule or Rule Set](#)
- [Copying a Rule or Rule Set](#)
- [Running a Rule Data Validation Report for Allocation Rules](#)

To refresh the rule sets and rules displayed on the **Waterfall Setup** tab, click .

## Editing a Rule or Rule Set

To edit a rule or rule set:

1. From the Home page, select **Modeling**, and then **Designer**.
2. On the **Waterfall Setup** tab, select a rule or rule set.
3. Click  (Edit icon).
4. Change the desired rule or rule set details, and then click **Save and Close**.


### Tip:

If you change a rule name, see [Renaming Rules](#) for points to consider when renaming a rule.

## Copying a Rule or Rule Set

When you copy a rule or rule set, all of the information in the source rule or rule set is copied to the new rule or rule set. In the case of a rule set, you can select whether to copy all the rules in the source rule set into the new rule set.


To copy a rule:

1. From the Home page, select **Modeling**, and then **Designer**.
2. On the **Waterfall Setup** tab, select a rule.
3. Click  (Copy icon).
4. In the **Copy Rule** dialog box, enter a name for the new rule.


 **Note:**

The name for the copied rule must be unique. You cannot have two rules with the same name in a model.

5. Click **OK**.

The copied rule is displayed under its associated rule set. The new rule is initially created with the same sequence number as the source rule. To change the sequence (the order in which the rule will run), select the copied rule, and click  (Edit icon).

To copy a rule set:

1. From the Home page, select **Modeling**, and then **Designer**.
2. On the **Waterfall Setup** tab, select a rule set.
3. Click  (Copy icon).
4. In the **Copy Rule Set** dialog box, specify the following information:
  - **New Rule Set Name:** Enter a name for the new rule set.

 **Note:**


The name for the copied rule set must be unique. You cannot have two rule sets with the same name in a model.

- **Copy rules:** Select to copy all the rules in the source rule set into the new rule set.
- **Prefix for Rule Name:** If you selected to copy rules, enter a prefix to use for the new rule names that will be created as part of the copy operation.

 **Note:**

Since you cannot have rules with the same name in a single model, the prefix is to ensure that each copied rule has a unique name.

**5. Click **OK**.**


The copied rule set is displayed under the existing rule sets. The new rule set is initially created with the same sequence number as the source rule set. To change the sequence (the order in which the rule set will run), select the new rule set, and click  (Edit icon).

## Deleting a Rule or Rule Set

 **Note:**

- When you delete a rule from the **Waterfall Setup** tab in the Rule Designer, the rule member assigned to that rule is *not* also deleted. You delete rule members on the **Edit Member Properties** page accessed from the **Application, Dimensions** tab. See [Deleting Members](#),
- Deleting a rule does not delete the associated rule member in Oracle Essbase.

To delete a rule or rule set:

1. From the Home page, select **Modeling**, and then **Designer**.
2. On the **Waterfall Setup** tab, select the rule or rule set that you want to delete.
3. Click  (Delete icon).
4. Click **OK** to confirm that you want to delete the rule or rule set.

## Using the Mass Edit Tab

Use the **Mass Edit** tab to make edits to multiple rules at once. This is useful if you have a large number of rules and you know that a change you are making will impact many of your rules.

For example, assume that you have a model that has a large number of rules, and you want to add a member to all the rules in all the rule sets in the model. Instead of editing each rule individually on the **Waterfall Setup** tab, you can filter and select rules on the **Mass Edit** tab, and then add the member to all the selected rules at once.

Name	Rule Type	Sequence	Rule Set	Created By	Modified By
Utilities Expense Adjustment Increases Utilities Expenses by 10%.	Custom Calculation	1	Occupancy Expense Allocations	epm_default_cloud_admin March 21, 2022 5:28 PM	epm_default_cloud_admin April 1, 2022 1:57 PM
Rent and Utilities Reassignment Rent and Utility expenses are reassigned from the Corporate cost center to th...	Allocation	2	Occupancy Expense Allocations	epm_default_cloud_admin March 21, 2022 5:28 PM	epm_default_cloud_admin April 1, 2022 1:54 PM
Product Material Allocation Allocates cost of materials to products in the Bike family. A special driver me...	Allocation	1	Manufacturing COGs Related Expense Assignment	epm_default_cloud_admin March 21, 2022 5:28 PM	epm_default_cloud_admin April 1, 2022 1:54 PM
Activity Costing Assignments Assigns operating expenses for each functional cost center to Business Susta...	Allocation	1	Activity Costing	epm_default_cloud_admin March 21, 2022 5:28 PM	epm_default_cloud_admin April 1, 2022 1:54 PM
Executive Office Support Activity Charge Out HQ Operating expenses are charged to all managed cost centers, excluding ...	Allocation	1	Support Activity Reciprocal Assignments and Charge Out to Direct Cost Centers	epm_default_cloud_admin March 21, 2022 5:28 PM	epm_default_cloud_admin April 1, 2022 1:54 PM
Facilities Support Activity Charge Out Facilities Operating expenses are charged to all consuming cost centers, incl...	Allocation	2	Support Activity Reciprocal Assignments and Charge Out to Direct Cost Centers	epm_default_cloud_admin March 21, 2022 5:28 PM	epm_default_cloud_admin April 1, 2022 1:54 PM
Finance Support Activity Charge Out Finance Operating expenses are charged to all consuming cost centers, inclu...	Allocation	3	Support Activity Reciprocal Assignments and Charge Out to Direct Cost Centers	epm_default_cloud_admin March 21, 2022 5:28 PM	epm_default_cloud_admin April 1, 2022 1:54 PM
HR Support Activity Charge Out HR Operating expenses are charged to all consuming cost centers, including ...	Allocation	4	Support Activity Reciprocal Assignments and Charge Out to Direct Cost Centers	epm_default_cloud_admin March 21, 2022 5:28 PM	epm_default_cloud_admin April 1, 2022 1:54 PM
IT Support Activity Charge Out IT Operating expenses are charged to all consuming cost centers, including l...	Allocation	5	Support Activity Reciprocal Assignments and Charge Out to Direct Cost Centers	epm_default_cloud_admin March 21, 2022 5:28 PM	epm_default_cloud_admin April 1, 2022 1:54 PM
Marketing Activity Assignment	Allocation	1	Product Sustaining Activity Charge Out	epm_default_cloud_admin	epm_default_cloud_admin

Edits that you can make include:

- [Adding Members to Rules](#)
- [Replacing Members in Rules](#)
- [Copying Rules to a Rule Set](#)
- [Copying Rules to a Model](#)
- [Enabling and Disabling Rules](#)

Edits that you make to your rules on the **Mass Edit** tab are displayed as jobs in the **Jobs** console. See [Viewing Rules Jobs](#).



#### Note:

Edits made on the **Mass Edit** tab cannot be undone. Use the migration tools for backups if necessary. To access the migration tools, from the Home page, select **Tools**, and then **Migration**. See [Using Migration](#).



#### Tip:

From the **Mass Edit** tab, you can also view the complete rule definition for a rule. See [Viewing Rule Definitions](#).


## Filtering Which Rules Are Displayed

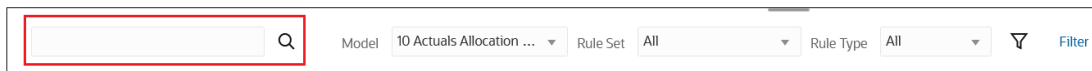
You can use the following filtering options to filter the rules displayed on the **Mass Edit** tab:

- Search term in the rule name or description
- Model
- Rule Set
- Rule Type
- Custom Filter

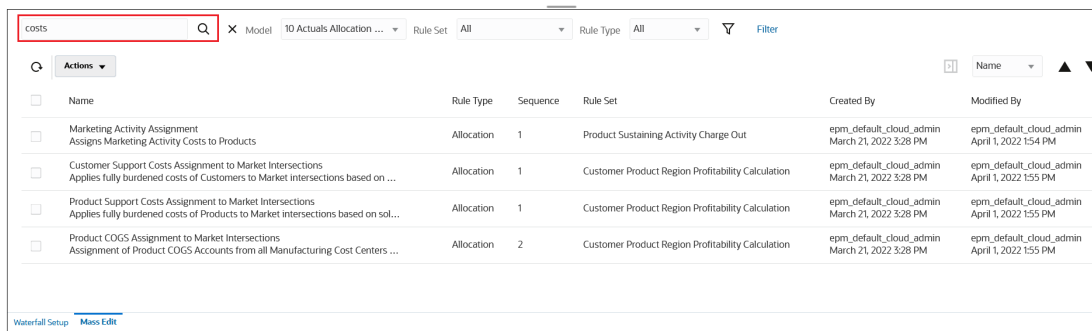
You can use as few or as many filters as you want.

## Using a Search Term to Find Rules

To search for a rule or rules, enter all or part of a rule name or description in the Search field, and click .



For example, entering "costs" in the Search field displays all the rules with "costs" somewhere in the rule name or description.

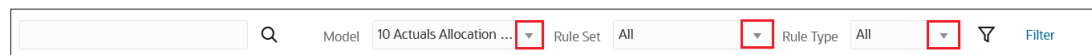


Name	Rule Type	Sequence	Rule Set	Created By	Modified By
Marketing Activity Assignment Assigns Marketing Activity Costs to Products	Allocation	1	Product Sustaining Activity Charge Out	epm_default_cloud_admin March 21, 2022 3:28 PM	epm_default_cloud_admin April 1, 2022 1:54 PM
Customer Support Costs Assignment to Market Intersections Applies fully burdened costs of Customers to Market Intersections based on ...	Allocation	1	Customer Product Region Profitability Calculation	epm_default_cloud_admin March 21, 2022 3:28 PM	epm_default_cloud_admin April 1, 2022 1:55 PM
Product Support Costs Assignment to Market Intersections Applies fully burdened costs of Products to Market Intersections based on sol...	Allocation	1	Customer Product Region Profitability Calculation	epm_default_cloud_admin March 21, 2022 3:28 PM	epm_default_cloud_admin April 1, 2022 1:55 PM
Product COGS Assignment to Market Intersections Assignment of Product COGS Accounts from all Manufacturing Cost Centers ...	Allocation	2	Customer Product Region Profitability Calculation	epm_default_cloud_admin March 21, 2022 3:28 PM	epm_default_cloud_admin April 1, 2022 1:55 PM

To remove the search filter, click .

## Filtering by Model, Rule Set, or Rule Type

To filter by **Model**, **Rule Set**, or **Rule Type**, click the drop-down next to each of these to select your filter options.

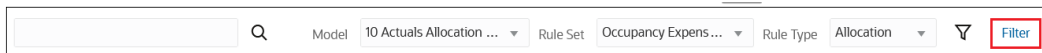


## Setting a Custom Filter

A custom filter helps you identify all the rules that reference a specific dimension member within a specific rule component.

To set a custom filter:

1. Click **Filter**.




2. Enter the filter criteria in the **Custom Filter** dialog box:

- **Dimension:** Select the dimension on which you want to filter.
- **Rule Component:** Select whether to filter by the **Source**, **Destination**, **Target**, **Driver Basis** or **Offset**. See [Defining an Allocation Rule Driver](#) and [Defining an Allocation Rule Offset](#).


### Note:

If you selected a Years, Period, Scenario, or Version POV dimension, only **Driver Basis** and **Offset** are available to select for the Rule Component.

- **Operator:** Select **Contains** or **Does Not Contain**, and then select a member in the **Find Member** field.
  - **Find Member:** Define the member on which to search. Either type in the member, or click  and select a member from the **Select Members** dialog box. See [Using the Member Selector](#).
3. Click **OK**.
- To remove the custom filter, click the filter, and then click **Remove**.

## Adding Members to Rules

To add members to one or more rules:

1. From the Home page, select **Modeling**, and then **Designer**.
2. Select the **Mass Edit** tab.
3. Make selections for **Model**, **Rule Set**, and **Rule Type**.
4. **Optional:** Further refine the rules displayed by searching for and filtering rules. See [Filtering Which Rules Are Displayed](#).
5. Select the rules for which you want to add members, or select the checkbox by **Name** to select all the rules displayed on the **Mass Edit** tab after any filters have been applied.
6. Select **Actions**, and then **Add Member**.
7. In the **Add Member** dialog box, enter the following information:
  - **Dimension:** Select the dimension for which you would like to add a member.
  - **Member:** Enter the member to add. Either type in the member name, or click  and select a member from the **Select Members** dialog box. See [Using the Member Selector](#).  
  
You can add more than one member. The members you add are displayed below the **Member** field.
  - **Rule Component:** Select the rule component to which you would like to add a member.  
  
Source, Destination, Driver Basis, and Offset apply to Allocation rules, and Target applies to Custom rules.
  - **Job Comment:** Enter a note or comment about the job that will be displayed in the **Job Details** accessed from the **Jobs** console.
8. Click **OK** in the **Information** window that is displayed letting you know that the job to add a member has been submitted successfully.
9. **Optional:** Go to the **Jobs** console and verify that the member or members were successfully added.  
  
The job is displayed in the **Jobs** console with a "Completed" or "Completed with Errors" status. You can select the job to see details about the job and troubleshoot any errors that may have occurred. See [Viewing Rules Jobs](#).

## Replacing Members in Rules

You can find and replace members in one or more rules. As you are finding and replacing members, you can specify a specific member to replace, or you can specify the member for a dimension in the destination to be the same as the member selected for a dimension in the source.


You specify member replacement in the **Find and Replace** dialog box. Complete these steps:

1. From the Home page, select **Modeling**, and then **Designer**.
2. Select the **Mass Edit** tab.
3. Make selections for **Model**, **Rule Set**, and **Rule Type**.
4. **Optional:** Further refine the rules displayed by searching for and filtering rules. See [Filtering Which Rules Are Displayed](#).
5. Select the rules for which you want to replace members, or select the checkbox by **Name** to select all the rules displayed on the **Mass Edit** tab after any filters have been applied.
6. Select **Actions**, and then **Replace Member**.
7. Select an option:
  - **Replace Member:** See [Specifying a Specific Member to Replace](#)
  - **Change to Same as Source:** See [Specifying the Replacement Member to be the Same as Source](#)
8. Click **OK** in the **Information** window that is displayed letting you know that the Rules Replace Member job has been submitted successfully.
9. **Optional:** Go to the **Jobs** console and verify that the members were successfully replaced.

The job is displayed in the **Jobs** console with a "Completed" or "Completed with Errors" status. You can select the job to see details about the job and troubleshoot any errors that may have occurred. See [Viewing Rules Jobs](#).

### Specifying a Specific Member to Replace


To find and replace a member in one or more rules, enter the following information in the **Find and Replace** dialog box:

- **Dimension:** Select the dimension for which you would like to replace a member.
- Select **Replace Member**.
- **Find Member:** Enter the member to find. Either type in the member name, or click  and select a member from the **Select Members** dialog box. See [Using the Member Selector](#).



 **Tip:**

If you delete a member that was used in multiple rules, you can enter the deleted member in the **Find Member** field, and then use the **Replace Member** field to replace that member reference with another member selected from the dimension hierarchy.

- **Replace Member:** Enter the replacement member. Either type in the member name, or click  and select a member from the **Select Members** dialog box. See [Using the Member Selector](#).
- **Rule Component:** Select the rule component to which you would like to add a member.  
Source, Destination, Driver Basis, and Offset apply to Allocation rules, and Target applies to Custom rules.
- **Preserve Filters:** If selected, any filters defined on the **Mass Edit** tab are applied to the replaced member. (See [Filtering Which Rules Are Displayed](#).)
- **Job Comment:** Enter a note or comment about the job that will be displayed in the **Job Details** accessed from the **Jobs** console.

### Specifying the Replacment Member to be the Same as Source

To replace member selections for a rule destination dimension to be the same as the member selection in the source, enter the following information in the **Find and Replace** dialog box:

- **Dimension:** Select the dimension for which you would like to replace a member.
- Select **Change to Same as Source**.
- **Rule Component:** "Destination" is automatically selected as the rule component.
- **Job Comment:** Enter a note or comment about the job that will be displayed in the **Job Details** accessed from the **Jobs** console.

 **Note:**

When you select **Change to Same as Source** for a dimension, any existing destination member selections for that dimension are removed for all rules on the **Mass Edit** tab.

 **Note:**

For information on setting the destination to Same as Source when defining an allocation destination, see [Setting the Destination to Same As Source](#).

## Copying Rules to a Rule Set

This feature is useful if you need to include identical or similar rules in several rule sets. You can copy the rule with a slightly different name and leave it unchanged or modify it. You can select multiple rules to copy to a rule set.

 **Note:**

If a rule uses a Rule Set Context and the rule has dimension members that conflict with members in the target rule set, the rule is not copied, and an error is displayed in the Job Details log.

To copy rules to a rule set:

1. From the Home page, select **Modeling**, and then **Designer**.
2. Select the **Mass Edit** tab.
3. Make selections for **Model**, **Rule Set**, and **Rule Type**.
4. **Optional:** Further refine the rules displayed by searching for and filtering rules. See [Filtering Which Rules Are Displayed](#).
5. Select the desired rules, or select the checkbox by **Name** to select all the rules displayed on the **Mass Edit** tab after any filters have been applied.
6. Select **Actions**, and then **Copy Rules to Rule Set**.
7. In the **Copy Rules to Rule Set** dialog box, enter the following information:
  - **Rule Set:** Select the rule set to which you want to copy the rules.
  - **Job Comment:** Enter a note or comment about the job that will be displayed in the **Job Details** accessed from the **Jobs** console.

 **Note:**

To keep rule names unique in the model, a number is added to the end of rule names as they are copied.

8. Click **OK** in the **Information** window that is displayed letting you know that the job to copy rules to a rule set has been submitted successfully.
9. **Optional:** Go to the **Jobs** console and verify that the rules were successfully copied. The job is displayed in the **Jobs** console with a "Completed" or "Completed with Errors" status. You can select the job to see details about the job and troubleshoot any errors that may have occurred. See [Viewing Rules Jobs](#).

## Copying Rules to a Model

This feature is useful if you are creating a new model and want to include identical or similar rules from an existing model in the new model. You can select multiple rules to copy to a model.

 **Note:**

If a rule uses a Model Context and the rule has dimension members that conflict with members in the target model, the rule is not copied, and an error displays in the Job Details log.

To copy rules to a model:

1. From the Home page, select **Modeling**, and then **Designer**.
2. Select the **Mass Edit** tab.
3. Make selections for **Model**, **Rule Set**, and **Rule Type**.
4. **Optional:** Further refine the rules displayed by searching for and filtering rules. See [Filtering Which Rules Are Displayed](#).
5. Select the desired rules, or select the checkbox by **Name** to select all the rules displayed on the **Mass Edit** tab after any filters have been applied.
6. Select **Actions**, and then **Copy Rules to Model**.
7. In the **Copy Rules to Model** dialog box, enter the following information:
  - **Model:** Select the model to which you want to copy the rules.
  - **Overwrite:** Select to indicate that if a rule with the same name is already in the target model, then it will be overwritten by the rule being copied using its definition.
  - **Job Comment:** Enter a note or comment about the job that will be displayed in the **Job Details** accessed from the **Jobs** console.
8. Click **OK** in the **Information** window that is displayed letting you know that the job to copy rules to a model has been submitted successfully.
9. **Optional:** Go to the **Jobs** console and verify that the rules were successfully copied.

The job is displayed in the **Jobs** console with a "Completed" or "Completed with Errors" status. You can select the job to see details about the job and troubleshoot any errors that may have occurred. See [Viewing Rules Jobs](#).

## Enabling and Disabling Rules

You can enable or disable multiple rules at one time. This feature is useful if you need to enable a number of rules at once, or make other changes that will affect the validity of enabled rules.

To enable or disable rules:

1. From the Home page, select **Modeling**, and then **Designer**.
2. Select the **Mass Edit** tab.
3. Make selections for **Model**, **Rule Set**, and **Rule Type**.
4. **Optional:** Further refine the rules displayed by searching for and filtering rules. See [Filtering Which Rules Are Displayed](#).

5. Select the rules that you want to enable or disable, or select the checkbox by **Name** to select all the rules displayed on the **Mass Edit** tab after any filters have been applied.
6. Select **Actions**, and then **Enable Rules** or **Disable Rules**.
7. Click **OK** in the **Information** window that is displayed letting you know that the job to enable or disable rules has been submitted successfully.
8. **Optional:** Go to the **Jobs** console and verify that the rules were successfully enabled or disabled.

The job you is displayed in the **Jobs** console with a "Completed" or "Completed with Errors" status. You can select the job to see details about the job and troubleshoot any errors that may have occurred. See [Viewing Rules Jobs](#).

## Viewing Rules Jobs

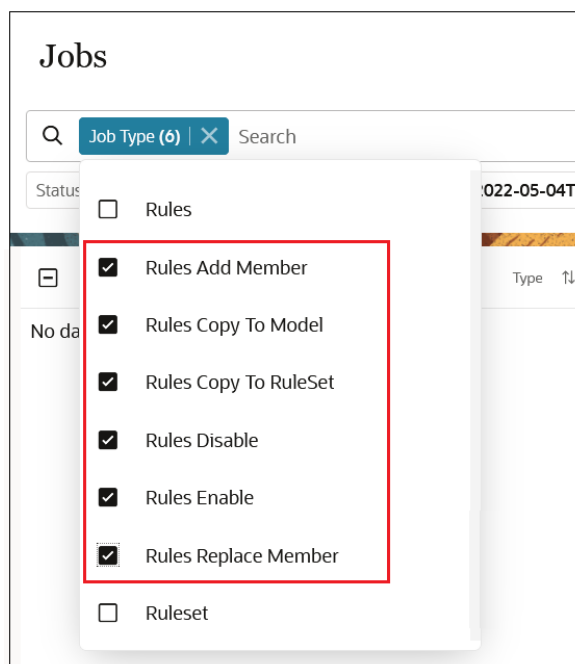
You can view the jobs you created from the **Mass Edit** tab in the **Jobs** console.

To access the **Jobs** console and view your Rules jobs:

1. Complete a step:
  - If you are currently editing rules, select the **Jobs** card above the **Mass Edit** page.
  - From the Home page, select **Modeling**, and then **Jobs**.

When you first access the **Jobs** console, the Rules jobs that have been submitted are displayed along with all of the other jobs that have been submitted.

2. To limit the jobs displayed to just Rules jobs, click the **Job Type** tile to move it to the **Search** field. Once it is in the **Search** field, click the tile again and scroll down to select the desired Rule job.



**Note:** By default, the last three days' jobs are displayed. Click the **Start Time** and **End Time** tiles to select a different date range.

Jobs are displayed with a "Completed" or "Completed with Errors" status. In the following example, one **Rules Add Member** job has been submitted, and it has successfully run without an errors.

Job ID	Name	Type	Status	User	Start	End	Duration	Actions
50	10 Actuals Allocation Pro...	Rules Add Member	Completed	epm_default_...	4/6/22 10:04:35 AM	4/6/22 10:04:38 AM	00:00:03	...

Click the job to display job details.

Job Id	50	Job Status	Completed
Job Type	Rules Add Member	Start Time	4/6/22 10:04:35 AM
Name		End Time	4/6/22 10:04:38 AM
Created By	epm_default_cloud_admin		
Rule Names	Customer Service Activity Assignment, Inside Sales Activity Assignment, Outside Sales Activity Assignment	Target Rule Tab	DESTINATION
Job Comment	Added Specialty Retailers to the Customer dimension.		
Model name	10 Actuals Allocation Process		
Member	Specialty Retailers		

Message Type	Message
Info	3 rules selected; 3 rules updated
Info	Customer Service Activity Assignment
Info	Inside Sales Activity Assignment
Info	Outside Sales Activity Assignment

## Viewing Rule Definitions

You can view the complete definition for each rule you create from the following places in Enterprise Profitability and Cost Management:

- From the **Waterfall Setup** tab, select a rule, and then click (View Rule Definition).
- From the **Mass Edit** tab, select a rule, and then click (View Rule Definition).
- From the **Rule Balancing** page, generate a Rule Balancing report, select a rule, and then click (View Rule Definition).

Rule definition information includes:

- Rule Details
- Rule Set Details
- Member Selections
- Formulas (if defined for Custom Calculation rules)



# 10

## Running Model Validation

### Related Topics

- [About Model Validation](#)
- [Validating Models](#)
- [Validation Errors and Warnings](#)

### Video

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#### Your Goal

Learn how validate rules, calculate models by running all rules or selected rules only, and clear calculated data.

#### Watch This Video



[Validating and Calculating Models in Enterprise Profitability and Cost Management](#)

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## About Model Validation

It is a best practice to validate your rules before you calculate them against a data POV. Model validation helps maintain the integrity of rules that may have been impacted by things like changes in dimensions definitions or incomplete rules.

Errors can be introduced when members directly referenced in your rules are renamed or deleted during a dimension change. If you delete members from dimensions that are referenced in existing rules, the rules can't run.

In addition, rules must be fully defined. This means that the source, destination, and target definitions for each rule must include members from every dimension.

## Validating Models


To validate your models:



1. From the Home page, select **Modeling**, and then **Model Validation**.
2. Make selections for **Model**, **Rule Set**, and **Rule Status**.

You can validate all rule sets in the model, or just focus on a single rule set. You can also filter the validation by rule status to check just enabled or disabled rules.

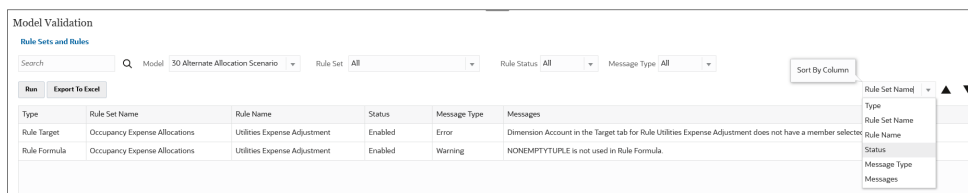
### Tip:

If you have rules that are not yet complete, leave them disabled in the rule definition. You can then select **Enabled** as the **Rule Status** to include only the enabled rules in the model validation. (See [Creating an Allocation Rule Definition](#) and [Creating a Custom Calculation Rule Definition](#) for information on enabling and disabling rules.)

- Optional:** To search for a rule or rule set, enter all or part of a rule or rule set name in the **Search** field and click .
- Click **Run**.

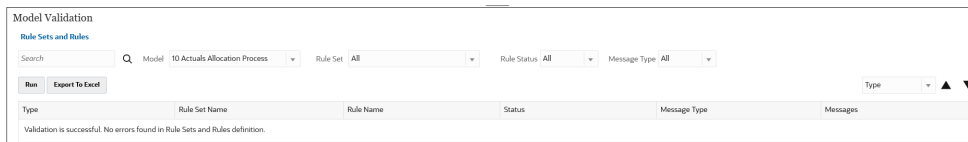
When you run the validation, the system checks all rules in the selected rule set. Any errors and warnings in your rules or rule sets are displayed. If you have several errors and warnings, you can sort the order in which the errors and warnings are displayed. To do this, click the **Sort By Column** drop-down, and select an option. You can then click  or  to sort the errors in ascending or descending order. You can sort by any column heading.

For example, you could sort the errors and warnings by Rule Set Name in ascending alphabetical order. See [Validation Errors and Warnings](#) for information about the errors and warnings that may be displayed.



Type	Rule Set Name	Rule Name	Status	Message Type	Messages
Rule Target	Occupancy Expense Allocations	Utilities Expense Adjustment	Enabled	Error	Dimension Account in the Target tab for Rule Utilities Expense Adjustment does not have a member selected
Rule Formula	Occupancy Expense Allocations	Utilities Expense Adjustment	Enabled	Warning	NONEMPTYUPLE is not used in Rule Formula.

- Optional:** If you have several errors and warnings, click **Export to Excel**. You can use the Excel spreadsheet as a checklist as you go back to the Rule Designer to fix the errors. See [Using the Rule Designer](#).
- Continue fixing any errors and warnings in your rules and rule sets, and then click **Run** until you get a message that the validation is successful.



Type	Rule Set Name	Rule Name	Status	Message Type	Messages
Validation is successful. No errors found in Rule Sets and Rules definition.					

 **Note:**

You can also use the "Validate Model" REST API or the "validateModel" EPM Automate command to validate a model. See [Validate Model](#) in *REST API for Oracle Enterprise Performance Management Cloud* and [validateModel](#) in *Working with EPM Automate for Oracle Enterprise Performance Management Cloud*.

## Validation Errors and Warnings

The errors and warnings in the following table are related to validating the use of best practices. For detailed best practice information, see [Best Practices](#).



Table 10-1 Validation Errors and Warnings

Message	Message Type	Explanation
Dimension <i>&lt;Dimension Name&gt;</i> in the <i>&lt;Rule Element&gt;</i> tab for Rule <i>&lt;Rule Name&gt;</i> does not have a member selected.	Error	The rule is not fully defined and cannot be executed. The rule will be disabled at runtime, and you must provide the missing information and re-enable the rule.
NONEMPTYTUPLE is not used in Rule Formula	Warning	The formula in a custom calculation rule does not contain a NONEMPTYTUPLE statement. A NONEMPTYTUPLE statement helps custom calculation rules calculate significantly faster.
Upper level member 'Product.AllProducts' is used in Driver	Warning	The use of upper level members in drivers can significantly increase allocation rule calculation times.
Calculated member 'Product.<Account.AverageShippingWeight>' is used in Driver (where <Account.AverageShippingWeight> is a level-0 member with a formula)	Warning	The use of calculated members in drivers can significantly increase allocation rule calculation times.
High destination count for Allocate Evenly Driver	Warning	The use of the Allocate Evenly driver forces allocations to every potential destination, and can result in a very high number of very small allocation amounts. You should verify that this meets your design goals.
Same parent member 'Product.AllProducts' is selected in both Source and Destination	Warning	The use of the same upper level member in both the source and destination results in an indexed allocation from every level 0 source to every level 0 destination under the parent member. You should verify that this is the intended logic.

# 11

## Calculating Models

### Related Topics

- [About Calculating Models](#)
- [Understanding Points of View](#)
- [Using the Calculation Control Page](#)
- [Calculating a Model](#)
- [Viewing Run Calculation Jobs](#)
- [Canceling a Calculation Job](#)

### Video

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#### Your Goal

Learn how validate rules, calculate models by running all rules or selected rules only, and clear calculated data.

#### Watch This Video



[Validating and Calculating Models in Enterprise Profitability and Cost Management](#)

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## About Calculating Models

You can calculate models for one or more points of view. For example, you could run a Forecasting model against 12 periods of data.

When you run a model against a point of view, Enterprise Profitability and Cost Management layers your results on top of your source data without changing it. This makes it easy to undo or redo running a single rule, a rule set, or all of your rules at once for an unlimited number of times. You can easily examine each calculation layer rule-by-rule, which provides transparency, credibility, and traceability to your allocations.

Unlike in the General Ledger where reversing allocations and adjustments requires reverse adjustment or restoring data back to a point before the calculations took place, in Enterprise Profitability and Cost Management you can simply clear calculated data.

To calculate a model:

1. From the Home page, selecting **Modeling**, and then **Calculation Control**.
2. Use the **Calculation Control** page to create points of view and run calculations.



#### Note:

You can also use the [calculateModel](#) EPM Automate command or the [Calculate Model](#) REST API to calculate a model.

## Understanding Points of View

A Point of View (POV) is used to present a specific version or perspective of an application. Enterprise Profitability and Cost Management comes with the following POV dimensions. You use these dimensions to create the POVs used to calculate your models.

- **Years:** Identifies the calendar years in which the data has been gathered.
- **Period:** Enables you to analyze strategies and changes over time.
- **Scenario:** Identifies a version of the application for a specific time period and set of conditions. You can run calculations for Actual, Plan, and Forecast scenarios.
- **Version:** Maintains separate versions of the same POV to monitor the impact of changes to the application, or to track different versions of the same application. Use the Version dimension to model possible outcomes based on assumptions, or "What If" scenarios to determine best or worst case scenarios. You can run calculations for a Final version, a Working version, and up to two "What If" scenarios.

You must create a POV before you can use it to calculate models or analyze calculations. For example the dimension members for "2022", "January", "Forecast", and "Working" may exist in an application, but until you create a POV with these dimension members, you cannot calculate models or analyze calculation details against the data residing in that POV combination.




### Note:

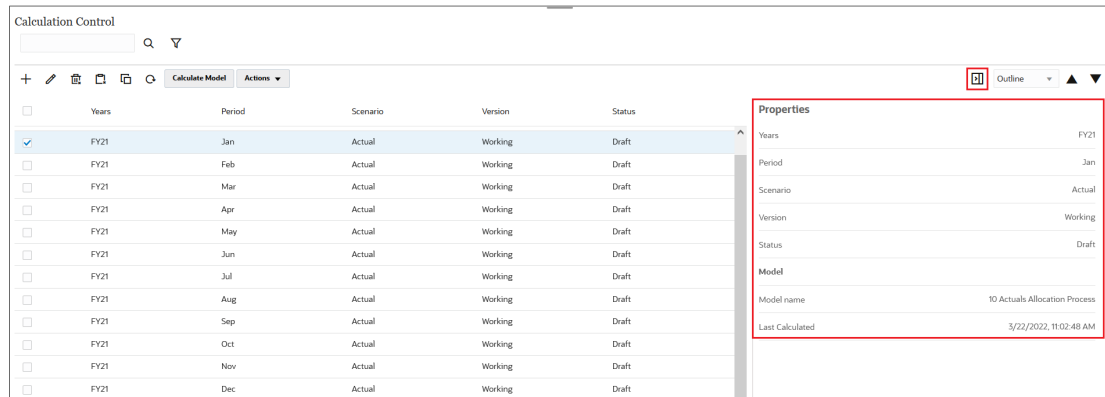
Only POVs with a status of "Draft" can have calculation control actions performed on them. See [Editing a Point of View](#) for information on how to change the POV status.

## Using the Calculation Control Page

The **Calculation Control** page shows all the points of view you have created. Selections are shown for the **Years**, **Period**, **Scenario**, and **Version** POV dimensions.

	Years	Period	Scenario	Version	Status
<input checked="" type="checkbox"/>	FY21	Jan	Actual	Working	Draft
<input type="checkbox"/>	FY21	Feb	Actual	Working	Draft
<input type="checkbox"/>	FY21	Mar	Actual	Working	Draft
<input type="checkbox"/>	FY21	Apr	Actual	Working	Draft
<input type="checkbox"/>	FY21	May	Actual	Working	Draft
<input type="checkbox"/>	FY21	Jun	Actual	Working	Draft
<input type="checkbox"/>	FY21	Jul	Actual	Working	Draft
<input type="checkbox"/>	FY21	Aug	Actual	Working	Draft
<input type="checkbox"/>	FY21	Sep	Actual	Working	Draft
<input type="checkbox"/>	FY21	Oct	Actual	Working	Draft
<input type="checkbox"/>	FY21	Nov	Actual	Working	Draft
<input type="checkbox"/>	FY21	Dec	Actual	Working	Draft

To display the properties for a specific point of view, select the point of view and click . In addition to the selections for the POV dimensions, the properties will show the name of the model used for the calculation, and the date and time the model was last calculated.



The screenshot shows the 'Calculation Control' interface. It features a table with columns for Years, Period, Scenario, Version, and Status. The first row is selected. To the right, a 'Properties' panel is open, displaying details for the selected point of view.

Years	Period	Scenario	Version	Status	
<input checked="" type="checkbox"/>	FY21	Jan	Actual	Working	Draft
<input type="checkbox"/>	FY21	Feb	Actual	Working	Draft
<input type="checkbox"/>	FY21	Mar	Actual	Working	Draft
<input type="checkbox"/>	FY21	Apr	Actual	Working	Draft
<input type="checkbox"/>	FY21	May	Actual	Working	Draft
<input type="checkbox"/>	FY21	Jun	Actual	Working	Draft
<input type="checkbox"/>	FY21	Jul	Actual	Working	Draft
<input type="checkbox"/>	FY21	Aug	Actual	Working	Draft
<input type="checkbox"/>	FY21	Sep	Actual	Working	Draft
<input type="checkbox"/>	FY21	Oct	Actual	Working	Draft
<input type="checkbox"/>	FY21	Nov	Actual	Working	Draft
<input type="checkbox"/>	FY21	Dec	Actual	Working	Draft

Properties	
Years	FY21
Period	Jan
Scenario	Actual
Version	Working
Status	Draft
<b>Model</b>	
Model name	10 Actuals Allocation Process
Last Calculated	3/22/2022, 11:02:48 AM

Tasks that you can complete on the **Calculation Control** page include:

- [Filtering Which Points of View Are Displayed](#)
- [Creating a Point of View](#)
- [Editing a Point of View](#)
- [Deleting a Point of View](#)
- [Clearing a Point of View](#)
- [Copying a Point of View](#)
- [Calculating a Model](#)


## Filtering Which Points of View Are Displayed

You can use the following filter and sort options to specify which points of view are displayed and the order in which they are displayed:

- Search for specific points of view
- Define a custom filter
- Sort the order in which the points of view are displayed
- Refresh the points of view that are displayed

These filter options allow you manipulate the display so that you can isolate the points of view that you want to focus on.

### Searching for Specific Points of View

To search for specific points of view, enter all or part of the POV name in the Search field, and click .

For example, entering "FY22" in the Search field displays all the POVs with "FY22" in the **Years** dimension.

Years	Period	Scenario	Version	Status
FY22	Jan	Actual	Working	Draft
FY22	Feb	Actual	Working	Draft
FY22	Feb	Actual	What If 1	Draft

### Defining a Custom Filter


To further refine the POVs displayed, click  and define filters for **Years**, **Period**, **Scenario**, **Version**, and/or **Status**.

Do one of the following to define the desired filters:

- Begin typing next to a POV dimension. The field will auto-populate with the available options.

For example, if you type "j" next to **Period**, "Jan", "Jun", and "Jul" are displayed in the drop-down.

Select an option to filter the results.

- Click  next to a POV dimension, and select a member from the **Select Members** dialog box. (See [Using the Member Selector](#).)

Note that when you select an upper level member, all level-0 descendants of that member are included in the filter.

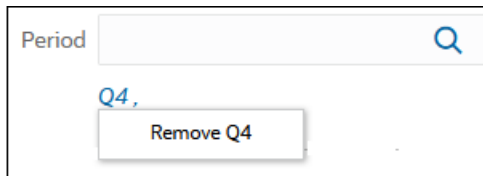
When you select a member to use as a filter, it is displayed below the POV dimension on the **Calculation Control** page. For example, if you select **Q4** to filter

the results displayed to "Oct", "Nov", and "Dec", then Q4 is displayed below the **Period** dimension on the **Calculation Control** page.

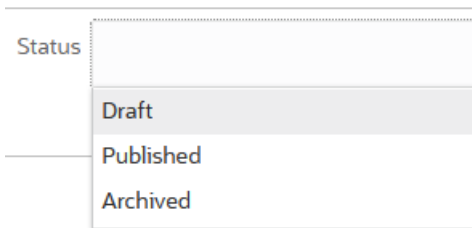


To remove a filter, click the filter, and then click **Remove**.

For example, to remove the "Q4" filter, click **Q4** and then click **Remove Q4**.





- To filter the status of the POVs that are displayed, click in the **Status** field and select an option:

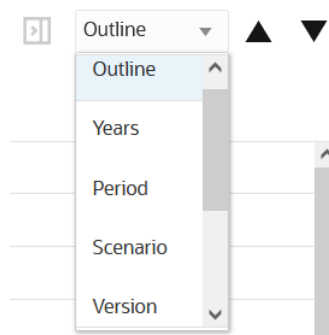


To hide the filter options, click  again.


### Defining the Sort Order

To sort the order in which the POVs are displayed, click the drop-down on the top right of the page, and select an option. You can sort by any POV dimension. If you select **Outline** as the sort option, the POVs are sorted in the order in which all the dimensions appear in the Oracle Essbase outline. **Outline** is the default sort order. After you select an option in the drop-down,

you can click  or  to sort the POVs displayed in ascending or descending order.



### Refreshing the Points of View Displayed

To refresh the points of view displayed on the page, click .

## Creating a Point of View

To create a point of view:

1. On the **Calculation Control** page, click **+**, or select **Actions**, and then **Create**.
2. In the **Create Point of View** dialog box, select members for the **Years**, **Period**, **Scenario**, and **Version** dimensions.
3. Click **OK**.


The point of view you create is displayed on the **Calculation Control** page.

### Note:

When you create a point of view, the **Status** is initially set to *Draft*. Later on, you can edit the point of view and change the status to *Published* or *Archived*. You cannot run calculations on a *published* or *archived* point of view.

## Creating Multiple Points of View

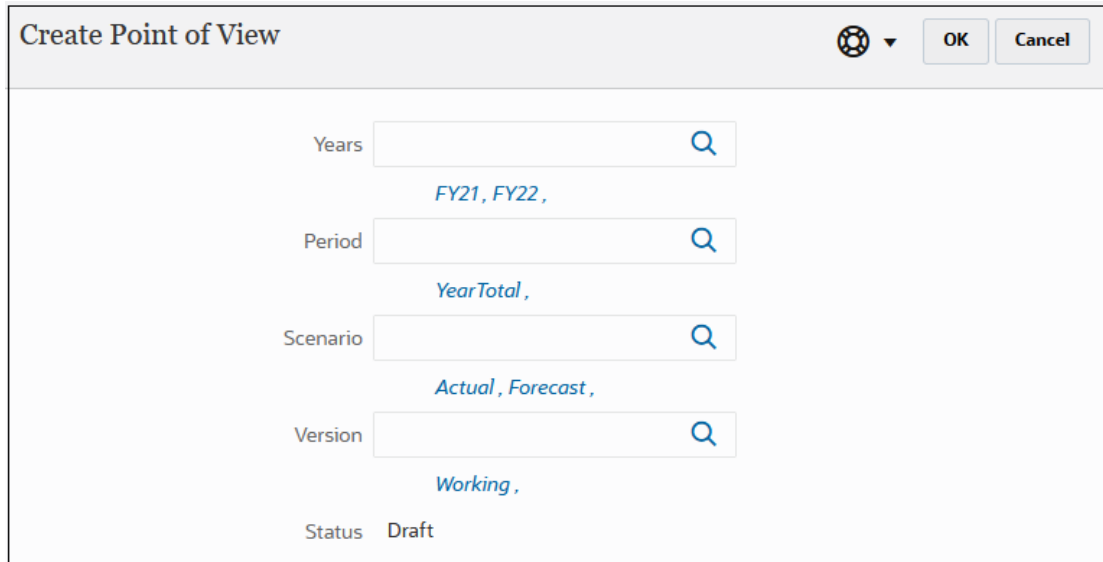
You can create multiple points of view at one time. To do this, select multiple members for one or more POV dimensions. This creates a POV for each intersection.

For example, you could create all the points of view needed for modeling the actual and forecasted data for 2021 and 2022. To do this, you would click  next to each POV dimension and make the following selections in the **Select Members** dialog box:

 **Note:**

When you select an upper level member, POVs are created for all the level 0 descendants of that member. In this example, selecting "YearTotal" in the "Period" dimension will create POVs for all 12 months.

The selections you make for each dimension are displayed in the **Create Point of View** dialog box.



The screenshot shows the "Create Point of View" dialog box. It features a title bar with a globe icon and "OK" and "Cancel" buttons. The main area contains four search fields, each with a magnifying glass icon and a list of suggestions below it:

- Years:** Search field with suggestions "FY21, FY22".
- Period:** Search field with suggestion "YearTotal".
- Scenario:** Search field with suggestions "Actual, Forecast".
- Version:** Search field with suggestion "Working".

At the bottom of the dialog, there is a "Status" field with "Draft" selected.

In this example, 48 points of view would be created to model the actual and forecasted data for 2021 and 2022.

 **Note:**

If any of the POVs overlap with existing POVs, the existing POVs are skipped, and the remaining new POVs are created. The number of POVs that will be created and the number of POVs that overlap with existing POVs is displayed when you click **OK** in the **Create POV** dialog box.

 **Note:**


For more information on selecting members, see [Using the Member Selector](#).

## Editing a Point of View

When you edit a point of view, the only thing you can change is the POV *status*.

To edit a point of view:



1. On the **Calculation Control** page, select the point of view you want to edit.
2. Click  , or select **Actions**, and then **Edit**.
3. The **Edit Point of View** dialog box shows the members selected for the **Years**, **Period**, **Scenario**, and **Version** dimensions. You cannot edit these selections; however, you can change the selection for the point of view **Status**.
  - **Draft**: This is the default selection.
  - **Published**: Select this option if the POV has already been published. (You cannot run calculations on a published POV.)
  - **Archived**: Select this option if the POV is archived. (You cannot run calculations on an archived POV.)
4. Click **OK**.


## Deleting a Point of View

### **Caution:**

You can delete a point of view; however, be aware that all of the data associated with the point of view will be deleted, and the calculation history for the deleted point of view will no longer be available on the **Calculation Analysis** page.

To delete a point of view:

1. On the **Calculation Control** page, select the point of view you want to delete.

You can select multiple points of view to delete if desired. For example, at the end of a fiscal year you may want to clear out the previous year's 12 periods of actuals and forecast.
2. Click  , or select **Actions**, and then **Delete**.
3. Click **OK** in the **Confirmation** dialog box to confirm that you want to proceed with the deletion.
4. **Optional:** Go to the **Jobs** console and verify that the point of view was deleted successfully.

The **Delete Point of View** job is displayed in the **Jobs** console with a "Completed" or "Completed with Errors" status. You can select the job to see details about the job and troubleshoot any errors that may have occurred. See [Viewing Point of View Jobs](#). If you deleted more than one POV, a separate job is created for each deleted POV.




**Note:**

You can also use the "Delete Point of View" REST API or the "deletePointOfView" EPM Automate command to delete a point of view. See [Delete Point of View](#) in *REST API for Oracle Enterprise Performance Management Cloud* and [deletePointOfView](#) in *Working with EPM Automate for Oracle Enterprise Performance Management Cloud*.

## Clearing a Point of View

Clearing a point of view allows you to remove data without removing the point of view. You can clear some or all of the data and start over with new or different rules.

To clear a point of view:

1. On the **Calculation Control** page, select the point of view you want to clear.
2. Click , or select **Actions**, and then **Clear**.
3. In the **Clear Point of View** dialog box, select a cube, and then select an option that relates to the level 0 members in the PCM\_Balance and PCM\_Rule regions.

**Table 11-1 Data that is Cleared for the Selected Point of View**

Clear POV Option	PCM_Balance Region Cleared	PCM_Rule Region Cleared	What this Means
<b>Input Data</b>	PCM_Balance.Input	Level 0 descendants of PCM_Rule	For all members in all business dimensions, clears the Input member in the PCM_Balance dimension, intersecting with all of the level 0 descendants in the PCM_Rule dimension.
<b>Adjustment Values</b>	PCM_Balance.AdjustmentIn PCM_Balance.AdjustmentOut	Level 0 descendants of PCM_Rule	For all members in all business dimensions, clears the Adjustment In and Adjustment Out members in the PCM_Balance dimension, intersecting with all of the level 0 descendants in the PCM_Rule dimension.

**Table 11-1 (Cont.) Data that is Cleared for the Selected Point of View**

Clear POV Option	PCM_Balance Region Cleared	PCM_Rule Region Cleared	What this Means
<b>Allocated Values</b>	PCM_Balance.AllocationIn PCM_Balance.AllocationOut PCM_Balance.AllocationOffsetAmount	Level 0 descendants of PCM_Rule	For all members in all business dimensions, clears the Allocation In, Allocation Out, and Allocation Offset Amount members in the PCM_Balance dimension, intersecting with all of the level 0 descendants in the PCM_Rule dimension.

4. Click **OK**.
5. **Optional:** Go to the **Jobs** console and verify that the data was successfully cleared from the point of view.

The Clear Point of View job is displayed in the Jobs console with a "Completed" or "Completed with Errors" status. You can select the job to see details about the job and troubleshoot any errors that may have occurred. See [Viewing Point of View Jobs](#).




**Note:**

You can also use the "Clear Data by Point of View" REST API or the "clearDataByPointOfView" EPM Automate command to clear data. See [Clear Data by Point of View](#) in *REST API for Oracle Enterprise Performance Management Cloud* and [clearDataByPointOfView](#) in *Working with EPM Automate for Oracle Enterprise Performance Management Cloud*.

## Copying a Point of View

You can copy data from one point of view to another. For example, if you wanted to create a "what if" version of the point of view, you could start with data that was already included in an existing point of view, copy it to a new point of view, and then do some additional edits and calculations.

To copy a point of view:

1. On the **Calculation Control** page, select the point of view you want to copy.
2. Click , or select **Actions**, and then **Copy**.
3. In the **Copy Point of View** dialog box, select a **Source** cube and a **Destination** cube.
4. Select the members for the **Years**, **Period**, **Scenario**, and **Version** dimensions that will be used in the copied point of view.

- Under **Data**, select an option that relates to the level 0 members in the PCM\_Balance and PCM\_Rule regions.

**Table 11-2 Data that is Copied for the Selected Point of View**

Copy POV Option	PCM_Balance Region Copied	PCM_Rule Region Copied	What this Means
<b>All Input Data</b>	Level 0 descendants of PCM_Balance	PCM_Rule.NoRule	For all members in all business dimensions, copies all level 0 descendants in the PCM_Balance dimension, intersecting with the NoRule member in the PCM_Rule dimension.
<b>All Data</b>	Level 0 descendants of PCM_Balance	Level 0 descendants of PCM_Rule	For all members in all business dimensions, copies all level 0 descendants in the PCM_Balance dimension, intersecting with all of the level 0 descendants in the PCM_Rule dimension. This results in all of the data in the POV being copied.

- Click **OK**.

 **Note:**

If you select options for **Years**, **Period**, **Scenario**, and **Version** to define a point of view that doesn't exist in the calculation control list yet, a dialog box is displayed letting you know that the destination point of view doesn't exist. Click **OK** to confirm that you want to create the destination point of view.

- Optional:** Go to the **Jobs** console and verify that the point of view was copied successfully.

The **Copy Point of View** job is displayed in the **Jobs** console with a "Completed" or "Completed with Errors" status.. You can select the job to see details about the job and troubleshoot any errors that may have occurred. See [Viewing Point of View Jobs](#).



**Note:**

You can also use the "Copy Data by Point of View" REST API or the "copyDataByPointOfView" EPM Automate command to copy data. See [Copy Data by Point of View](#) in *REST API for Oracle Enterprise Performance Management Cloud* and [copyDataByPointOfView](#) in *Working with EPM Automate for Oracle Enterprise Performance Management Cloud*.

## Viewing Point of View Jobs

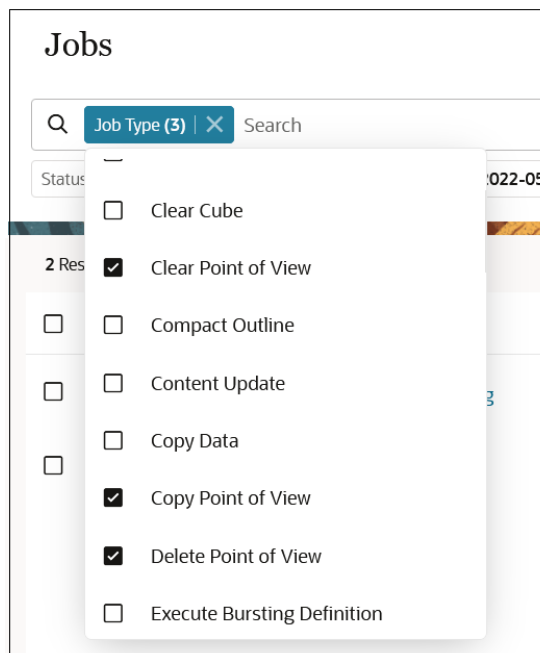
You can view the Point of View jobs you created on the **Calculation Control** page from the **Jobs** console.

To access the **Jobs** console and view your Point of View jobs:

1. Complete a step:
  - If you are currently calculating models, select the **Jobs** card above the **Calculation Control** page.
  - From the Home page, select **Modeling**, and then **Jobs**.

When you first access the **Jobs** console, the Point of View jobs that have been submitted are displayed along with all of the other jobs that have been submitted.

2. To limit the jobs displayed to just Point of View jobs, click the **Job Type** tile to move it to the **Search** field. Once it is in the **Search** field, click the tile again and scroll down to select the desired Point of View job(s).




**Note:** By default, the last three days' jobs are displayed. Click the **Start Time** and **End Time** tiles to select a different date range.

Jobs are displayed with a "Completed" or "Completed with Errors" status. In the following example, one **Delete Point of view**, one **Clear Point of View**, and one **Copy**

**Point of View** job has been submitted, and all of the jobs have successfully run without an errors.


Job ID	Name	Type	Status	User	Start	End	Duration	Actions
243	FY21:Dec:Actual:What L...	Delete Point of View	Completed	epm_default...	5/10/22 9:28:19 PM	5/10/22 9:28:26 PM	00:00:07	...
242	FY21:Oct:Actual:Working	Clear Point of View	Completed	epm_default...	5/10/22 9:13:33 PM	5/10/22 9:13:44 PM	00:00:11	...
241	FY17:Mar:Plan:Final	Copy Point of View	Completed	epm_default...	5/10/22 8:46:29 PM	5/10/22 8:46:29 PM	00:00:00	...

To display job details, click the job name, or click  next to a job, and select **Details**.

Job Id	241	Job Status	Completed
Job Type	Copy Point of View	Start Time	5/10/22 8:46:29 PM
Name	FY17:Mar:Plan:Final	End Time	5/10/22 8:46:29 PM
Created By	epm_default_cloud_admin	Details	The job 'FY17:Mar:Plan:Final' of type 'FY17:Mar:Plan:Final' completed successfully.
POV Delimiter	:	Source Cube	PCM_CLC
Destination Cube	PCM_CLC	Create Destination POV	true
Source POV	FY21:Jan:Actual:Working	Copy Type	INPUT
Destination POV	FY17:Mar:Plan:Final		

## Calculating a Model

To calculate a model:

- From the Home page, select **Modeling**, and then **Calculation Control**.
- Optional:** Filter the POVs displayed by entering all or part of the POV name or description in the Filter field, and clicking .
- Select the desired POVs, or select the checkbox next to **Years** to select all the POVs.
- Click **Calculate Model**.
- In the **Calculate Model** dialog box, enter information about the model to calculate:
  - Model:** Click the drop-down and select the model to calculate.
  - Job Comment:** Enter a note or comment about the Run Calculation job that will be displayed in the **Job Details** accessed from the **Jobs** console.
  - Processing Options:** Select one or more processing options. The processing options you select will be applied to every rule in the processing range defined for the model.
    - **Clear Calculated Data:** Clears past results and replaces them with the results from this calculation. This is the default. Unless this is the first time you are calculating a model, you almost always want to clear the calculated data from previous calculation.

 **Note:**

This option clears the calculated data *only* for the rules being executed. If a rule name has changed, then the data is *not* cleared from the old rule name. If you select to include "All Rules" in the calculation, this option clears the data for all rule members except "NoRule". This includes rule members from rules that have been renamed. See [Renaming Rules](#).

- **Run Calculation:** Calculates the rules that you select in the **Processing Range**.
- **Capture Diagnostics Data:** Captures diagnostics data that is displayed in the Job Log section of "Calculation Statistics" and "Calculation Statistics Comparison" reports when an allocation rule successfully executes but no cells are updated if no source or driver data is found. (See [Generating a Calculation Statistics Summary Report](#) and [Generating a Calculation Statistics Diagnostics Report](#).) This information can help you find the cause of a lack of allocation results.

The following is an example of the diagnostics data in a "Calculation Statistics" report where no source or driver data was found:

Job Log	
1	Number of updated cells count is Zero for Rule "R_IC_Ambass_Default"
2	Number of updated cells count is Zero for Rule "R_CorpExp_P6022_P5016"
3	Number of updated cells count is Zero for Rule "R_OP_Adj_54339"
4	Number of updated cells count is Zero for Rule "R_OP_Adj_54659"
5	Number of updated cells count is Zero for Rule "R_AFR_MgrRollup_All_RoomCount". Source Count: 0, Source Data Total: 0 and Driver Count: 241, Driver Data Total: 44,648.
6	Number of updated cells count is Zero for Rule "R_AMER_CMH-OP_All-Excl-KI_HotelCount". Source Count: 0, Source Data Total: 0 and Driver Count: 1,264, Driver Data Total: 2,044.
7	Number of updated cells count is Zero for Rule "R_AMER_CMH-OP_All-Excl-KI_HotelSignings". Source Count: 0, Source Data Total: 0 and Driver Count: 10, Driver Data Total: 12.
8	Number of updated cells count is Zero for Rule "R_AMER_CMH-OP_All-Excl-KI_TotalsRev". Source Count: 0, Source Data Total: 0 and Driver Count: 1,269, Driver Data Total: 990,760,869.68.
9	Number of updated cells count is Zero for Rule "R_AMER_CMH-OP_All_ClosingHotelPL". Source Count: 0, Source Data Total: 0 and Driver Count: 421, Driver Data Total: 506.
10	Number of updated cells count is Zero for Rule "R_AMER_CMH-OP_All_HotelSignings". Source Count: 0, Source Data Total: 0 and Driver Count: 10, Driver Data Total: 12.
11	Number of updated cells count is Zero for Rule "R_AMER_CMH-OP_H-EX-SB-CW_RoomCount". Source Count: 0, Source Data Total: 0 and Driver Count: 144, Driver Data Total: 49,692.
12	Number of updated cells count is Zero for Rule "R_AMER_CMH-OP_KI_HotelCount". Source Count: 0, Source Data Total: 0 and Driver Count: 273, Driver Data Total: 597.
13	Number of updated cells count is Zero for Rule "R_AMER_CMH-OP_KI_HotelSigningsClosingHotelPL". Source Count: 0, Source Data Total: 0 and Driver Count: 148, Driver Data Total: 137.
14	Number of updated cells count is Zero for Rule "R_AMER_CMH-OP_KI_TGR". Source Count: 0, Source Data Total: 0 and Driver Count: 641, Driver Data Total: 1,066,841,034.16.
15	Number of updated cells count is Zero for Rule "R_AMER_CMH-OP_KI_TotalsRev". Source Count: 0, Source Data Total: 0 and Driver Count: 607, Driver Data Total: 336,093,193.53.
16	Number of updated cells count is Zero for Rule "R_AMER_FFIF_All-Excl-KI_HotelSignings". Source Count: 0, Source Data Total: 0 and Driver Count: 62, Driver Data Total: 129.

- **Capture Essbase Debug Scripts:** Captures a log of the specific instructions that Enterprise Profitability and Cost Management gave to Oracle Essbase in order to run this job.

When you select this option, a zip file is created that contains a text file for each rule that is run. Each text file contains the instructions sent to Essbase for that rule. The zip file can be downloaded from the Inbox/Outbox Explorer. (See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).)

You generally only capture Essbase debug scripts if Oracle support requests it.

- **Optimize for Reporting:** Creates aggregate views in the PCM\_CLC cube to improve query speed.
- **Processing Range:** Click the drop-down and select the range of rules to include in the calculation.
  - **All Rules:** Calculates all the rules in the selected model.
  - **All Rules - Start From Selected Rule:** Runs the rules starting with the rule specified in the selected Rule Set. The rules are run to the end of the model, including any subsequent rule sets. If you select this option, click the drop-downs to select a Rule Set Name and a Rule Name.

- **All Rules - End After Selected Rule:** Runs all rules from the start and ends after the rule specified in the selected Rule Set. If you select this option, click the drop-downs to select a Rule Set Name and a Rule Name.
- **Rule Set Range:** Runs the rules between the sequence numbers specified. If you select this option, enter the First and Last Rule Set Sequence Numbers. Sequence numbers are specified when you create the rule set. See [Creating a Rule Set](#).
- **Single Rule:** Runs a single rule. If you select this option, click the drop-downs to select a Rule Set Name and a Rule Name.

 **Note:**

Only *enabled* rules are included in the calculation. (You select whether to enable or disable rules on the Definition page for allocation or custom rules.)

6. Click **Run**.
7. Click **OK** in the **Information** window that is displayed letting you know that the **Run Calculation** job has been submitted successfully.
8. **Optional:** Go to the **Jobs** console and verify that the job has completed successfully. The **Run Calculation** job is displayed in the **Jobs** console with a "Completed" or "Completed with Errors" status. You can select the job to see details about the job and troubleshoot any errors that may have occurred.

 **Note:**

The number of **Run Calculation** jobs that display correspond to the number of POVs that you select. For example, if you select five POVs in your model calculation, then you will see five **Run Calculation** jobs in the **Jobs** console. If you selected more than one POV to calculate, a **Batch Calculation** job summarizes information about all the POVs selected to calculate. See [Viewing Run Calculation Jobs](#).

 **Note:**

You can also use the [Calculate Model](#) REST API or the [calculateModel](#) EPM Automate command to calculate a model.

## Viewing Run Calculation Jobs

You can view the jobs you created from the **Calculation Control** page from the **Jobs** console.

To access the **Jobs** console and view your **Run Calculation** jobs:

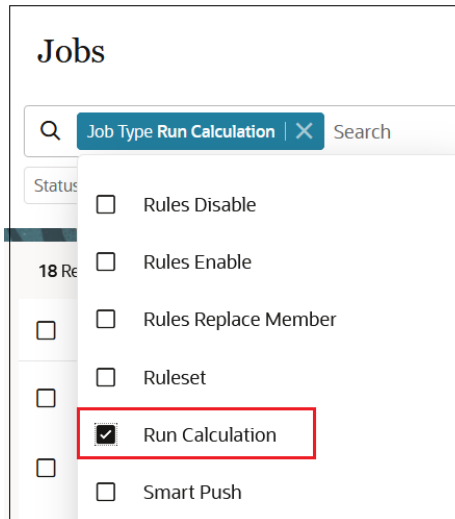
1. Complete a step:



- If you are currently running calculations, select the **Jobs** card above the **Calculation Control** page.
- From the Home page, select **Modeling**, and then **Jobs**.

When you first access the **Jobs** console, the **Run Calculation** jobs that have been submitted are displayed along with all of the other jobs that have been submitted.

2. To limit the jobs displayed to just **Run Calculation** jobs, click the **Job Type** tile to move it to the **Search** field. Once it is in the **Search** field, click the tile again and scroll down to select **Run Calculation**.




If you ran calculations for more than one POV, a **Batch Calculation** job is also created that summarizes information about all the POVs selected to calculate.

Jobs are displayed with a "Completed" or "Completed with Errors" status. In the following example, three **Run Calculation** jobs have been submitted and have successfully completed without any errors. Notice the summary **Batch Calculation** job has also completed.

**Tip:**

To help you identify jobs that were run in the same batch, the **Job ID** of the **Batch Calculation** job shows as the **Batch ID** on the **Calculation Analysis** page for each job in the batch. See [About Calculation Analysis](#).

Job ID	Name	Type	Status	User	Start	End	Duration	Actions
224	FY21:May:Actual:Working	Run Calculation	Completed	epm_default...	5/6/22 9:12:53 PM	5/6/22 9:14:47 PM	00:02:14	...
225	FY21:Apr:Actual:Working	Run Calculation	Completed	epm_default...	5/6/22 9:12:53 PM	5/6/22 9:14:52 PM	00:02:19	...
222	FY21:Mar:Actual:Working	Run Calculation	Completed	epm_default...	5/6/22 9:12:53 PM	5/6/22 9:14:52 PM	00:02:19	...
220	Batch Calculation	Batch Calculation	Completed	epm_default...	5/6/22 9:12:52 PM	5/6/22 9:15:03 PM	00:02:31	...

To display job details, click the job name, or click  next to a job, and select **Details**.

Job Details			
Job Id	157	Job Status	Completed
Job Type	Run Calculation	Start Time	5/2/22 3:55:56 PM
Name	FY21:Jan:Actual:Working	End Time	5/2/22 3:57:49 PM
Created By	epm_default_cloud_admin	Details	The job 'FY21:Jan:Actual:Working' of type 'FY21:Jan:Actual:Working' completed successfully.
Subset Start	0	Clear Calculated Data	true
Comment		Subset End	0
Optimize for Reporting	true	Capture Debug Scripts	false
POV Delimiter	:	Model name	10 Actuals Allocation Process
Source POV	FY21:Jan:Actual:Working	Run Calculation	true
Rule Name	0	Calculation Type	ALL_RULES

## Canceling a Calculation Job

You can cancel a calculation job once it has been submitted. As an example, you may wish to cancel a job if it is locked in an iterative process or if it is an exceptionally long calculation and you wish to make changes and then resubmit the job.

To cancel a calculation job after you have submitted it:

1. In the **Jobs** console, select a job that has a status of **Processing**.
2. Click **...**, and select **Cancel**.

Job ID	Name	Type	Status	User	Start	End	Duration	Actions
<input checked="" type="checkbox"/>	46	FY21:Dec:Actual:What If 2	Run Calculation	Processing	epm_default_clo...	2/13/23 4:59:19 PM		...
<input type="checkbox"/>	45	FY21:Dec:Actual:What If 1	Run Calculation	Processing	epm_default_clo...	2/13/23 4:59:19 PM		Details
<input type="checkbox"/>	44	FY21:Dec:Actual:Working	Run Calculation	Processing	epm_default_clo...	2/13/23 4:59:19 PM		Cancel

The job status changes to **Pending Cancel**.

Job ID	Name	Type	Status	User	Start	End	Duration	Actions	
<input type="checkbox"/>	46	FY21:Dec:Actual:What If 2	Run Calculation	Pending Cancel	epm_default_clo...	2/13/23 4:59:19 PM	2/13/23 5:03:18 PM	00:03:59	...
<input type="checkbox"/>	45	FY21:Dec:Actual:What If 1	Run Calculation	Processing	epm_default_clo...	2/13/23 4:59:19 PM		...	
<input type="checkbox"/>	44	FY21:Dec:Actual:Working	Run Calculation	Processing	epm_default_clo...	2/13/23 4:59:19 PM		...	

When the cancellation is complete, the status changes to **Cancelled**.

Job ID	Name	Type	Status	User	Start	End	Duration	Actions	
<input type="checkbox"/>	46	FY21:Dec:Actual:What If 2	Run Calculation	Cancelled	epm_default_clo...	2/13/23 4:59:19 PM	2/13/23 5:04:14 PM	00:04:55	...
<input type="checkbox"/>	45	FY21:Dec:Actual:What If 1	Run Calculation	Completed	epm_default_clo...	2/13/23 4:59:19 PM	2/13/23 5:05:31 PM	00:06:12	...
<input type="checkbox"/>	44	FY21:Dec:Actual:Working	Run Calculation	Completed	epm_default_clo...	2/13/23 4:59:19 PM	2/13/23 5:05:02 PM	00:05:43	...

 **Tip:**

- If the status seems to be stuck at *Pending Cancel*, click **Refresh** to refresh the job statuses.
- If the job you are trying to cancel has a status of *Processing*, but you get a message that says "Cannot cancel selected Business Rule because it is not in a processing state", the job may have some formula syntax errors. In this case, return to the **Calculation Control** page to troubleshoot the errors and re-run the job.

# 12


## Analyzing Calculations

### Related Topics

- [About Calculation Analysis](#)
- [Filtering Which Calculation Records Are Displayed](#)
- [Generating a Calculation Statistics Summary Report](#)
- [Generating a Calculation Statistics Diagnostics Report](#)
- [Generating a Model Snapshot Documentation Report](#)
- [Generating a Compare Model Snapshots Report](#)
- [Generating a Compare Snapshot with Current Model Report](#)
- [Creating a Model from a Snapshot](#)
- [Editing Comments](#)
- [Re-Running Calculations](#)
- [Providing Feedback](#)

### Video

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Your Goal	Watch This Video
Learn how to run reports to troubleshoot model calculations in the Calculation Analysis screen, and how to use the Rule Balancing screen to analyze model calculations.	 <a href="#">Analyzing and Troubleshooting Model Calculations in Enterprise Profitability and Cost Management</a>

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## About Calculation Analysis

After calculating models, you can analyze the calculation details by generating reports based on the models that you have calculated.

To analyze calculation details:

1. From the Home page, select **Modeling**, and then **Calculation Analysis**.
2. On the **Calculation Analysis** page, review status information and run reports.

The **Calculation Analysis** page shows details for each model point of view that was calculated on the **Calculation Control** page, using EPM Automate, or with the REST API automation tools. (See [Calculating Models](#).) You can have multiple calculations for a single point of view.




## Filtering Which Calculation Records Are Displayed

You can use the following filter and sort options to specify which calculation records are displayed and the order in which they are displayed:







- Search for specific calculation records
- Define a custom filter
- Sort the order in which the calculations records are displayed
- Refresh the calculation records that are displayed


These filter options allow you manipulate the display so that you can isolate the calculation records that you want to focus on.

### Searching for Specific Calculation Records


To search for specific calculation records, enter text in the Search field, and click .

For example, entering "Dec" in the Search field displays details about all the model points of view that were calculated in December.

Calculation Analysis											
Dec <input type="text"/>  											
<div style="display: flex; justify-content: space-between; align-items: center;"> <div>    <span>Actions ▾</span> </div> <div> <span>Sort: Start Time</span> <span>▾</span> <span>▲</span> <span>▼</span>  </div> </div>											
<input type="checkbox"/>	Years	Period	Scenario	Version	Model Name	Batch Id	Start Time	Elapsed Time	All Rules	Status	Comment
<input type="checkbox"/>	FY21	Dec	Actual	What If 2	10 Actuals Allocation Process	312	05/16/2022 10:39 AM	00:04:54	✓	Completed	
<input type="checkbox"/>	FY21	Dec	Actual	What If 1	10 Actuals Allocation Process	312	05/16/2022 10:39 AM	00:05:25	✓	Completed	
<input type="checkbox"/>	FY21	Dec	Actual	Working	10 Actuals Allocation Process	312	05/16/2022 10:39 AM	00:05:32	✓	Completed	
<input type="checkbox"/>	FY21	Dec	Actual	Working	10 Actuals Allocation Process		03/22/2022 11:02 AM	00:03:06	✓	Completed	

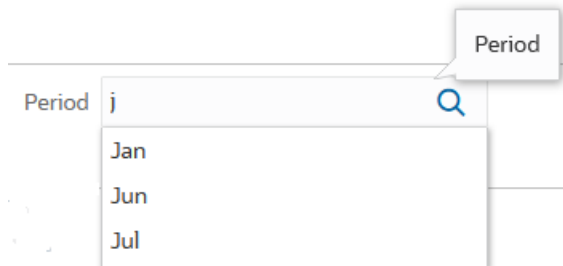
To remove the search filter, delete the text out of the Search field, and then click  to refresh the calculation records displayed.

### Defining a Custom Filter


To display all the possible filters options and further refine the results, click , and select the desired filters.

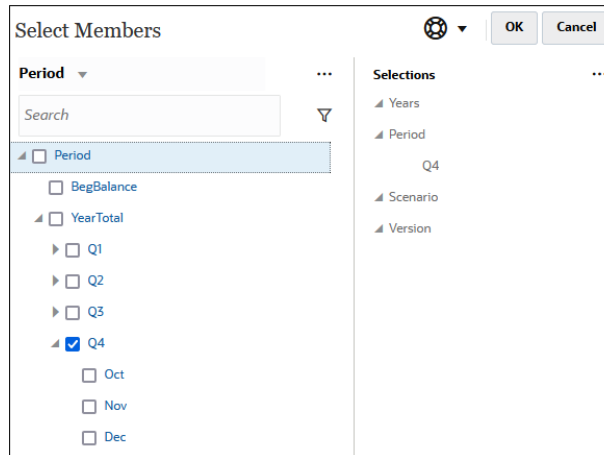
Do one of the following to define the desired filters:

- Begin typing next to a dimension. The field will auto-populate with the available options. For example, if you type "j" next to **Period**, "Jan", "Jun", and "Jul" are displayed in the drop-down.



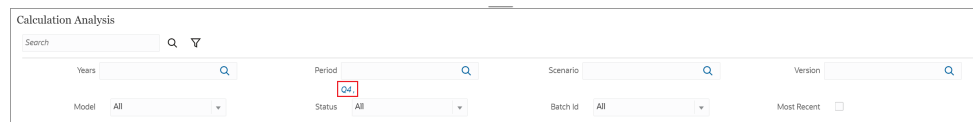
Select an option to filter the results.

- Click  next to the **Years**, **Period**, **Scenario**, or **Version** POV dimension, and select a member from the **Select Members** dialog box. (See [Using the Member Selector](#).)



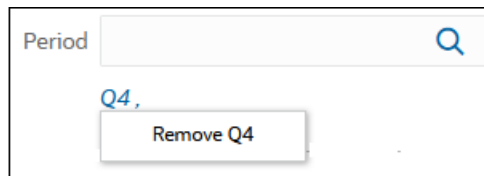
Note that when you select an upper level member, all level-0 descendants of that member are included in the filter.

When you select a member to use as a filter, it is displayed below the POV dimension on the **Calculation Analysis** page. For example, if you select **Q4** to filter the results displayed to "Oct", "Nov", and "Dec", then Q4 is displayed below the **Period** dimension on the **Calculation Analysis** page.

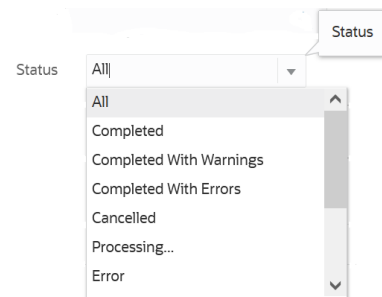


To remove a filter, click the filter, and then click **Remove**.

For example, to remove the "Q4" filter, click **Q4** and then click **Remove Q4**.



- To filter the status of the calculation records that are displayed, click in the **Status** field and select an option:





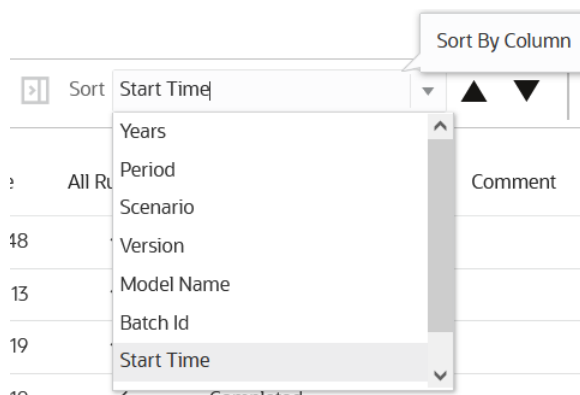
As an example, if you were creating forecast for Fiscal 23, you would most likely want to see the status for all 12 months in the year. In this case, you would select "FY23" for

**Years**, select "Q1", "Q2", "Q3", and "Q4" for the **Period**, and select "Plan" for **Scenario**.


To hide the filter options, click  again.

### Defining the Sort Order

To define the order in which the calculation records are displayed, click the drop-down on the top right of the page, and select the column by which to sort. After you select a column, you can click  or  to sort the calculation records in ascending or descending order.



### Refreshing the Calculation Records Displayed

To refresh the calculation records displayed on the page, click .

## Generating a Calculation Statistics Summary Report

The Calculation Statistics Summary report gives you all the details about a specific calculation record.

The top of the report shows summary information about the calculation. After the summary information, the Job Log displays any errors or warnings that occurred when the model was calculated. (If there were no errors or warnings, the Job Log section does not display in the report.) This is followed by detailed information about the rule sets and rules that were executed. The report shows all the rules that were run and the order in which they were run along with statistical data about each rule.

The Calculation Statistics Summary report can be used as a diagnostics tool. For example, you can use the report to troubleshoot performance issues by reviewing information about which rules are taking the longest to execute, the execution order of the rules, the size of the rules, how many scripts the rules are producing, and how many cells of data the rules are writing.

To generate a Calculation Statistics Summary report:

1. From the Home page, select **Modeling**, and then **Calculation Analysis**.
2. From the **Calculation Analysis** page, select a calculation run.



3. Click the **Actions** drop-down, and select **Calculation Statistics Reports**.
4. Select **Summary**, and then select a format:
  - PDF
  - Excel
  - Word
  - HTML
  - XML

### Sample Calculation Statistics Summary Report

Calculation Statistics Report												ORACLE			
Application : BksML40 POV Name : FY21..Dec:Actual..What If 2 Model name : 10 Actuals Allocation Process Clear Calculated Data : true Run Calculation : true Capture Debug Scripts : false Optimize for Reporting : true Calculation Type : ALL_RULES Ruleset Range : 0:0 Rule Name : User Id : epm_default_cloud_admin Job Id : 326 Job Status : COMPLETED Calculation Threads : 1 Start Time : 2022-05-16 10:39:32.167 End Time : 2022-05-16 10:44:27.108 Elapsed Time : 00:04:53															
Rule Set Name or Rule Name	RT	Iteration Number	Start Time End Time	Elapsed Time (hh:mm:ss)	Generation Time (hh:mm:ss)	Calculation Time (hh:mm:ss)	Thread Number	Number of Rules	Number of Scripts	Potential Sources	Potential Destinations	Potential Allocations	Cells Updated		
Occupancy Expense Allocations		0	2022-05-16 10:41:52 2022-05-16 10:41:54	00:00:01			4822								
Utilities Expense Adjustment	CC	1	2022-05-16 10:41:52 2022-05-16 10:41:53	00:00:00	0:0:0	0:0:0	4822		1 of 1	1		0	1		
Rent and Utilities Reassignment	SDE	1	2022-05-16 10:41:53 2022-05-16 10:41:54	00:00:00	0:0:0	0:0:0	4822		1 of 1	2	28	56	30		
Manufacturing COGs Related Expense Assignment		0	2022-05-16 10:41:54 2022-05-16 10:41:54	00:00:00			4822								
Product Material Allocation	SDE	1	2022-05-16 10:41:54 2022-05-16 10:41:54	00:00:00	0:0:0	0:0:0	4822		1 of 1	6	42	252	32		
Activity Costing		0	2022-05-16 10:41:54 2022-05-16 10:41:55	00:00:00			4822								
Activity Costing Assignments	SDE	1	2022-05-16 10:41:54 2022-05-16 10:41:55	00:00:00	0:0:0	0:0:0	4822		1 of 1	135	3645	492075	270		
Support Activity Reciprocal Assignments and Charge Out to		0	2022-05-16 10:41:55 2022-05-16 10:43:08	00:01:13			4822								
5/16/2022 13:13 PM												http://den00bzkc.us.oracle.com:9000 (22.06.32)		1 of 6	

#### Note:

Each calculation rule execution logs several statistics about its execution that are used to populate the Calculation Statistics Summary report. For models with many rules, the volume of these statistics can accumulate quickly. To maintain responsiveness on the Calculation Analysis page where calculation runs are viewed, Enterprise Profitability and Cost Management automatically purges old calculation run records and their associated statistics when the volume of runs or statistics grows to exceed certain thresholds. If you want to retain a longer history of calculation runs, a best practice is to frequently use the Export to Excel option on the Calculation Analysis page to archive calculation runs. See [About Calculation Analysis](#).

## Generating a Calculation Statistics Diagnostics Report

The Calculation Statistics Diagnostics report shows you diagnostics information for up to five calculation records. The report shows additional rule execution detail which can be useful in diagnosing rule performance issues.

The report prints in an Excel format and has two worksheets:

- [Job Statistics](#)
- [Rule Statistics](#)

To generate a Calculation Statistics Diagnostics report:

1. From the Home page, select **Modeling**, and then **Calculation Analysis**.
2. From the **Calculation Analysis** page, select up to five calculation records.
3. Click the **Actions** drop-down, and select **Calculation Statistics Reports**, and then select **Diagnostics**.
4. Open the downloaded `EngineStatisticsComparisonReport.xlsx` file.

### Job Statistics


Job Statistics shows the calculation record-level statistics and provides a comparison on some of those statistics. Job Statistics include information such as:

- Job Order
- Job ID
- Job Start Time
- Job End Time
- Job Total Time (min)
- Job Total Time Percent
- POV Name
- Model Name
- Model Snapshot Time
- Job Status
- EPM Build Number
- Essbase Build Number
- Calculation Threads
- Essbase Clear Type
- Non Empty Tuple
- Clear Calculation Data Time (min)
- Clear Aggregations Time (min)
- Rules Total Time (min)
- Clear Scratch Cells Time (min)
- Merge Slices Time (min)
- Create Aggregations Time (min)
- Generation Time (min)
- Execution Time (min)
- Allocation Time (min)
- Custom Calc Time (min)
- Driver Query Time (min)

- Clear Partial Time (min)
- Cells Updated
- Cells Updated Percent
- Number of Rules
- Rules Complete
- Sub Rules
- Sub Rules Complete
- SDE Rules
- CDE Rules
- SR Rules
- CR Rules
- CC Rules
- SASDD Rules
- Number of Scripts
- Scripts Complete
- Allocation Scripts
- Custom Calc Scripts
- Driver Queries
- Clear Partial Scripts
- Attribute Dimensions
- Attribute Dimension Members
- Attribute Associations
- Dimensions
- Dimension Members
- Dimension Members Cross Product
- Dimension Members Cross Product Percent
- Essbase Sessions Pre
- Essbase Sessions Post
- Input Cells Start
- Input Cells Start Percent
- Incremental Input Cells Start
- Aggregate Cells Start
- Input Cells End
- Input Cells End Percent
- Incremental Input Cells End
- Aggregate Cells End

***Sample Job Statistics***

	A	B	C	D	E	F	G	H	I
1	Job Order	Job Id	Job Start Time	Job End Time	Job Total Time (min)	Job Total Time Percent	POV Name	Model name	Model Snapshot Time
2	1	19	2023-03-23 23:15:35.06	2023-03-23 23:18:25.774	2.83	18.91	FY21:May:Actual:Working	10 Actuals Allocation Process	2023-02-23 15:37:50.129
3	2	18	2023-03-23 23:15:35.052	2023-03-23 23:17:58.85	2.38	-20.13	FY21:Apr:Actual:Working	10 Actuals Allocation Process	2023-02-23 15:37:50.129
4	3	17	2023-03-23 23:15:35.043	2023-03-23 23:18:34.439	2.98	0	FY21:Mar:Actual:Working	10 Actuals Allocation Process	2023-02-23 15:37:50.129
5	4	16	2023-03-23 23:15:35.035	2023-03-23 23:18:34.502	2.98	0	FY21:Feb:Actual:Working	10 Actuals Allocation Process	2023-02-23 15:37:50.129
6	5	15	2023-03-23 23:15:35.025	2023-03-23 23:18:34.597	2.98	0	FY21:Jan:Actual:Working	10 Actuals Allocation Process	2023-02-23 15:37:50.129
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

 **Tip:**  
Use the scroll bar at the bottom of the Excel spreadsheet to see additional Job Statistics.

### Rule Statistics

Rule Statistics shows all the rules that were executed and the order in which they were executed along with statistical data about each rule. Rule Statistics include information such as:

- Rule Order
- Job ID
- POV Name
- Model Name
- Start Time
- End Time
- Rule Set Name
- Rule Name
- Total Time (min)
- Total Time Percent
- Generation Time (min)
- Generation Time Percent
- Execution Time (min)
- Execution Time Percent
- Execution Time - Allocation Calc (min)
- Execution Time - Custom Calc (min)
- Execution Time - Driver Query (min)
- Execution Time - Clear Partial (min)
- Cells Updated
- Cells Updated Percent

- Potential Sources
- Potential Sources Percent
- Potential Destinations
- Potential Destinations Percent
- Potential Allocations
- Potential Allocations Percent
- Number of Scripts
- Scripts Complete
- Allocation Scripts
- Custom Calc Scripts
- Driver Queries
- Clear Partial Scripts
- Sub Rules
- Sub Rules Complete

### Sample Rule Statistics

	A	B	C	D	E	F	G
1	Rule Order	Job Id	POV Name	Model name	Start Time	End Time	Rule Set Name
2	1	19	FY21:May:Actual:Working	10 Actuals Allocation Process	2023-03-23 23:17:39.662	2023-03-23 23:17:50.771	Customer Product Region Profitability Calculation
3	2	18	FY21:Apr:Actual:Working	10 Actuals Allocation Process	2023-03-23 23:17:38.799	2023-03-23 23:17:39.215	Customer Product Region Profitability Calculation
4	3	17	FY21:Mar:Actual:Working	10 Actuals Allocation Process	2023-03-23 23:17:52.237	2023-03-23 23:18:07.499	Customer Product Region Profitability Calculation
5	4	16	FY21:Feb:Actual:Working	10 Actuals Allocation Process	2023-03-23 23:17:51.967	2023-03-23 23:18:07.512	Customer Product Region Profitability Calculation
6	5	15	FY21:Jan:Actual:Working	10 Actuals Allocation Process	2023-03-23 23:17:52.603	2023-03-23 23:18:07.526	Customer Product Region Profitability Calculation
7	6	19	FY21:May:Actual:Working	10 Actuals Allocation Process	2023-03-23 23:17:38.237	2023-03-23 23:17:39.638	Customer Product Region Profitability Calculation
8	7	18	FY21:Apr:Actual:Working	10 Actuals Allocation Process	2023-03-23 23:17:37.078	2023-03-23 23:17:38.772	Customer Product Region Profitability Calculation
9	8	17	FY21:Mar:Actual:Working	10 Actuals Allocation Process	2023-03-23 23:17:41.933	2023-03-23 23:17:52.218	Customer Product Region Profitability Calculation
10	9	16	FY21:Feb:Actual:Working	10 Actuals Allocation Process	2023-03-23 23:17:39.919	2023-03-23 23:17:51.943	Customer Product Region Profitability Calculation
11	10	15	FY21:Jan:Actual:Working	10 Actuals Allocation Process	2023-03-23 23:17:41.397	2023-03-23 23:17:52.582	Customer Product Region Profitability Calculation
12	11	19	FY21:May:Actual:Working	10 Actuals Allocation Process	2023-03-23 23:16:42.879	2023-03-23 23:17:38.205	Customer Product Region Profitability Calculation
13	12	18	FY21:Apr:Actual:Working	10 Actuals Allocation Process	2023-03-23 23:16:42.833	2023-03-23 23:17:37.046	Customer Product Region Profitability Calculation
14	13	17	FY21:Mar:Actual:Working	10 Actuals Allocation Process	2023-03-23 23:16:43.094	2023-03-23 23:17:41.912	Customer Product Region Profitability Calculation



#### Tip:

Use the scroll bar at the bottom of the Excel spreadsheet to see additional Rule Statistics.

## Generating a Model Snapshot Documentation Report

Enterprise Profitability and Cost Management keeps snapshots of your models when you calculate them. If you make changes to a model later, you still have a complete record of the rules that generated each calculation.

The Model Snapshot Documentation report gives you a historical printout of the rules in a model at the time the model was calculated. The report shows the name and sequence of the rules used in the model and gives an explanation of the purpose of each rule. If you click a hyperlink for a rule, it will show you detailed information about the rule and the actual rule definition. The hyperlinks enable you to easily navigate

through the different areas in the report. For example, you can navigate from the overview of a rule and the sequence in which it occurs to the actual rule definition.

You can save the report locally and distribute it to others, or attach it to other reports to help explain the allocation process to internal or external reviewers and auditors.

To generate a Model Snapshot Documentation report:

1. From the Home page, select **Modeling**, and then **Calculation Analysis**.
2. From the **Calculation Analysis** page, select the desired calculation record.
3. Click the **Actions** drop-down, and select **Model Documentation Reports**.
4. Select **Model Snapshot Documentation**, and then select a format:
  - PDF
  - Excel
  - Word
  - HTML
  - XML

**Sample Model Snapshot Documentation Report**

Model Snapshot Documentation Report							ORACLE
Application : BksML40 Model name : 10 Actuals Allocation Process Description : Allocation program for Actuals allocations approved for 2021. Created By : epm_default_cloud_admin Creation Date : 02/01/2022 09:40:44 Modified By : epm_default_cloud_admin Modified Date : 02/01/2022 09:40:44 Model Context : Driver.NoDriver							
Rule Set Name	Rule Name	Rule Type	Sequence	Enabled	Use Context	Modified By Modified Date	Description
Occupancy Expense Allocations			1	Y	Y	epm_default_cloud_admin 02/01/2022 09:40:45	Occupancy expenses are reassigned from cost centers where the expenses are paid to the cost centers that use the facilities. A rule Set Context is defined for Activity, Product, Customer, and Region dimensions to select the 'No-dimname' members. These dimensions are not meaningful in managing these rules.
Occupancy Expense Allocations	<a href="#">Utilities Expense Adjustment</a>	Custom Calculation	1	Y	Y	epm_default_cloud_admin 02/01/2022 09:40:45	Increases Utilities Expenses by 10%.
Occupancy Expense Allocations	<a href="#">Rent and Utilities Reassignment</a>	Allocation	2	Y	Y	epm_default_cloud_admin 02/01/2022 09:40:45	Rent and Utility expenses are reassigned from the Corporate cost center to the business function cost centers. A driver based on the square feet of each building used by each cost center is used to apportion the expenses.
Manufacturing COGs Related Expense Assignment			2	Y	Y	epm_default_cloud_admin 02/01/2022 09:40:45	Materials expenses that are not included in Cost of Goods sold are applied to products in this rule set. A rule set context for Activity, Customer, and Region dimensions is set to the 'No-dimname' members as these dimensions do not used in these rules.
2/10/2022 14:56 PM		http://den00bzk.us.oracle.com:9000 (22.02.63)				1 of 26	

**Detailed Information about the Utilities Expense Adjustment Rule in the Model**

**Model Snapshot Documentation Report** ORACLE®

**Rule Set Name :** Occupancy Expense Allocations  
**Rule Name :** [Utilities Expense Adjustment](#)  
**Use Rule Set Context :** Y  
**Rule Set Context :**  
 Activity.No Activity  
 Customer.No Customer  
 Product.No Product

**Calculation Mode :** Serial Calculation  
**Iterations :**

Destination	Context	Target	Result Dimension	Estimated Target Count
Account		Utilities		1
Activity	No Activity			
Customer	No Customer			
Driver	No Driver			
Entity		Corporate		1
Product	No Product			
PCM_Balance				0
<b>Formula</b>	[PCM_Adjustment In]= ([PCM_Input],[PCM_Rule]) * .10;			

2/10/2022 14:56 PM
http://den00bzk.us.oracle.com:9000 (22.02.63)
6 of 26

## Generating a Compare Snapshot with Current Model Report

The Compare Snapshot with Current Model report compares the definition of a model when it was calculated with the definition of the model today.

Click the hyperlink for a rule set or a rule to view detailed information about that rule set or rule. The hyperlinks enable you to easily navigate through the different areas in the report.

To generate a Compare Snapshot with Current Model report:

1. From the Home page, select **Modeling**, and then **Calculation Analysis**.
2. From the **Calculation Analysis** page, select the desired calculation record.
3. Click the **Actions** drop-down, and select **Model Documentation Reports**.
4. Select **Compare with Current Model**, and then select a format:
  - PDF
  - Excel
  - Word
  - HTML
  - XML

***Sample Compare Snapshot with Current Model Report***

**Compare Snapshot with Current Model Report** ORACLE

Application	BksML40	
Model	10 Actuals Allocation Process - 03/22/2022 18:02:48	10 Actuals Allocation Process
Global Context Members	Driver.NoDriver	Driver.NoDriver
Rulesets not in other Model		
Rulesets with Differences	Customer Product Region Profitability Calculation	

10 Actuals Allocation Process - 03/22/2022 18:02:48 vs 10 Actuals Allocation Process								
Rule Set Name	Rule Name	Rule Type	Enabled	Enabled	Sequence	Sequence	Use Context	Use Context
<a href="#">Customer Product Region Profitability Calculation</a>			true	true	7	7	true	true
Customer Product Region Profitability Calculation	<a href="#">Product COGS Assignment to Market Intersections</a>	Allocation	true	true	2	2	true	true

Rule Set Name : [Customer Product Region Profitability Calculation](#)

Enabled	10 Actuals Allocation Process - 03/22/2022 18:02:48	10 Actuals Allocation Process
Sequence	7	7
Use Context	true	true
Ruleset Context Members		
Rules not in other Model		
Rules with Differences	Product COGS Assignment to Market Intersections	

Rule Set Name: Customer Product Region Profitability Calculation  
 Rule Name: [Product COGS Assignment to Market Intersections](#)  
 Rule Type: Allocation

Enabled	10 Actuals Allocation Process - 03/22/2022 18:02:48	10 Actuals Allocation Process
	true	true

5/16/2022 15:28 PM http://den00bzk.us.oracle.com:9000 (22.06.32) 1 of 2

## Generating a Compare Model Snapshots Report

The Compare Model Snapshots report compares the models that were calculated for two different calculation records.

The report provides a summary of the rule sets and rules with differences. Click the hyperlink for a rule set or rule to view detailed information about that rule set or rule. The hyperlinks enable you to easily navigate through the different areas in the report.

To generate a Compare Model Snapshot report:

1. From the Home page, select **Modeling**, and then **Calculation Analysis**.
2. From the **Calculation Analysis** page, select the calculation records to compare.
3. Click the **Actions** drop-down, and select **Model Documentation Reports**.
4. Select **Compare Model Snapshots Report**, and then select a format:
  - PDF
  - Excel
  - Word
  - HTML
  - XML

### **Sample Compare Model Snapshots Report**



**Compare Model Snapshots Report** ORACLE

Application: BksML40

Model	10 Actuals Allocation Process - 05/17/2022 18:41:55	10 Actuals Allocation Process - 03/22/2022 18:02:48
Global Context Members	Driver.NoDriver	Driver.NoDriver
Rulesets not in other Model		
Rulesets with Differences	Product Sustaining Activity Charge Out;Manufacturing COGs Related Expense Assignment;Occupancy Expense Allocations;Support Activity Reciprocal Assignments and Charge Out to Direct Cost Centers;Customer Product Region Profitability Calculation;Customer Sustaining Activity Charge Out;Activity Costing	

10 Actuals Allocation Process - 05/17/2022 18:41:55 vs 10 Actuals Allocation Process - 03/22/2022 18:02:48								
Rule Set Name	Rule Name	Rule Type	Enabled	Enabled	Sequence	Sequence	Use Context	Use Context
Occupancy Expense Allocations			true	true	1	1	true	true
Manufacturing COGs Related Expense Assignment			true	true	2	2	true	true
Activity Costing			true	true	3	3	true	true
Support Activity Reciprocal Assignments and Charge Out to Direct Cost Centers			true	true	4	4	true	true
Product Sustaining Activity Charge Out			true	true	5	5	true	true
Customer Sustaining Activity Charge Out			true	true	6	6	true	true
Customer Product Region Profitability Calculation			true	true	7	7	true	true
Customer Product Region Profitability Calculation	Product COGS Assignment to Market Intersections	Allocation	true	true	2	2	true	true

### Detailed Information About the Occupancy Expense Allocations Rule Set

**Compare Model Snapshots Report** ORACLE

Rule Set Name : [Occupancy Expense Allocations](#)

	10 Actuals Allocation Process - 05/17/2022 18:41:55	10 Actuals Allocation Process - 03/22/2022 18:02:48
Enabled	true	true
Sequence	1	1
Use Context	true	true
Ruleset Context Members	Activity.NoActivity;Customer.NoCustomer;Product.NoProduct	Activity.NoActivity;Customer.NoCustomer;Product.NoProduct
Rules not in other Model		
Rules with Differences	Rent and Utilities Reassignment	

## Creating a Model from a Snapshot

Use this option to create a new model from an existing snapshot. For example, if you had a model from a few months ago, and in the intervening time several of the rules changed, you could create a new model and restore the rules to the state they were in when you initially calculated the model.

Other scenarios where creating a model from a snapshot would be useful are if you need to compare how your results would have looked today if you had calculated last year's rules, or if you need to restore the data and the rules from last year and make modifications.

To create a new model from a snapshot:

1. From the Home page, select **Modeling**, and then **Calculation Analysis**.
2. From the **Calculation Analysis** page, select the desired calculation record.
3. Click the **Actions** drop-down, and select **Create Model from Snapshot**.
4. In the **Create Model from Snapshot** dialog box, enter a name for the new model, and then click **OK**.

## Editing Comments

When you calculate a model, you have the option to enter a note or comment about the Run Calculation job. You can later edit this comment if desired.

For example, your initial comment could have been something like "First run with revised rules for a balance check. " You could then edit that comment with additional information when you calculate the model again. This allows you to track your progress as you work with your calculations.




### Note:


You can edit comments for a single calculation run, or for multiple calculation runs at one time.

To edit a comment:

1. From the Home page, select **Modeling**, and then **Calculation Analysis**.
2. From the **Calculation Analysis** page, select the desired calculation record.
3. Click the **Actions** drop-down, and select **Edit Comment**.
4. In the **Edit Comment** dialog box, enter text for the comment, and click **OK**.

The screenshot shows a dialog box titled "Edit Comment". In the top right corner, there is a globe icon, an "OK" button, and a "Cancel" button. The main content area of the dialog has a label "\* Comment" followed by a text input field. The text "Second run for revised rules." is entered into this field, and the entire input area is enclosed in a red rectangular border.

5. Click  to refresh the display.

Select the calculation record again, and then click  to see the edited comment.

Sort Start Time	
<b>10 Actuals Allocation Process</b>	
Job Id	326
Start Time	05/16/2022 10:39 AM
End Time	05/16/2022 10:44 AM
Elapsed Time	00:04:54
Status	Completed
Model Snapshot Time	03/22/2022 11:02 AM
Processed Rules / Total Rules	21 / 21
Comment	Second run for revised rules.
All Rules	Yes

## Re-Running Calculations

To re-run a calculation:

1. From the Home page, select **Modeling**, and then **Calculation Analysis**.
2. From the **Calculation Analysis** page, select the desired calculation record.
3. Click the **Actions** drop-down, and select **Rerun Calculation**.
4. In the **Rerun Calculation** dialog box, enter a comment to describe why you are re-running the calculation, and then click **OK**.

This comment will be displayed in the **Job Details** accessed from the **Jobs** console.

5. **Optional:** Go to the **Jobs** console and verify that the job has completed successfully.

The Run Calculation job is displayed in the **Jobs** console with a "Completed" or "Completed with Errors" status. You can select the job to see details about the job and troubleshoot any errors that may have occurred. (See [Viewing Run Calculation Jobs](#)).

### Note:

Re-running a calculation uses the *current model definition*, not the snapshot stored in the calculation record.

## Providing Feedback

When you are analyzing calculations, you have the option to submit feedback for up to two calculation records in an **Export Diagnostics** job. The feedback includes the Calculation Statistics Report (see [Generating a Calculation Statistics Summary Report](#)) and the Model Snapshot Documentation Report (see [Generating a Model Snapshot Documentation Report](#)) for the selected job or jobs. This is helpful if you are troubleshooting problems with your calculation runs with Oracle support.

To select the **Provide Feedback** option:

1. From the Home page, select **Modeling**, and then **Calculation Analysis**.
2. From the **Calculation Analysis** page, select up to two calculation records.
3. Click the **Actions** drop-down, and select **Provide Feedback**.
4. Click **OK** in the **Confirmation** dialog box.
5. Click **OK** in the **Information** dialog box.
6. An **Export Diagnostics** job is created in the **Jobs** console. Click the **Export Diagnostics** job.

The feedback information is provided on the **Job Details** screen for the **Export Diagnostics** job.

The screenshot displays the 'Job Details' interface for an 'Export Diagnostics' job. At the top, job metadata is shown in two columns: Job Id (7), Job Type (Export Diagnostics), Name (EXPORT\_DIAGNOSTICS), and Created By (epm\_default\_cloud\_admin) on the left; Job Status (Completed), Start Time (1/23/23 6:23:15 PM), End Time (1/23/23 6:23:17 PM), and Details (The job 'EXPORT\_DIAGNOSTICS' of type 'Export Diagnostics' completed successfully) on the right. Below this is a table of model runs with columns for 'Model Run U I Ds' and 'Provide Feed Back'. The 'Provide Feed Back' column contains the value 'true'. At the bottom, a message log table shows a single 'Info' message with the text 'Feedback reference is UDR\_default\_epm\_default\_cloud\_admin\_2023\_01\_24\_01\_23\_17'.

Job Id	Job Type	Name	Created By	Job Status	Start Time	End Time	Details
7	Export Diagnostics	EXPORT_DIAGNOSTICS	epm_default_cloud_admin	Completed	1/23/23 6:23:15 PM	1/23/23 6:23:17 PM	The job 'EXPORT_DIAGNOSTICS' of type 'Export Diagnostics' completed successfully.

Model Run U I Ds	Provide Feed Back
165ce6f0-5dcc-4cb3-8577-a66ea9c38428_a6e59f83-e852-4c02-af5f-bccd4fd2060a	true

Message Type	Message
Info	Feedback reference is UDR_default_epm_default_cloud_admin_2023_01_24_01_23_17


# 13

## Viewing Rule Balancing Reports

### Related Topics

- [About Rule Balancing](#)
- [Designing Data Forms for Rule Balancing](#)
- [Best Practices for Designing Rule Balancing Data Forms](#)
- [Generating a Rule Balancing Report](#)

### Video

Your Goal	Watch This Video
Learn how to run reports to troubleshoot model calculations in the Calculation Analysis screen, and how to use the Rule Balancing screen to analyze model calculations.	 <a href="#">Analyzing and Troubleshooting Model Calculations in Enterprise Profitability and Cost Management</a>

## About Rule Balancing

You validate your results on the **Rule Balancing** page, where you can see each rule and its impact. Use this page to review your calculation results at a high level on a rule-by-rule basis. This top-down look at rule progression can help you identify where data may not have been allocated correctly so you can adjust your rule definitions accordingly. Rule balancing enables you to gain valuable insights for making business decisions.

## Designing Data Forms for Rule Balancing

Before generating a Rule Balancing report, you must first design a data form that will be used to generate the results displayed on the **Rule Balancing** page. (See [Best Practices for Designing Rule Balancing Data Forms](#).)





### Tip:

Enterprise Profitability and Cost Management includes a default data form, "Rule Balancing - Default", for rule balancing. You can use the default form as is, or use it as a template layout to customize as desired.

The first time an application is created, you must open the "Rule Balancing - Default" form on the Forms page and re-save it; otherwise, an error is displayed when you try to use the form. Anytime new dimensions are added, you must again open the form and re-save it to populate the new dimensions.

To design a data form for Rule Balancing:

1. Click the **Navigator** icon , then under **Create and Manage**, click **Forms**.
2. Click  (**Create**).
3. On the **Properties** tab, enter a name of up to 80 characters, and an optional description of up to 255 characters.
4. Select the **Cube** associated with the form.
5. Define the form layout.

When you create data forms for rule balancing, you define specific values for point of view dimensions, business dimensions, attribute dimensions, and system dimensions. (See [About Dimensions and Members in Enterprise Profitability and Cost Management](#).)

 **Note:**





















Rule balancing does not support page-level dimensions in the form definition. As a result, any dimensions selected in the Page section of the form Layout tab are treated as POV dimensions, and any member selections for Page dimensions are ignored.

**Balancing - All Steps**

[Properties](#) [Layout](#) [Other Options](#) [Business Rules](#)

---

**Point of View**





 Jan 	 FY21 
 Actual 	 Working 
 NoDriver 	 Customer 
 NetIncome 	 Activity 
 All_Entities 	 Product 

---

**Page**

---



**Attribute Dimensions**

 Delivery Zone	 Location
 Sales Rep	 Store Setting


---



**Columns**

A

 ILv10Descendants(PCM\_Net Balance) 

---

**Rows** 

1  ILv10Descendants(PCM\_Rule) 

However, in the **Rule Balancing** grid, you can select different point of view values to dynamically override the values specified in the form design.

Rule Balancing

Years: FY21 | Period: Feb | Scenario: Actual | Version: Working | Status: Draft

Refresh

Cube: PCM\_CLC | Data Form: Balancing - All Steps

Rule	Input	Adjustment In	Adjustment Out	Allocation In	Allocation Out	Balance	Running Balance	Remainder	Running Remainder	Net Change	Allocation
Jan											
Feb											
PCM_NoRule	807,762.3	0.01		0.01	0.01	807,762.3	807,762.3	807,762.3	807,762.3	0.01	
Occupancy Exp		0.01	-220,000		-8,420,000	8,420,000	-220,000	587,762.3	-220,000	587,762.3	-220,000
Utilities Exp		0.01	-220,000		0.01	0.01	-220,000	587,762.3	-220,000	587,762.3	-220,000
Rent and UI		0.01	0.01		-8,420,000	8,420,000	0.01	587,762.3	0.01	587,762.3	0.01
Manufacturing		0.01	0.01		-14,226,679.5	14,226,679.5	0.01	587,762.3	0.01	587,762.3	0.01
Product Ma		0.01	0.01		-14,226,679.5	14,226,679.5	0.01	587,762.3	0.01	587,762.3	0.01
Activity Costing		0.01	0.01		-16,696,185	16,696,185	0.01	587,762.3	0.01	587,762.3	0.01
Activity Costing Assignments		0.01	0.01		-16,696,185	16,696,185	0.01	587,762.3	0.01	587,762.3	0.01
Support Activity Reciprocal Assignments and Charge Out to Direct Cost Centers		0.01	0.01		-6,155,854.6	6,155,854.6	0.01	587,762.3	0.01	587,762.3	0.01
Total	807,762	-220,000		-93,117,248	93,117,248	587,762		587,762		-220,000	

And on the **Analyze** page, you can select different values for all of the point of view and business dimensions.

Period: Jan | Years: FY21 | Scenario: Actual | Version: Working | Driver: NoDriver | Customer: Customer | Account: Net Income | Activity: Activity | Entity: All Entities | Product: Product

Member Selector ...

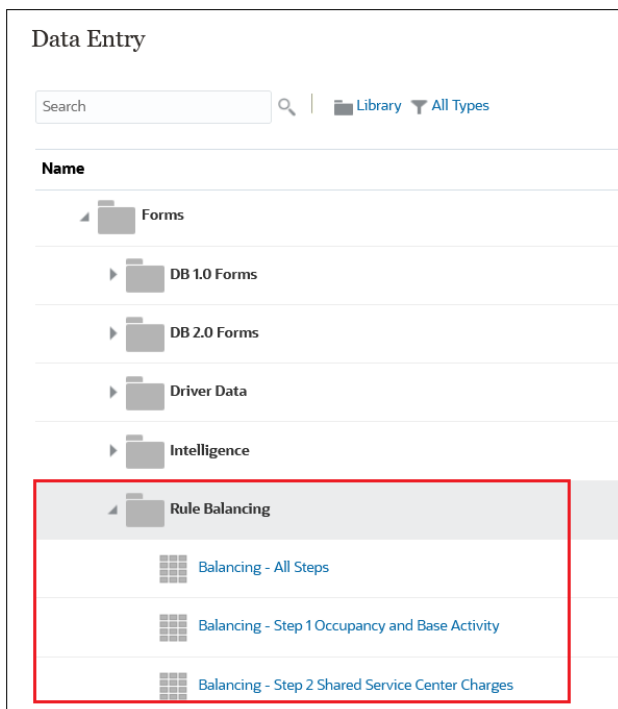
Rule	Input	Adjustment In	Adjustment Out	Allocation Out
NoRule	409,197.65	#missing		
Utilities Expense Adjustment	#missing	-440,000		
Rent and Utilities Reassignment	#missing	#missing		8,640,000.00
Product Material Allocation	#missing	#missing		14,300,142
Activity Costing Assignments	#missing	#missing		16,916,500
Executive Office Support Activity CI	#missing	#missing		1,685,000
Facilities Support Activity Charge C	#missing	#missing		918,952.18
Finance Support Activity Charge Ou	#missing	#missing		1,340,588.74
HR Support Activity Charge Out	#missing	#missing		900,001.99
IT Support Activity Charge Out	#missing	#missing		1,344,692.1
Marketing Activity Assignment	#missing	#missing		1,543,175.39
Shipping Activity Assignment	#missing	#missing		2,013,285.96
Assembly Activity Assignment	#missing	#missing		5,432,691.22
Machining Activity Assignment	#missing	#missing		2,337,366.64
Finishing Activity Assignment	#missing	#missing		988,448.87
Quality Assurance Activity Assignm	#missing	#missing		

**Note:**

For detailed information on creating data forms, see [Creating Forms](#) in *Administering Planning*.

## Best Practices for Designing Rule Balancing Data Forms

- On the **Data Entry** page, create a **Rule Balancing** folder under the **Forms** folder where you can store all your Rule Balancing forms. (To access the **Data Entry** page, click the **Data** card on the Home page.)
- Begin the names for all your Rule Balancing data forms with the word "Balancing" so they will be easier to find.

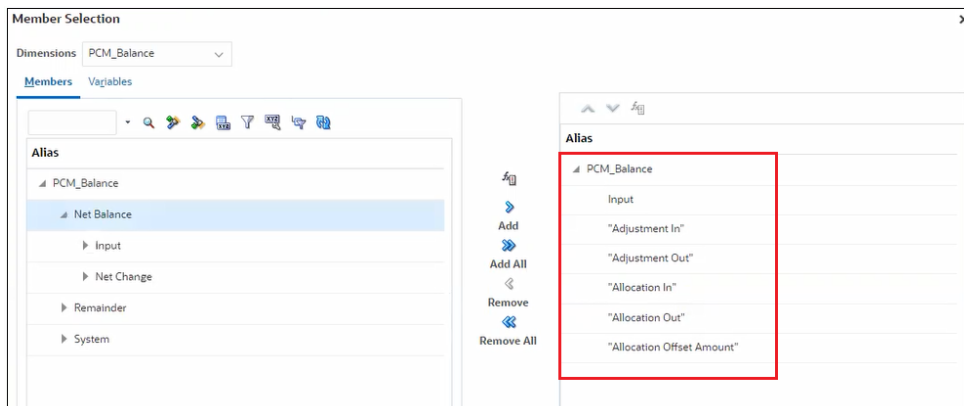


- Create a data form that includes all your rules and the following members as columns: Input, Adjustment In, Adjustment Out, Allocation In, Allocation Out, and Allocation Offset Amount. In this initial form, you want the rule balancing view to show as much data as possible.

In a Rule Balancing grid, the rows are always rules. Define the data form *rows* by selecting the level 0 descendants of the PCM\_Rule system dimension.



In a Rule Balancing grid, the columns are always balance members. Define the data form *columns* by adding the following members to Net Balance in the the PCM\_Balance dimension:

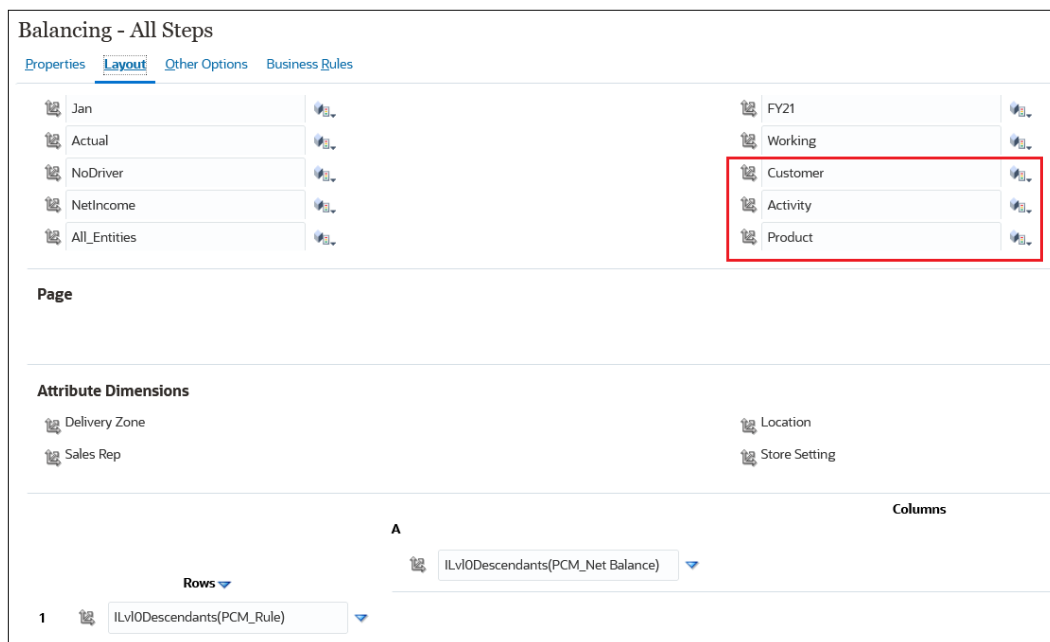




Then select the level 0 descendants of the PCM\_Net Balance members that you specified.



In the BksML50 sample application included with Enterprise Profitability and Cost Management, the data form called **Balancing - All Steps** is set up as follows. In this data form, we selected the top **Customer, Activity, and Product** dimensions so that the Rule Balancing report will display the data that rolls all the way up to the top of these dimensions.



The Rule Balancing report that is created as a result this data form appears as follows:

Rule	Input	Adjustment In	Adjustment Out	Allocation In	Allocation Out	Balance	Running Balance	Remainder	Running Remainder	Net Change	Allocation Offset Amount
Occupancy Expense Allocations	0.01	-220,000		-8,420,000	8,420,000	-220,000	587,962.3	-220,000	587,962.3	-220,000	
Utilities Expense Adjustment	0.01	-220,000	0.01	0.01	0.01	-220,000	587,962.3	-220,000	587,962.3	-220,000	
Rent and Utilities Reassignment	0.01	0.01		-8,420,000	8,420,000	0.01	587,962.3	0.01	587,962.3	0.01	
Manufacturing COGs Related Expense Assignment	0.01	0.01		-14,226,679.5	14,226,679.5	0.01	587,962.3	0.01	587,962.3	0.01	
Product Material Allocation	0.01	0.01		-14,226,679.5	14,226,679.5	0.01	587,962.3	0.01	587,962.3	0.01	
Activity Costing	0.01	0.01		-16,696,985	16,696,985	0.01	587,962.3	0.01	587,962.3	0.01	
Activity Costing Assignments	0.01	0.01		-16,696,985	16,696,985	0.01	587,962.3	0.01	587,962.3	0.01	
Support Activity Reciprocal Assignments and Charge Out to Direct Cost Centers	0.01	0.01		-6,955,854.6	6,955,854.6	0.01	587,962.3	0.01	587,962.3	0.01	
Executive Office Support Activity Charge Out	0.01	0.01		-1,685,000	1,685,000	0.01	587,962.3	0.01	587,962.3	0.01	
Facilities Support Activity Charge Out	0.01	0.01		-92,778.1	92,778.1	0.01	587,962.3	0.01	587,962.3	0.01	
Finance Support Activity Charge Out	0.01	0.01		-1,331,254.5	1,331,254.5	0.01	587,962.3	0.01	587,962.3	0.01	
HR Support Activity Charge Out	0.01	0.01		-895,334.9	895,334.9	0.01	587,962.3	0.01	587,962.3	0.01	
IT Support Activity Charge Out	0.01	0.01		-1,331,467.1	1,331,467.1	0.01	587,962.3	0.01	587,962.3	0.01	
Product Sustaining Activity Charge Out	0.01	0.01		-13,734,792.4	13,734,792.4	0.01	587,962.3	0.01	587,962.3	0.01	
Total	807,762	-220,000		-93,917,348	93,917,348	587,762	587,762		587,762	-220,000	

- Create additional data forms to limit the rules displayed in the Rule Balancing report so that you can focus on the rules that impact a specific part of your model.

In the BksML50 sample application, the **Balancing - Step 1 Occupancy and Base Activity** data form is set up to display only the rules related to occupancy expenses and

base activity rules. In this data form, we limited the view to only those rules in the **NoCustomer**, **NoActivity**, and **NoProduct** members. You can limit your rule balancing view by changing the member selections to be more restrictive.

The Rule Balancing report that is created as a result this data form appears as follows:

Rule	Input	Adjustment In	Adjustment Out	Allocation In	Allocation Out	Balance	Running Balance	Remainder	Running Remainder	Net Change	Allocation Offset Amount
PCM_NetRate	16,476,395	0.01		0.01	16,476,395		16,476,395	16,476,395	16,476,395	0.01	
Occupancy Expense Allocation	0.01	220,000		8,420,000	-8,420,000	220,000	16,696,395	220,000	16,696,395	220,000	
Utilities Expense Adjustment	0.01	220,000		0.01	220,000		16,696,395	220,000	16,696,395	220,000	
Rent and Utilities Reassignment	0.01	0.01		8,420,000	-8,420,000	0.01	16,696,395	0.01	16,696,395	0.01	
Activity Costing	0.01	0.01		0.01	-16,696,395	-16,696,395	0.01	-16,696,395	0.01	-16,696,395	
Activity Costing Assignments	0.01	0.01		0.01	-16,696,395	-16,696,395	0.01	-16,696,395	0.01	-16,696,395	
Total	16,476,395	220,000		8,420,000	-25,766,395	0.01		0.01		-16,476,395	

## Generating a Rule Balancing Report

To generate a Rule Balancing report:

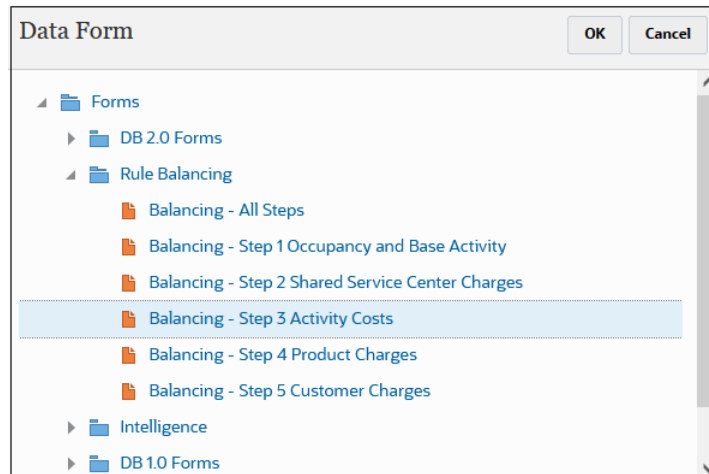
1. From the Home page, select **Modeling**, and then **Rule Balancing**.
2. On the **Rule Balancing** page, click the drop-down and select a **Cube**.
3. Select the data form that will be used to generate the results displayed on the **Rule Balancing** page.

The most recently-selected data form is displayed. To select a different data form, click the existing data form to open the **Data Form** dialog box, and navigate to the desired form.

For example, assume you wanted to change the data form from "Balancing - All Steps" to "Balancing - Step 3 Activity Costs". To do this:


- From the **Rule Balancing** page, click the link for the existing "Balancing - All Steps" form.

- In the **Data Form** dialog box, navigate to the desired form, select the form, and then click **OK**.



The form you selected is displayed on the **Rule Balancing** page.



Note that you can click  next to the data form to analyze or edit the form. (See [Designing Data Forms for Rule Balancing](#).)

 **Tip:**





Enterprise Profitability and Cost Management includes a default data form, "Rule Balancing - Default", for rule balancing. You can use the default form as is, or use it as a template layout to customize as desired.

4. Specify a point of view to analyze by selecting options for the **Years**, **Period**, **Scenario**, and **Version** POV dimensions.
5. Click **Refresh** to generate rule balancing information.

The following is a sample Rule Balancing report generated using the data in the BksML50 sample application provided with Enterprise Profitability and Cost Management. (See [Creating the Sample Application](#) for information on how to access the sample application.)

Rule Balancing											
Year	Period	Scenario	Version	Status							
FY22	Feb	Actual	Working	Draft							
					Cube: PCM_CLC		Data Form: Balancing - All Steps				
					Refresh		View				
Rule	Input	Adjustment In	Adjustment Out	Allocation In	Allocation Out	Balance	Running Balance	Remainder	Running Remainder	Net Change	Allocation Offset Amount
Preprocessing Currency Translation	798416	0.00		0.00	0.00	798416	798416	798416	798416	0.00	0.00
Occupancy Expense Allocations	0.00	-220000		-8420000	8420000	-220000	578416	8200000	578416	-220000	8420000
Utilities Expense Adjustment	0.00	-220000		0.00	0.00	-220000	578416	-220000	578416	-220000	0.00
Rent and Utilities Reassignment	0.00	0.00		-8420000	8420000	<0.01	578416	8420000	578416	<0.01	8420000
Manufacturing COGs Related Expense Assignment	0.00	0.00		-142466795	142466795	0.00	578416	0.00	578416	0.00	0.00
Product Material Allocation	0.00	0.00		-142266795	142266795	0.00	578416	0.00	578416	0.00	0.00
Equipment Depreciation Allocation to Products	0.00	0.00		-20000	20000	0.00	578416	0.00	578416	0.00	0.00
Activity Costing	0.00	0.00		-16705531.2	16705531.2	0.00	578416	0.00	578416	0.00	0.00
Activity Costing Assignments	0.00	0.00		-16705531.2	16705531.2	0.00	578416	0.00	578416	0.00	0.00
Support Activity Reciprocal Assignments and Charge Out to Direct Cost Centers	0.00	0.00		-6155834.6	6155834.6	0.00	578416	0.00	578416	0.00	0.00
Executive Office Support Activity Charge Out	0.00	0.00		-1685000	1685000	0.00	578416	0.00	578416	0.00	0.00
Facilities Support Activity Charge Out	0.00	0.00		-912778.1	912778.1	0.00	578416	0.00	578416	0.00	0.00
Finance Support Activity Charge Out	0.00	0.00		-1331254.6	1331254.6	0.00	578416	0.00	578416	0.00	0.00
HR Support Activity Charge Out	0.00	0.00		-895334.9	895334.9	0.00	578416	0.00	578416	0.00	0.00
<b>Total</b>	<b>798416</b>	<b>-220000</b>		<b>-93185787</b>	<b>93185787</b>	<b>578416</b>		<b>8998416</b>		<b>-220000</b>	<b>8420000</b>

After generating a rule balancing report, you can:

- Click  (**Export to Excel**) to export the Rule Balancing report to an Excel spreadsheet.
- Select a rule, and then click  (**View Rule Definition**) to view the complete rule definition for a rule. See [Viewing Rule Definitions](#).
- Select a rule, and then click  (**View Rule Data Ad-Hoc Grid**) to create an ad hoc grid where you can analyze a preconfigured data slice targeted for a specific rule's results. See [Using Ad Hoc for Data Entry and Analysis](#).
- Select a rule, and then click  (**View Rule Data Smart View**) to open a context-sensitive, ad-hoc report in Oracle Smart View for Office. For example, if you wanted to see what entities were affected by an allocation, you could open Smart View and add more context to your results, drill down for more detail, and pivot the data. See [Downloading and Installing Smart View](#) and [Using Smart View to Import and Edit Application Metadata](#) for information on how to download and use Smart View.

# Part IV

## Analyzing Data

### Related Topics

- [Working with Reports](#)
- [Working with Dashboards](#)
- [Viewing Key Information with Infolets](#)
- [Using Ad Hoc for Data Entry and Analysis](#)
- [Working with Profit Curves](#)
- [Tracing Allocations](#)
- [Using Smart View to Import and Edit Application Metadata](#)

### Video

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**Your Goal**

Get an introduction to all the ways you can analyze data from Enterprise Profitability and Cost Management.

**Watch This Video**

[Analyzing Data in Enterprise Profitability and Cost Management](#)

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# Working with Data in Forms

## Related Topics

- [You Enter Data in Forms](#)
- [About Forms Versions](#)
- [Opening Forms](#)
- [Exporting Data to Microsoft Excel](#)  
By exporting data from a form to Microsoft Excel, you can explore "what-if" scenarios in Excel before copying and pasting values back to your business process.
- [Working in Forms 1.0](#)
- [Selecting Different Data to Work With](#)
- [Understanding Form Colors](#)
- [Viewing Server Status on Forms](#)
- [Navigating Quickly in a Form](#)
- [Basics of Working With Data](#)
- [About Entering Data](#)  
This topic gives you some tips on entering and saving data.
- [Entering Different Kinds of Data](#)
- [Entering Data Quickly Using Commands](#)
- [Searching in Forms](#)
- [Selecting Cell Ranges](#)
- [Copying and Pasting Data](#)  
You can copy data within a form, from one form to another, or from another product, such as Microsoft Excel.
- [Dynamically Setting User Variables](#)  
If your administrator set up a form with at least one user variable and enabled dynamic user variables, then you can select and change user variable values directly in the form.
- [Using Data with Forms](#)  
When you're in a form, you can make the data more meaningful in many ways.
- [More Ways to Manipulate Values](#)  
Here are some easy ways to manipulate data:
- [Entering Data for Suppressed or Excluded Members](#)  
In forms, users can directly select a member from the drop-down list on the row dimension in the form, and then enter and save data for that member.
- [Getting the Latest Data](#)
- [About Calculating Data](#)  
Values are automatically totaled as you enter data. Here are other ways to calculate data:

- [How Totals are Calculated](#)  
Here's how values are subtotaled and totalled:
- [Reviewing Data](#)  
You can review and analyze data in many ways.
- [Personalizing How Data Displays](#)  
You can customize how data displays in a form, for example, with formatting and hiding rows and columns having no data.
- [Emphasizing Data with Formatting](#)  
In forms and ad hoc grids, a variety of formatting options help you emphasize certain data.
- [Hiding Rows or Columns That Have No Data or Zeros](#)  
To simplify the data in a form, you can hide rows that have no data or contain zeros.
- [About Cells That Have No Data](#)  
#MISSING in a cell indicates that the cell contains no data, whereas zero in a cell is a data value.
- [Printing Data](#)  
You can print data in forms as PDF files and customize its format if Adobe Acrobat Reader 5.0 is installed on your computer.
- [More About Working With Data](#)
- [Viewing Member Formulas](#)  
Your administrator can set up member formulas to perform calculations on members.
- [Working with Business Process Data in Excel](#)  
If you're familiar with working in Microsoft Excel, you may want to work with your business process data in Oracle Smart View for Office.
- [Using Your Own Excel Formulas in the Business Process](#)  
In Oracle Smart View for Office ad hoc analysis, you can create your own Excel formulas and members that calculate instantly without affecting other data. You can then open this *Smart Form* in your business process and execute the calculations that you created in Smart View.
- [About Smart View Formatting in Web Forms](#)  
Depending on how your administrator set up the form, a form may display the cell formatting that you saved in Oracle Smart View for Office.
- [Copying and Pasting Data Between Microsoft Excel and Your Business Process Forms](#)  
If you're accessing your business process from a desktop, you can copy and paste data between Microsoft Excel and forms.
- [Drilling Through to Source Data](#)  
Your administrator can load data from a source using Data Integration or the business process import and export functionality. You can drill through to view details of the data source.
- [Cell Icons](#)  
Icons in a form's cell provide information. Here's what they mean.
- [Resolving Data Validation Errors](#)  
Your administrator can set up data validation rules to ensure that data meets company guidelines.

- [Pushing Data for Reporting](#)  
For meaningful and complete reporting, your administrator can set up forms so that you can analyze data coming from different cubes using **Smart Push Details**.
- [About Cell Comments](#)  
To explain data or provide background, you can add comments to a cell or to a range of cells across multiple dimensions.
- [Working with Attachments](#)  
You can provide background information on data by attaching a file to a cell.
- [Searching for Forms, Dashboards, and Infolets](#)  
You can easily search for specific forms, dashboards, and infolets from their listing page.
- [Why Cells May Be Read-Only](#)  
Learn why you can't change data in some cells.
- [Seeing What's Changed](#)  
If your administrator has enabled audit trails for certain items, you can see their history of changes.
- [Working in Forms 2.0](#)
- [Working with the Global Toolbar in Forms 2.0](#)
- [Working with the Quick Toolbar in Forms 2.0](#)
- [Working with POVs in Forms 2.0](#)
- [Opening the Member Selector in Forms 2.0](#)  
To select members in Forms 2.0, use the member selector.
- [Performing Calculations Without Having to Submit Your Changes \(Calc on the Fly\)](#)  
Use calc on the fly to change data values and see calculated changes instantly without submitting the updated values.
- [Printing Data in Forms 2.0](#)

## You Enter Data in Forms

Administrators design *forms* as containers in which you enter, update, analyze, print, and report on data.

You enter data into the cells in structured forms, and each form has a special purpose. For example, the administrator may design a form solely for creating a revenue plan for your product line or for comparing last year's actual expenses against this year's projected expenses.

With the forms's objective in mind, the administrator sets up the form with certain dimensions and members, reflected in the row and column headings. An example of a dimension is Year, and its members may include FY21, FY22, and FY23. Cells display data for the selected members.

### Forms 2.0 Enterprise Profitability and Cost Management Example

The following example shows a 2.0 version of a Enterprise Profitability and Cost Management form:



Year	Scenario	Version	Emp	POV/Balance	POV/Rule	Cost Pool	Custom1	Custom2	Custom3	Data Source	Intercompany	Jurisdiction	LoB	Account
FY23	Actual	Working	US 1 LE 1 BU 1	Input	NoRule	NoCostPool	NoCustom1	NoCustom2	NoCustom3	NoDataSource	None	NoJurisdiction	LoB 1	Quantity
			Jan	Feb	Mar	Apr	May	Jun						
Financials		Regional Sales												
		Sales												
		Sales US												
		Marketing	4	5	5	5	4	5						
		Key Accounts	1	1	1	1	1	1						
		Indirect Sales												
		Inside Sales												
		Sales South	1	1	1	1	1	1						
		Sales East	3	3	3	3	3	3						
		Sales North	1	1	1	1	1	1						
		Sales West	0	0	0	0	0	0						
		Northwest Sales	2	2	2	2	2	2						
		Sales Central												
		Direct Sales												
		Southwest Sales	1	1	1	1	1	1						
Projects		Regional Sales												
		Sales												
		Sales US												
		Marketing												
		Key Accounts	6	7	6	7	6	7						
		Indirect Sales	2	2	2	2	2	2						
		Inside Sales												
		Sales South	2	2	2	2	2	2						
		Sales East	4	4	4	4	4	4						
		Sales North	1	1	1	1	1	1						

## About Forms Versions

Forms are currently available in two versions:


- **Forms 1.0:** Uses Slick Grid with Oracle ADF Fuse components
- **Forms 2.0:** Uses Slick Grid with Oracle JET components

Both forms versions currently coexist in the same business process at the same time. Forms 1.0 is the default version for existing applications. Forms 1.0 behavior remains unchanged. You can still create and update these forms in your business process as you did before. All newly created applications will default to Forms 2.0.

### Forms 2.0 Features

Forms 2.0 uses the existing Forms 1.0 runtime functionality and enhances it using Slick Grid with Oracle JET components for faster rendering, sophistication, ease of use, and consistency.

Forms 2.0 features include:

- Major improvements in usability and ease of use
- Better scalability and enhanced performance
- Runtime updates only; only runtime forms have adopted the new technology and user interface
- Standardized **Actions** menu for form actions
- New POV settings  menu
- New quick toolbar for performing certain common form grid actions
- Performance improvements for grids
- Improved comments updates, including multi-cell selection and comments entry
- Comments and Attachments can be added using a single option
- Seamless vertical or horizontal scrolling
- Better screen space utilization
- Faster cell to cell navigation

- Quick scrolling across data grids
- Forms and POV drop downs use a new sophisticated, hierarchical member selector with the ability to search
- Reduced popups
- Clean new icons and dialogs
- Built in sophisticated line item detail (replacing supporting detail)
- Wizard-based business rule runtime prompts; runtime prompts display as drawer from the right side
- Calc on the fly on the grid
- Stateless protocol for data retrieval
- Quicker refresh time on large grids
- Improved consistency between Web forms and Oracle Smart View for Office
- Improvements in web ad hoc
- Ability to **Save As** with a new form name
- Edit opens the Forms Designer in a new dynamic tab

### Setting the Forms Version

If you've been using Forms 1.0, there's no migration needed to use Forms 2.0. You can easily switch between the two versions using an application setting. The forms will be rendered in the runtime environment to whichever version you specify. No form redesign is necessary.

To specify a forms version:

1. Click **Application**, and then click **Settings**.
2. Under **Other Options**, find the **Forms Version** setting.
3. Select a forms version. The default **Forms Version** for existing applications is **Forms 1.0**.

### Considerations for Forms 2.0



- The Autosave option is not supported in Forms 2.0. Instead, perform calc on the fly to see your changes without having to submit changes to the database and refresh.
- Exporting to Excel is not supported in Forms 2.0. Use the **Actions** menu to open a form in Smart View and then save the Excel worksheet natively.
- Forms 2.0 runtime filtering supports column filtering. Runtime filtering on rows will be supported in a future update of Forms 2.0.
- Web form runtime formatting is not supported in Forms 2.0. It will be replaced with design time formatting in a future update.
- The Planning Modules Configuration Wizard is not supported in Forms 2.0.
- All future web form enhancements will be in Forms 2.0.


## Opening Forms

Each form represents a subset of data in your business process.



To open a form:

1. On the Home page, click **Data**.
2. You can filter forms by folder or type.
3. Under **All Types**, depending on the type of form you want to use, click the appropriate icon:












- **Simple** 
- **Ad Hoc**  : Ad hoc grids aren't confined by the form's design.

4. Click  to expand the folder the form is in.
5. Click the name of the form to open it.

For example, to update the accessories chart form, click "Accessories Chart".

Data Entry   Refresh Create

Search  | Library All Types

Name	Description	Created	Last Modified	Instructions	Actions
 Plan		8/6/23	epm user 8/6/23		...
 1 Revenue Plan by Market Size		8/6/23	epm user 8/6/23		...
 Accessories Chart		8/6/23	epm user 8/6/23		...
 Activity Ratios - Plan vs Target		8/6/23	epm user 8/6/23		...
 Actual vs Plan		8/6/23	epm user 8/6/23		...
 Ad Hoc Revenue Analysis		8/6/23	epm user 8/6/23		...

To open a form in Oracle Smart View for Office, see Opening Forms and Ad Hoc Grids from Web Applications in *Smart View for Office User's Guide*.

## Exporting Data to Microsoft Excel

By exporting data from a form to Microsoft Excel, you can explore "what-if" scenarios in Excel before copying and pasting values back to your business process.

About exporting data:

- Your business process doesn't export these details to Excel: Supporting Detail, cell comments, numerical formatting, the application name, user, form folder, attributes, currency tags, or percentages.
- Full decimal places are exported for numerical values, but scaling isn't applied to preserve accuracy. When you view the exported data in Oracle Smart View for Office, data displays like it does in the business process form.
- Member aliases display if your administrator sets the form to display them.
- Values pasted back to your business process from Excel must be unformatted data.

To export data from forms to Microsoft Excel:

1. Open a form.
2. Click **Actions**, then **Spreadsheet Export**, and then **Export**.

3. Either open or save the file.

Use standard Excel procedures to make and save your changes.

## Working in Forms 1.0

Administrators set who can view and change which data. You can enter or change data only in cells that you have Write permission to (cells with a white background).

### Selecting Different Data to Work With

Under the form name, a bar displays boxes that show which member data you're working with. This top bar consists of the following parts:

- The POV axis is displayed as black text. Your administrator selects these members for the form; you can't select different members for this dimension.
- The Page axis is displayed as blue hyperlinks. Click the hyperlink to select different members to work with.
- Dynamic POVs are displayed as blue hyperlinks. Click the hyperlink to select different members to work with.
- The Global POV bar is displayed as a bar at the top of the dashboard, if it's enabled. If you change a page in the global POV bar and then click **GO**, the page changes for all objects that are based on forms.

When you make a change to the POV, the change is reflected within seconds in any of your parallel sessions without having to log out of the web interface. For example, if you change the POV in a form in the web interface, the change is reflected for your session in Oracle Smart View for Office, in a REST API call, or in Reports. This ensures that any changes you make to the POV are reflected in all of your open sessions.

- If you make a change to the POV in any session other than the web interface, you must re-open the form in the web interface to see the updated member in the POV.
- If you are using vertical tabs in the web interface, if you make a change to the POV in a form on one tab, the change is reflected right away in a form on another vertical tab.

### Understanding Form Colors

Background colors in cells indicate the following states:

- White means that you can enter data in these cells.
- Yellow cells indicate that you have changed values but haven't yet saved them.
- Grayish blue cells indicate that you can see, but not change, their values. They are read-only.
- Tan cells are locked.
- Teal cells have Supporting Detail.

### Viewing Server Status on Forms

A status indicator on forms displays icons to indicate "busy" and "idle" server activity. Any client-server action performed in a form grid (for example, clicking a button to fetch or save data, executing a rule, launching a popup, and so on) will cause the status to change.



**Note:**

The status indicator doesn't display on forms that are embedded in a dashboard.

Balance Sheet - Forecast

Scenario Forecast	Version Working	Entity Total	Department	FY22 Q3	FY22 Q4	FY23 Q1	FY23 Q2
Current Assets				530,938,084,588	566,055,929	484,591,229	496,165,173
Fixed Assets				61,173,491	69,330,147	53,978,601	50,823,450
Other Assets Total				223,088,151	223,088,151	223,088,151	223,088,151
Total Assets				815,197,727	848,474,228	761,657,981	769,776,774
Current Liabilities				331,497,734	336,851,975	330,893,673	334,091,217
Long Term Liabilities				43,770	43,770	43,770	43,770
Total Owners Equity				483,656,224	511,578,483	430,720,638	435,641,787
Total Liabilities and Owners Equity				815,197,727	848,474,228	761,657,981	769,776,774

If the form's status is active, the "busy" icon is displayed, otherwise the "idle" icon is displayed.

- : Idle Status
- : Busy Status

## Navigating Quickly in a Form

How you navigate depends on whether you just clicked into a cell or are editing cell data. For example, when you are editing data in a cell, you must click Tab to move to the next cell.

You can quickly move around a form with these shortcut keys:

**Table 14-1 Keyboard Shortcuts**

Key or Key Combination	Result
Tab	Moves to the next cell in the row. When focus is on the last cell of a row, Tab moves to the next row.
Enter	Moves to the next cell in the column.
Shift+Enter	Moves to the previous cell in the column.
Shift+Tab	Moves to the previous cell in the row.
Up Arrow, Down Arrow	Moves up or down to the previous or next row.
Right Arrow, Left Arrow	While editing in a cell, moves forward and backward in the cell data. If you are navigating the grid cells without editing, moves to the next cell or previous cell in the row.
Ctrl+Home	Moves to the first cell in the form.
Ctrl+End	Moves to the last cell in the form.
Ctrl+Left Arrow	Moves to the first cell in the current row.
Ctrl+Right Arrow	Moves to the last cell in the current row.
Shift+End	Moves to the last cell of the first row.
Ctrl+A	Selects all cells.
Shift+Space	Selects the row.
Ctrl+Space	Selects the column.

**Table 14-1 (Cont.) Keyboard Shortcuts**

Key or Key Combination	Result
Esc	Discards the current changes in the cell, restoring the previous state.

**Note:**

These shortcuts are available only if you're accessing forms from the desktop.

## Basics of Working With Data

### Related Topics

- [About Entering Data](#)  
This topic gives you some tips on entering and saving data.
- [Dynamically Setting User Variables](#)  
If your administrator set up a form with at least one user variable and enabled dynamic user variables, then you can select and change user variable values directly in the form.
- [Using Data with Forms](#)  
When you're in a form, you can make the data more meaningful in many ways.
- [More Ways to Manipulate Values](#)  
Here are some easy ways to manipulate data:
- [Entering Data for Suppressed or Excluded Members](#)  
In forms, users can directly select a member from the drop-down list on the row dimension in the form, and then enter and save data for that member.
- [Getting the Latest Data](#)
- [About Calculating Data](#)  
Values are automatically totaled as you enter data. Here are other ways to calculate data:
- [How Totals are Calculated](#)  
Here's how values are subtotaled and totalled:
- [Reviewing Data](#)  
You can review and analyze data in many ways.
- [Personalizing How Data Displays](#)  
You can customize how data displays in a form, for example, with formatting and hiding rows and columns having no data.
- [Printing Data](#)  
You can print data in forms as PDF files and customize its format if Adobe Acrobat Reader 5.0 is installed on your computer.

## About Entering Data

This topic gives you some tips on entering and saving data.

- Your administrator can set up a form so that when you move out of a cell, your changes are automatically saved, with no prompt or message. Cell values are totaled and the affected cells are displayed with a green background.
- In forms with drop-down member selectors enabled on row dimensions, you can directly choose a member from the drop-down list and enter data for that member. Depending on how the drop-down member selector was configured, you may be able to add data to member rows that would have otherwise been suppressed.
- If the structure of the form hasn't changed since you started working in it, when you click **Save**, your changed or new data is instantly saved.
- To revert to the data on the form before you changed it, click **Refresh**.

### Note:

Use the business process interface to navigate instead of your browser's interface. Using Refresh, Forward, and Back in your browser can cause instability. If this happens, log off and then log back on.

## Videos

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### Your Goal

Learn how to enter data and save it.

### Watch This Video



[Entering and Saving Data in Cloud EPM](#)

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## Entering Different Kinds of Data

You can enter data in many ways, depending on how your administrator set up the form:

- Enter data directly in the cell.
- If a data cell displays the Down Arrow, you select a value from a list, called a *Smart List*. You can skip to a value by typing its first one or two letters. For example, in a list of months, skip to September by typing *s*.
- Members that are set up as percentages display with a percent sign (%) in the cell. You can enter a percentage value as a decimal or as a percentage, such as 60%.
- When you click into a cell that is set up for text data, a box displays. Enter your text into the box. When you enter text in cells, don't use angle brackets (< >). The maximum length of text data you can enter is 4000 characters.
- When you save data, business rules are run that your administrator set up to launch when the form is saved.

## Entering Data Quickly Using Commands

You can use these shortcuts in forms. Enter the keys or symbols, and then press Enter.

**Table 14-2** Commands for Quickly Entering Data

Keys or Symbol	Result	Example
K	Enters the value in thousands.	Enter 5K for 5,000.
M	Enters the value in millions.	Enter 5M for 5,000,000.
Add or +	Adds a number to the cell value.	If the cell value is 100, entering Add10 after 100 results in 110.
Sub or ~	Subtracts a number from the cell value.	If the cell value is 100, entering Sub10 after 100 results in 90.
Percent or per	Multiplies the cell value by the percentage you enter.	If the cell value is 100, entering per10 after 100 results in 10% of the current cell value, or 10.
Increase or inc	Increases the cell value by the percentage you enter.	If the cell value is 200, entering inc10 after 200 increases the cell value by 10% of 200 (20), to 220.
Decrease or dec	Decreases the cell value by the percentage you enter.	If the cell value is 200, entering dec10 after 200 decreases the cell value by 10% of 200 (20), to 180.
Power or pow	Changes the cell value to the number, added as an exponent.	If the cell value is 100, entering pow2 after 100 multiplies the cell value by an exponent of 2, to 10,000.
gr	Grows a cell by a percentage.	If the cell value is 200, entering gr50 after 200 increases the cell value by 100, to 300.




### Note:

These shortcuts are available only if you're accessing forms from the desktop.

## Searching in Forms

In forms, you can easily locate a member name or data value in a form by using the **Find**

icon . You can enter a partial name or value in the text box, and **Find** locates the first occurrence of the row, column, or data value. Click the forward or backward arrows to navigate to successive occurrences.

## Selecting Cell Ranges

You can select and work with multiple cells if the selection is rectangular and contiguous. To select a cell range in an ad hoc grid, click in the range's upper-left cell, click Shift, and then click in the range's lower-right cell. To select a cell range in a form, hover over the cell until the icon changes; then you can extend the range.

To select a row or column, click its heading. After you select a group of cells, you can copy and paste them or adjust the data values.



## Copying and Pasting Data

You can copy data within a form, from one form to another, or from another product, such as Microsoft Excel.

When you're in a form, copy and paste data by selecting the data, and then clicking **Data**, and then an icon under **Edit**.

About copying and pasting data:

- When you copy within or among forms, the business process copies and pastes the cells' stored values, not the values that display based on the precision setting.
- When pasting data to time periods, your business process applies the spreading rules for each cell in succession, starting from left to right and from top to bottom. The resulting data from a paste operation may not match the original copied data. Understand how values are spread before you paste them into time periods.
- Copying and pasting data from a text editor (for example, TextPad, Notepad, or WordPad) fails if the data is space-delimited. Use tab-delimited values instead.

## Dynamically Setting User Variables

If your administrator set up a form with at least one user variable and enabled dynamic user variables, then you can select and change user variable values directly in the form.

For example, for a variable called Department, you can select Sales members to plan sales expenses and then select Marketing members to plan marketing expenses. You can also set values for user variables in user preferences.

If the form was defined with the **Use Context** option, then user variables can be used in the POV. With this setting, the value of the user variable changes dynamically based on the context of the form.



### Note:

You must select a value for user variables before working in the form.

To dynamically change values for user variables:

1. Click the text that displays the user variable.  
The variable and its currently selected value display under the POV.
2. Select the members that you want, and then click **OK**.  
The form displays the selected members.

## Using Data with Forms

When you're in a form, you can make the data more meaningful in many ways.

- [Explore Form Functionality](#)
- [View Form Properties](#)


- [Focus the Data](#)
- [Enter Data for Suppressed or Excluded Members](#)
- [Emphasize Data with Formatting](#)
- [Adjust and Spread Data](#)
- [Add Comments and Attachments and View History](#)
- [Sort and Filter Data](#)
- [View Supporting Detail](#)

### Explore Form Functionality



Explore ways to access, calculate, manipulate, create, analyze, or comment on data. Click **Actions**, and then select from the following options:

- **Analyze:** Perform ad hoc analysis on a form.
- **New Ad Hoc Grid:** Create an ad hoc grid.
- **Show Reasons for Read-Only Cells:** Learn why you can't change data in some cells.
- **Business Rules:** View the business rules that are used in a form and launch them.
- **Smart Push Details:** Analyze data coming from different cubes.
- **Grid Validation Messages:** Check how the data conforms to rules that an administrator set up.
- **Clear Formatting:** Clear the formatting that you set.
- **Spreadsheet Export:** To explore "what-if" scenarios in Excel before copying and pasting values back to your business process, click **Actions**, and then select **Spreadsheet Export**.
- **Open in Smart View:** Work with a form in Oracle Smart View for Office. See Opening Forms and Ad Hoc Grids from Web Applications in *Smart View for Office User's Guide 23.100*.

### View Form Properties

View the properties of a form by clicking .



### Focus the Data

Explore what you can do with ad hoc grids. In a form, click , and then click .



### Enter Data for Suppressed or Excluded Members

Enter data for members that are not included in or not immediately visible on the form.

### Emphasize Data with Formatting



Improve the presentation quality of the data. Click , and then click  to explore options for setting the font, font size, font color, underscore, and background color.




## Adjust and Spread Data

Change values by a specific amount. Select the cell or cells. Click , then , and then click any of the following:



- **Adjust** to increase or decrease the cell data by a value or percentage.
- **Spread** to specify an amount or percentage by which to increase or decrease values across multiple dimensions, based on the existing values in the target cells. You can select a **Proportional**, **Evenly Split**, or **Fill** spread pattern.  
To use **Spread**, your administrator must enable **Grid Spread** as a form property.
- **Allocate**. Only administrators who are assigned the Allocate role can use this powerful feature. Also, **Allocate** must be enabled as a form property.
- **Lock** to temporarily lock cells while you calculate and fill in other values. To unlock the cells, click **Lock** again.

## Add Comments and Attachments and View History

Explain assumptions behind the data or, if enabled, view change history. Click a cell, then , and then . Under **Details**, click:

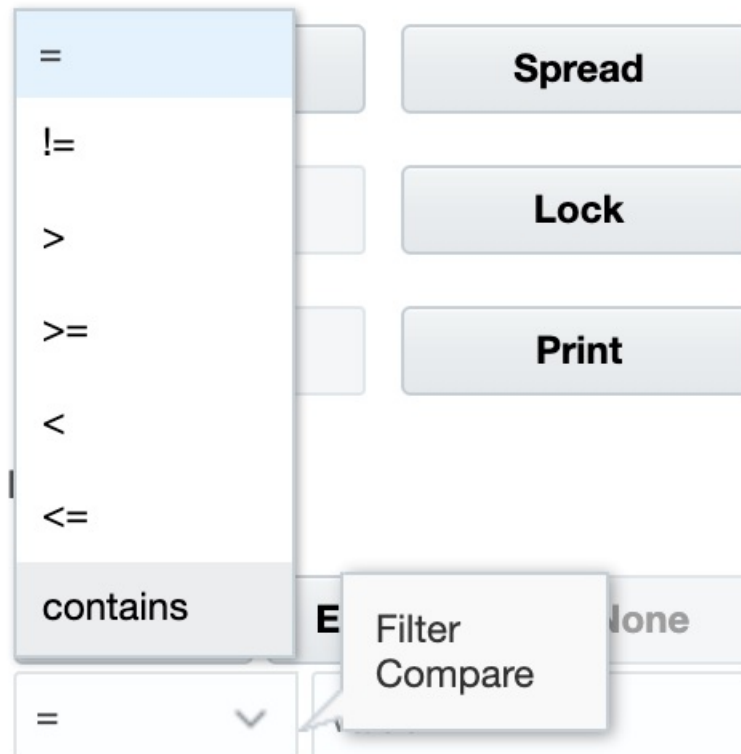
-  to attach an external file.
-  to add a comment.
-  if your administrator enabled auditing for Data, see who changed cell values and when they did so.

## Sort and Filter Data

Simplify the data presentation. Control which rows or columns are displayed (or hidden) by clicking , then , and then **Keep** or **Exclude** under **Filter**.



To limit the view to certain comparison results, click the **Filter Compare** menu to choose an operator and then specify a value for comparison in the **value** field.

## Action



You can also sort the values in a row or column by ascending or descending order by selecting the row or column, and then clicking an arrow under **Sort**.

### View Supporting Detail

Build logic into a data value. Click a cell, then , and then , and then **Supporting Detail**.

## More Ways to Manipulate Values

Here are some easy ways to manipulate data:

- Spread values from a parent cell to its children. For example, you can enter "300" in Q1 (the parent), and 300 is spread to its children: Jan, Feb, and March, automatically filling "100" into each of those months.
- Enter an operator (+, −, \*, /, or %) and then a number. For example, if a cell's initial value is 100, you can enter \*5, which changes the value to 500.

## Entering Data for Suppressed or Excluded Members

In forms, users can directly select a member from the drop-down list on the row dimension in the form, and then enter and save data for that member.



<input type="checkbox"/> <b>Total Office Expenses</b>	2,236,991
7620: Legal Services	7,972.08
7650: Car Rental	879

- In the row you have just added, modify or add data in the editable cells, as you require, and then click **Save**.

The row member you selected and the data you entered are added to the form.

In this example, the 7620: Legal Services member and the data that was entered (5,000) is added to the form.

Scenario Plan	Version Working	Entity HR and Administration Management	Year FY17
			<b>+ YearTotal</b>
		7110: Advertising	2,236,991
		<input type="checkbox"/> <b>Total Office Expenses</b>	<b>2,236,991</b>
		7620: Legal Services	5,000
		<input type="checkbox"/> <b>Total Facility Services Expenses</b>	<b>5,000</b>
		7640: Airfare	7,972
		7650: Car Rental	879
		7660: Shipping	326,660
		7670: Accommodation	2,335
		7690: Meals	521
		7699: Miscellaneous Travel Expenses	466
		<input type="checkbox"/> <b>Total T&amp;E Expenses</b>	<b>338,832</b>
		<input type="checkbox"/> <b>Total Operating Expenses</b>	<b>2,580,823</b>
		7310: Existing Depreciation	432,877
		<input type="checkbox"/> <b>Total Depreciation &amp; Amortization</b>	<b>432,877</b>
		<input type="checkbox"/> <b>OpEx before Allocations</b>	<b>3,013,700</b>

- Repeat this procedure to add other members and data to the form.

#### Guidelines for Entering Data for Suppressed or Excluded Members

When using the drop-down member selector, keep in mind the following:

- The drop-down content (list of members) is controlled by the form definition for the corresponding segment.
- Selections are not retained. If you perform a Refresh after selecting a member from the drop-down but before saving, the selection is lost and the form returns to its original state.

- The drop-down selection will be lost on saving data. Modifying data cells and saving data will not retain modified drop-down selections.

The drop-down member selector on row dimensions requires configuration in the Form Designer in the web interface. The Service Administrator or form designer specifies the drop-down selectors as segment properties for particular row dimensions. For example, suppose there are two dimensions placed on row axes, Entities and Line item; the member selector drop-down may be enabled for the Entity dimension members, for the Line item dimension members, or for both. Configuration is described in the administration guides for your business process.

## Getting the Latest Data

To ensure that you are working with the latest data, refresh the data by clicking **Refresh**.

## About Calculating Data

Values are automatically totaled as you enter data. Here are other ways to calculate data:

- Launch a business rule.
- Use a formula that was created in your business process.
- Use a formula that you created in Oracle Smart View for Office.
- Use the **Adjust** or **Spread** feature.
- Use Supporting Detail.

## How Totals are Calculated

Here's how values are subtotaled and totalled:

- Subtotals are calculated based on factors that your administrator set, such as the member hierarchies, member properties, and the logic of the hierarchy.
- To recalculate subtotals, click **Save**. If the Calculate Form rule is selected to launch during **Save**, all subtotals are recalculated based on their members' aggregation properties and the form's design.
- Saving data calculates members that are set to dynamically calculate, excluding the bottom-most (level-0) members.
- Calculations are based on the stored (not the displayed) values. Displayed values might be based on scaling or precision settings.
- Only displayed members are calculated. If you have read but not write permission to some members, then subtotals correctly include their values even if they are read-only.

## Reviewing Data

You can review and analyze data in many ways.

For example:

- In ad hoc grids.

- In dashboards.
- In reports.

## Personalizing How Data Displays

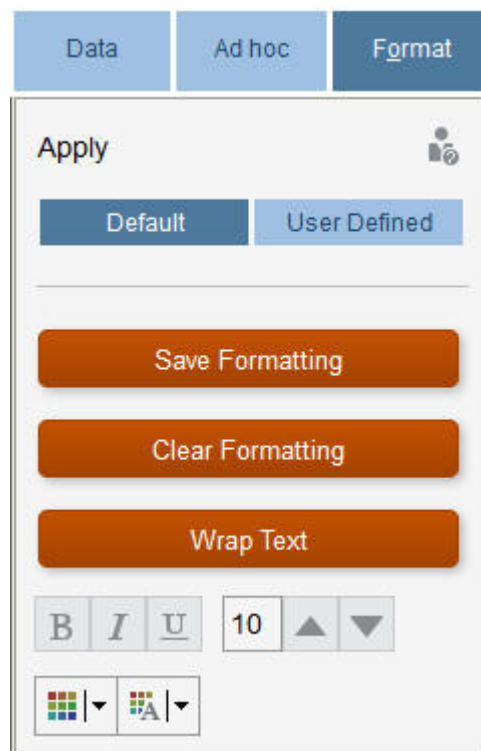
You can customize how data displays in a form, for example, with formatting and hiding rows and columns having no data.

See the next topics.

## Emphasizing Data with Formatting

In forms and ad hoc grids, a variety of formatting options help you emphasize certain data.

For example, you can increase or decrease the font size and set the font color and background. You can even select a custom color. You can save or clear the formatting that you set. And in text cells, you can wrap the text.



About formatting:

- **Default:** Formatting that your business process applies to indicate a state (for example, that the cell has **Supporting Detail**).
- **User Defined:** Formatting that you've applied.



 **Note:**

Where formatting styles conflict, the default formatting takes precedence. For example, you might format a cell and then change its value. The default formatting for a changed but not-yet-saved value overrides the formatting that you applied to that cell.

## Hiding Rows or Columns That Have No Data or Zeros

To simplify the data in a form, you can hide rows that have no data or contain zeros.

To hide rows that have no data or contain zeros:

1. Click **Actions**, and then **Filter**.
2. Click an option:
  - **Hide rows with no data:** To toggle between hiding and showing rows that have no data (displayed as #MISSING or blank, depending on how your administrator set this property). This option is not displayed if your administrator has set the form's property to Suppress Missing Data.
  - **Hide rows with zeros:** To toggle between hiding and showing rows that have zeros for values.
  - **Hide rows with zeros and no data:** To toggle between hiding and showing rows that have either no data or zeros, or both.

To hide columns that have no data or contain zeros, follow these steps, but select columns instead of rows.

## About Cells That Have No Data

#MISSING in a cell indicates that the cell contains no data, whereas zero in a cell is a data value.

#MISSING decreases the database size and improves performance. To improve performance, your administrator can set cells having no data as #MISSING.

## Printing Data

You can print data in forms as PDF files and customize its format if Adobe Acrobat Reader 5.0 is installed on your computer.

You can also export formatted reports to Oracle Smart View for Office.

To print a form's data to a PDF file:

1. With a form open, click the **Data** tab, and then **Print**.
2. Select the print options that you want.
3. Click **Print Preview**.
4. Click **Open with** to open the file in Adobe Acrobat Reader or click **Save** and name the file.

To revert to the printing options that you set in preferences, click **Restore Form Settings**.


## More About Working With Data

### Related Topics

- [Viewing Member Formulas](#)  
Your administrator can set up member formulas to perform calculations on members.
- [Working with Business Process Data in Excel](#)  
If you're familiar with working in Microsoft Excel, you may want to work with your business process data in Oracle Smart View for Office.
- [Drilling Through to Source Data](#)  
Your administrator can load data from a source using Data Integration or the business process import and export functionality. You can drill through to view details of the data source.
- [Cell Icons](#)  
Icons in a form's cell provide information. Here's what they mean.
- [Resolving Data Validation Errors](#)  
Your administrator can set up data validation rules to ensure that data meets company guidelines.
- [Pushing Data for Reporting](#)  
For meaningful and complete reporting, your administrator can set up forms so that you can analyze data coming from different cubes using **Smart Push Details**.
- [About Cell Comments](#)  
To explain data or provide background, you can add comments to a cell or to a range of cells across multiple dimensions.
- [Working with Attachments](#)  
You can provide background information on data by attaching a file to a cell.
- [Searching for Forms, Dashboards, and Infolets](#)  
You can easily search for specific forms, dashboards, and infolets from their listing page.
- [Why Cells May Be Read-Only](#)  
Learn why you can't change data in some cells.
- [Seeing What's Changed](#)  
If your administrator has enabled audit trails for certain items, you can see their history of changes.

## Viewing Member Formulas

Your administrator can set up member formulas to perform calculations on members.

To view a member's formula, click the formula icon .


## Working with Business Process Data in Excel

If you're familiar with working in Microsoft Excel, you may want to work with your business process data in Oracle Smart View for Office.

Smart View provides a common Microsoft Office interface for your business process. Using Smart View, you can view, import, manipulate, distribute, and share data in Microsoft Word and PowerPoint.

To learn more, see *Oracle Smart View for Office User's Guide*.

To install Smart View:

1. Click  on the top right of the Home page.
2. Under **Settings and Actions**, click **Downloads**.
3. Under **Smart View**, click **Download from Oracle Technology Network**, and then follow the prompts.

## Using Your Own Excel Formulas in the Business Process


In Oracle Smart View for Office ad hoc analysis, you can create your own Excel formulas and members that calculate instantly without affecting other data. You can then open this *Smart Form* in your business process and execute the calculations that you created in Smart View.

For example, say you're analyzing business process data in Smart View, which is the Microsoft Office interface to your business process. You want to calculate the average profit margin for four products. You can add a row called "Average Profit Margin" to the grid, and then create a formula on the four rows listing the products' profit margins. Select the four rows. Then, in the new "Average Profit Margin" row, add the Excel formula `=AVERAGE(D5:D8)`. The average profit margin is instantly displayed in the new row, but the new row is saved only in this Smart Form, and not the rest of the business process.

To make this customized ad hoc grid available in your business process, when you save it, select the option **Save as a Smart Form**. Then you can open and use this customized Smart Form, including the rows, columns, and calculations that you added, in your business process.

To learn more, see *Oracle Smart View for Office User's Guide*.

### Videos

Your Goal	Watch This Video
Learn about calculating data using Smart Forms.	 <a href="#">Adding Excel Formulas in Cloud EPM</a>

## About Smart View Formatting in Web Forms

Depending on how your administrator set up the form, a form may display the cell formatting that you saved in Oracle Smart View for Office.

Microsoft Excel formatting is supported in Smart View and your business process except for:

- Your business process supports Excel's font styles except for underline and alignment.
- Your business process supports Excel's borders except for solid borders.
- Smart View supports Excel's cell formatting, including many of Excel's number and date formatting. Your business process doesn't support Excel's numbers and dates formatting.

- Your business process supports Excel's row formatting except for Excel's read-only, column width, or row height formatting.

See the *Oracle Smart View for Office User's Guide*.

## Copying and Pasting Data Between Microsoft Excel and Your Business Process Forms

If you're accessing your business process from a desktop, you can copy and paste data between Microsoft Excel and forms.

### Note:

This functionality is available on desktops only, not on mobile devices.

To copy and paste data from Microsoft Excel to your business process forms:

1. In Microsoft Excel, highlight the data in a single cell or a range of cells, and then press **Ctrl+C** to copy the data to the clipboard.
2. Select the target cell or cells in the business process form, and then press **Ctrl+V**.
3. When the Clipboard helper displays, press **Ctrl+V** again. The data is pasted to the Clipboard helper.
4. Click **Paste** to paste the data into the business process form.

### Note:

Data that you copy and paste from Microsoft Excel to your business process reflects the formatting that's set up in Microsoft Excel. For example, if you set the number of decimal places in Microsoft Excel to zero, when you enter the value 459.123 in Microsoft Excel, the value displays as 459. If you copy this value into a business process form, then the value 459 is pasted.


## Drilling Through to Source Data

Your administrator can load data from a source using Data Integration or the business process import and export functionality. You can drill through to view details of the data source.

To drill through to source data:

1. Open a form containing loaded source data.




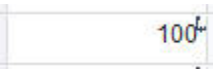
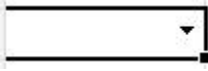



The icon  in the right top corner of a cell indicates that it has drill-through data.

2. From a cell that contains drill-down data, click **Actions**, and then **Drill Through**.
3. Click the link in the top left corner **Drill Through to Source**.
4. From the **Drill Through Summary**, you can drill through to the source.

## Cell Icons

Icons in a form's cell provide information. Here's what they mean.

- : The cell has an attachment.
- : The cell has a member formula.
- : The cell has comments.
- : You can drill down on this cell.
- : Select a value from a Smart List.
- : Click the Down Arrow by the member name to select and enter data for other members that are currently suppressed from displaying (either because they have no data and the administrator set the **Suppress Missing Data - Rows** option in form layout, or the administrator specifically excluded the other members during form definition).

## Resolving Data Validation Errors

Your administrator can set up data validation rules to ensure that data meets company guidelines.

For example, your administrator can set:

- Criteria for the data you enter, called *data validation rules*
- Background colors to call your attention to data validation errors
- Messages that tell you what the criteria is

If the data in a form doesn't meet the criteria in data validation rules, follow these steps to fix the errors.

To resolve data validation errors:

1. In a form with errors, hover your cursor over the cell (or on mobile devices, tap into) having a non-default colored background.  
Your administrator typically calls your attention to cells having data validation rules by displaying them with a colored background. Pop-up text displays the cell intersection and the text *This cell contains Data Validation Messages*.
2. Click **Actions**, and then **Data Validation Messages**.
3. If there's more than one message, expand the list, and then click each hyperlink to go to the cell to be corrected.
4. Resolve each error based on the instructions in the data validation message.
5. When you've resolved all errors, save the form.  
The cells' colored backgrounds and Data Validation Messages no longer display.

 **Tip:**

If your Page/POV doesn't include valid members, in the member selector you can clear the current members by clicking



and then **Clear Page Selections**. You can then select members from other dimensions that are included in the valid intersection definition.

## Pushing Data for Reporting

For meaningful and complete reporting, your administrator can set up forms so that you can analyze data coming from different cubes using **Smart Push Details**.

For example, say you have expense data in one cube and revenue planning in another cube. Using **Smart Push Details**, you can quickly push the data from both cubes to a reporting cube. You can then analyze the consolidated data in the reporting cube. Smart Push includes data, comments, attachments, and Supporting Detail.

Your administrator can set up forms to automatically push data when you save the data in the form. Or, the administrator can set up the form so that you can initiate the Smart Push. If so, click **Actions**, then **Smart Push Details**, and then click the link in the Smart Push dialog box. If Smart Push is set to run on save, it doesn't display in Smart Push Details.


 **Note:**

- Smart Push always clears data in the reporting cube before it pushes data.
- In Forms 1.0, a message displays indicating Smart Push was executed on Save. No such message will display in Forms 2.0.

## About Cell Comments

To explain data or provide background, you can add comments to a cell or to a range of cells across multiple dimensions.

To add and view comments, click a cell (or select a cell range), then the **Data** tab, and then

**Comments** . A small triangle in the upper right of a cell indicates that it has a comment.



You can also view comments in a PDF file or a printed report.

 **Note:**

Forms 2.0 does not support adding comments or attachments to formula cells.


## Working with Attachments

You can provide background information on data by attaching a file to a cell.

If your administrator selects the **Enable Cell-Level Document** property for the form, you can add attachments to cells.

Valid attachment file types are as follows:


- Image types permitted: .jpg, .gif, .png, .7z
- Non-image file types permitted: .csv, .xls, .xlsx, .txt, .zip, .jlf, .doc, .docx, .ppt, .pptx, .rtf, .pdf, .gdoc, .gsheet, .gslides, .msg

You could attach several documents to a cell, each with updated assumptions behind the cell's sales data. You cannot attach the same attachment to more than one cell. The attachment icon  indicates that a cell has an attachment.

### Note:

In Forms 2.0, you can attach files with file sizes of up to a maximum of 20 MB to formula cells.

To add an attachment:

1. In the form, select the cell.
2. Click **Actions**, and then **Attachments** .
3. Browse to the file, and then click **Upload**.

To view the attachment, click its hyperlink.


## Searching for Forms, Dashboards, and Infolets

You can easily search for specific forms, dashboards, and infolets from their listing page.

On the listing page for these artifacts, you can toggle between viewing these artifacts by a flat view or a tree view:




Then you can search for forms, dashboards, or infolets using the following search options:

- Use  for a keyword search.

 **Note:**

The flat view displays only the artifacts that meet the search criteria, not the folders that contain them. The tree (or hierarchical) view displays artifacts in the context of the folders that contain them.

- Use  to narrow the search by folder.

To search on another keyword, clear the search criteria by clicking **X** in the Search box, and then click



## Why Cells May Be Read-Only

Learn why you can't change data in some cells.

Grayish blue cells in a data form indicate that you can see, but not change, their values. They are read-only.

To find out why a cell is read-only:

1. Refresh the grid to load the reasons why cells are read-only by clicking **Actions**, and then **Show Reasons for Read-Only Cells**.
2. Put the cursor in a read-only cell, right-click, and then select **View Reasons for Read-Only Cell**.

Reasons why a cell may be read-only:

**Table 14-3 Reasons Why a Cell May Be Read-Only**

Reason Given	Explanation
Not Found or No Access	Either: <ul style="list-style-type: none"> <li>• You don't have access to the data because the administrator has set the <b>Apply Security</b> property, but hasn't granted you Write access permissions to every dimension member of the data intersection. <i>Getting Started with Oracle Enterprise Performance Management Cloud for Administrators</i> describes how the administrator grants global roles, and your business process administration guides describe how the administrator assigns permissions to your business process artifacts.</li> <li>• The cell is read-only because the member isn't found. For example, maybe the member isn't valid for the form's cube or maybe there's a typo in the member name.</li> </ul>
Invalid Intersection	The cell is invalid according to the valid intersection definition.
Cell-Level Security	The cell is secured according to a cell-level security definition.
Read Only Form	The form is read-only.
Formula Cell	The cell has a member formula.
Supporting Detail Cell	The cell has Supporting Detail.
Account Source Cube	The source cube of the account is not the same as the form's cube.



**Table 14-3 (Cont.) Reasons Why a Cell May Be Read-Only**

Reason Given	Explanation
Ad Hoc - Read Only User Role	You're assigned the role Ad Hoc - Read Only User, so you can't change data in the form.
Archive Mode	The application's database is being archived, which temporarily prevents users from entering or changing data.
Attribute, Dynamic Calc, or Label Only	The cell is read-only for a variety of reasons, such as: <ul style="list-style-type: none"> <li>• It's a calculated attribute value.</li> <li>• It's dynamically calculated.</li> <li>• Its storage type is <b>Label Only</b>.</li> <li>• It's an upper-level cell in an Aggregate Storage cube.</li> </ul>
Summary Time Period Ineligible For Spreading	Some possible reasons why the data in a summary time period is read-only: The Period doesn't have members that it can spread to or they're locked, for example.
Read Only Segment	The <b>Segment</b> form property is set to read-only.

## Seeing What's Changed

If your administrator has enabled audit trails for certain items, you can see their history of changes.

For example, if your administrator enabled auditing for **Data**, you could see who changed cell values and when they did so.

To see the history of tracked changes:

1. Click



2. Click



3. Under **Details**, click



## Working in Forms 2.0

### Note:

To work in Forms 2.0, the **Forms Version** setting in application settings must be set to **Forms 2.0**.


Opening a form from the **Data Entry** page, opens the form in the *runtime* environment.

Administrators set who can view what data and who can change it. You can enter or change data only in cells that you have Write permission to (cells with a white background).

These topics contains helpful information as you work with 2.0 forms in the runtime environment:

- [Working with the Global Toolbar in Forms 2.0](#)
- [Working with the Quick Toolbar in Forms 2.0](#)
- [Working with POVs in Forms 2.0](#)
- [Opening the Member Selector in Forms 2.0](#)
- [Performing Calculations Without Having to Submit Your Changes \(Calc on the Fly\)](#)
- [Printing Data in Forms 2.0](#)

### Videos

Your Goal	Watch This Video
Learn about working with data in Forms 2.0.	 <a href="#">Overview: Introduction to Forms 2.0 in Cloud EPM</a>

## Working with the Global Toolbar in Forms 2.0

The icons and menus at the top of each form enable you to view instructions or perform the following actions on the form:

**Table 14-4 Form Global Toolbar**




Object	Description
	<b>Instructions:</b> Displays instructions if they were added for a form.
	<b>Refresh:</b> Updates the data on the form.
	<b>Search:</b> Enter a keyword in the <b>Find</b> box and then click the <b>Previous</b> or <b>Next</b> arrow to find data within the form.

Table 14-4 (Cont.) Form Global Toolbar



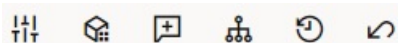
Object	Description
	<p><b>Property Panel:</b> Displays specific information for a form, like Data Validation messages.</p> <p>For ad hoc forms, the <b>Property Panel</b> displays properties for <b>General</b>, <b>Ad Hoc User Options</b>, and <b>Layout</b>.</p> <div><p> <b>Note:</b></p><p>In the future, the <b>Property Panel</b> will be used to show other details such as cell formatting, and so on.</p></div>

Table 14-4 (Cont.) Form Global Toolbar

Object	Description
Actions menu	<p>Displays the following form actions:</p> <ul style="list-style-type: none"> <li>• <b>Edit:</b> Opens the form in the Form Designer. The Form Designer opens in a dynamic tab next to the current tab. You must have the correct permissions to edit forms. Any updates you make to the layout can be visualized after saving in the Forms Designer. When editing forms, you have the option to <b>Save As</b>, which saves the form with a new form name.</li> <li>• <b>Rules &amp; Smart Push:</b> View the rules that are used in a form and launch them. Analyze data coming from different cubes. For Forms 2.0, there are usability improvements for rules: <ul style="list-style-type: none"> <li>– Search functionality is included.</li> <li>– When the rule is executed, prompts can be entered in the right-hand side drawer.</li> <li>– Prompts for multiple rules can be entered in stations and launched all at once.</li> </ul> </li> <li>• <b>Analyze:</b> Perform ad hoc analysis on a form.</li> <li>• <b>Show Reasons for Read Only Cells:</b> Learn why you can't change data in some cells.</li> <li>• <b>Open in Smart View:</b> Work with a form in Oracle Smart View for Office. See Opening Forms and Ad Hoc Grids from Web Applications in <i>Smart View for Office User's Guide 23.100</i>.</li> <li>• <b>New Ad Hoc Grid:</b> Create an ad hoc grid.</li> <li>• <b>Show/Hide Toolbar:</b> Shows or hides the quick toolbar that is displayed below the form title.</li> </ul>
Save	Saves the data in the form.








## Working with the Quick Toolbar in Forms 2.0

In Forms 2.0, instead of using a context (right-click) menu, certain common actions have been placed in the quick toolbar for easier accessibility.



You can perform the following actions using the quick toolbar:

Table 14-5 Quick Toolbar

Icon	Description
	<b>Adjust:</b> Increase or decrease the selected cell data by a positive or negative value, or a percentage value.
	<b>Grid Spread:</b> Specify an amount or percentage by which to increase or decrease values across multiple dimensions, based on the existing values in the target cells. You can select a <b>Proportionally</b> , <b>Evenly</b> , or <b>Fill</b> spread pattern. To use grid spread, your administrator must enable Grid Spread as a form property.
	<b>Comment:</b> Explain data or provide background, and attach external files. You can add comments and attachments to a cell or to a range of cells across multiple dimensions. Multiple comments can be posted for the same cell. The comments popup can be used to upload attachments. Posted comments and attachments can also be deleted.
<div style="border-left: 2px solid #0070C0; padding-left: 10px; background-color: #E6F2FF;">  <b>Note:</b>                      In Forms 2.0, you can attach files with file sizes of up to a maximum of 20 MB to formula cells.                 </div>	
	<b>Line Item Details:</b> Build logic into how a cell value is calculated. Line item details is an upgraded (alternative) functionality for supporting details: <ul style="list-style-type: none"> <li>• Line item details can be invoked from the context (right-click) menu or from the Quick Toolbar</li> <li>• Add child or siblings with provisioning to make arithmetic calculations (add, subtract, multiply, and so on)</li> <li>• Support only for rows (not for columns)</li> </ul>
	<b>Change History:</b> Displays the history of the changes made to the cell data.
	<b>Undo:</b> Cancel the last change you made.

## Working with POVs in Forms 2.0


### About POVs

The information directly below the quick toolbar lets you select different data to work with. This is called the form's point of view (POV).

When a form contains a POV, changes to the POV are automatically applied. If you don't want to automatically apply changes, you can deselect auto-apply for the POV bar in the form's **POV Settings** menu. You can also hide dimension labels on the POV bar, and clear POV selections.

## Changing POV Settings

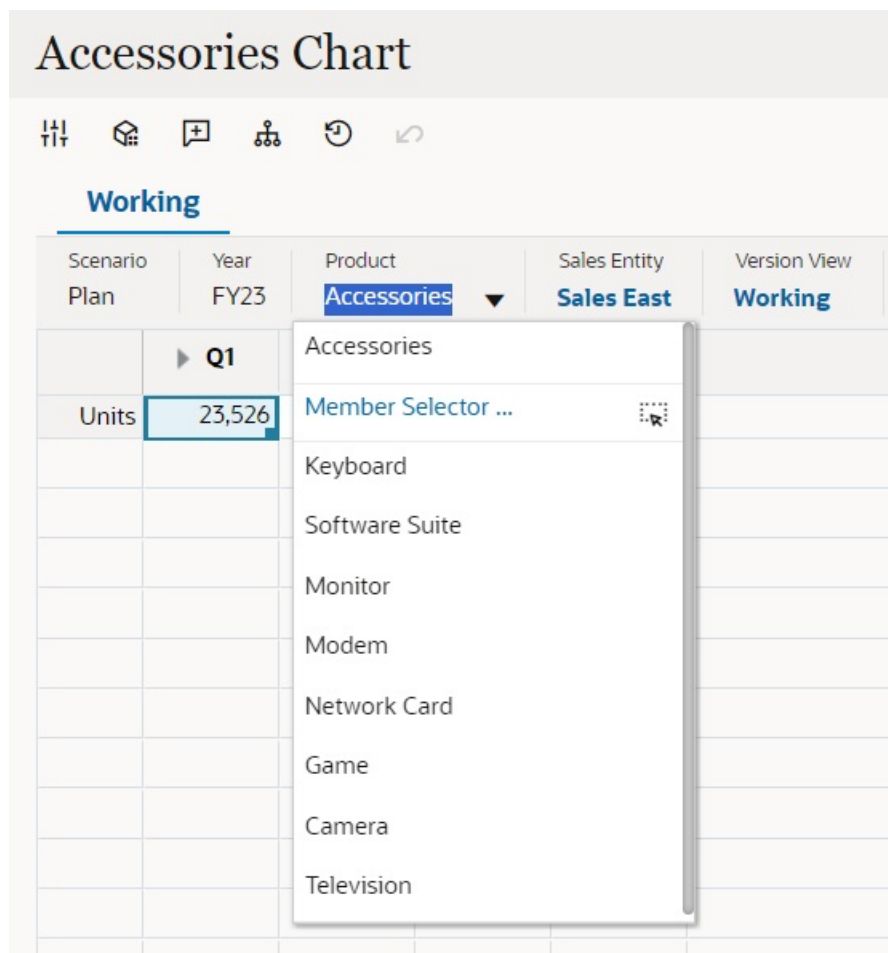
To access POV settings:


1. Click .
2. Select from the following options:
  - **Hide Dimension Labels:** Makes the form look more compact
  - **Auto-Apply:** Automatically refreshes the data grid every time POV values are changed
  - **Clear Selections**

## Searching for POV Members in Forms 2.0

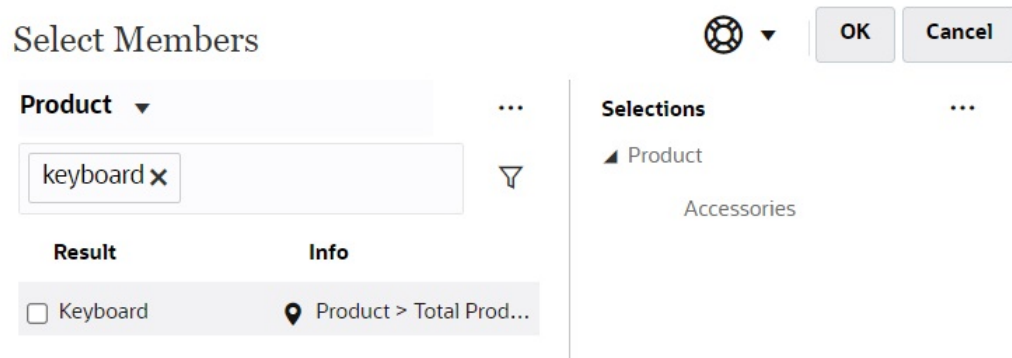
When working in Forms 2.0, you can easily find new POV members. To search, click a POV link. The search interface displays a list of the most recently used members from which you can choose.


**Figure 14-1** Forms 2.0 POV Most Recently Used Members List



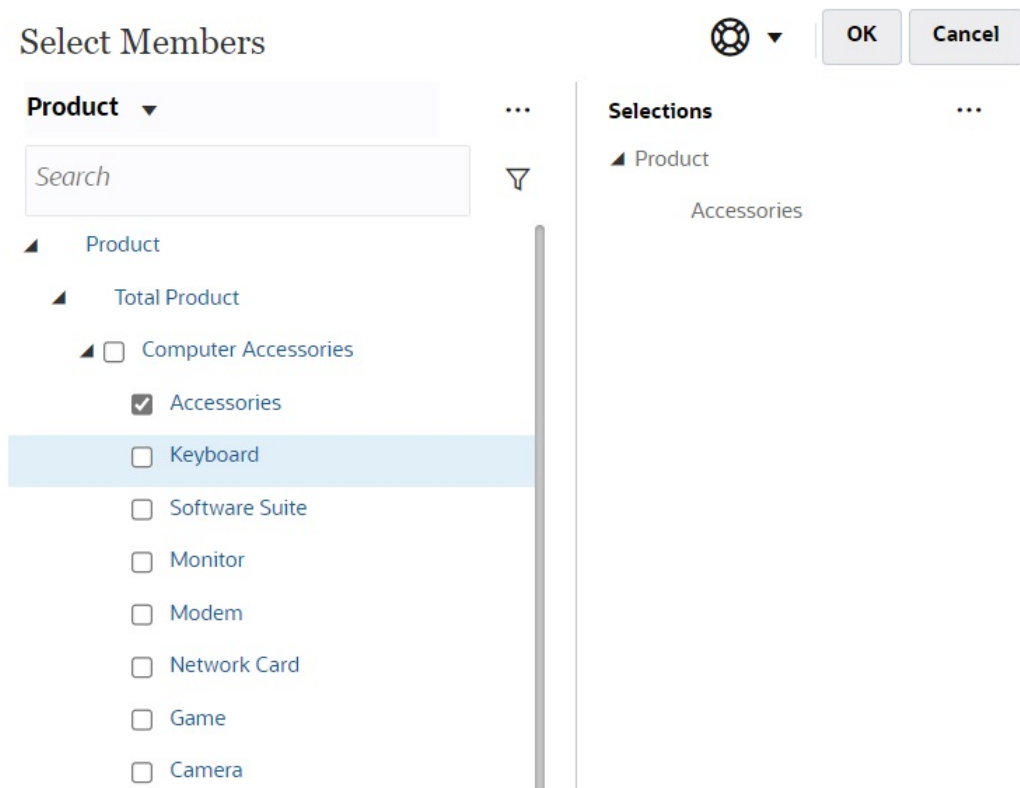
You also can search using the member selector. Click a POV link, then click the member selector icon  to launch the member selector. Members in the member selector are displayed as a hierarchy or you can type a member name in the **Search** box. If a member is located using the **Search** box, you'll see a result displayed under the Search box.

**Figure 14-2 Forms 2.0 Select Members Search Results**



You can view where the member is located within the hierarchy by hovering over the result's **Info** column and clicking .

**Figure 14-3 Forms 2.0 Select Members Search Results in Hierarchy**

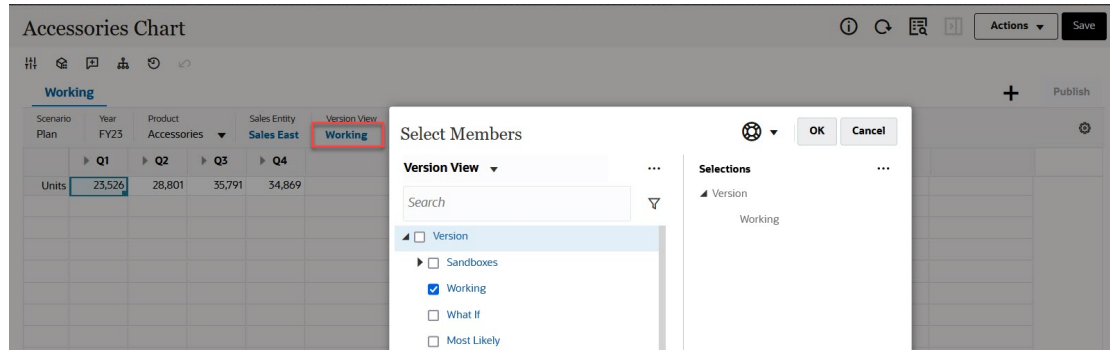


## Opening the Member Selector in Forms 2.0

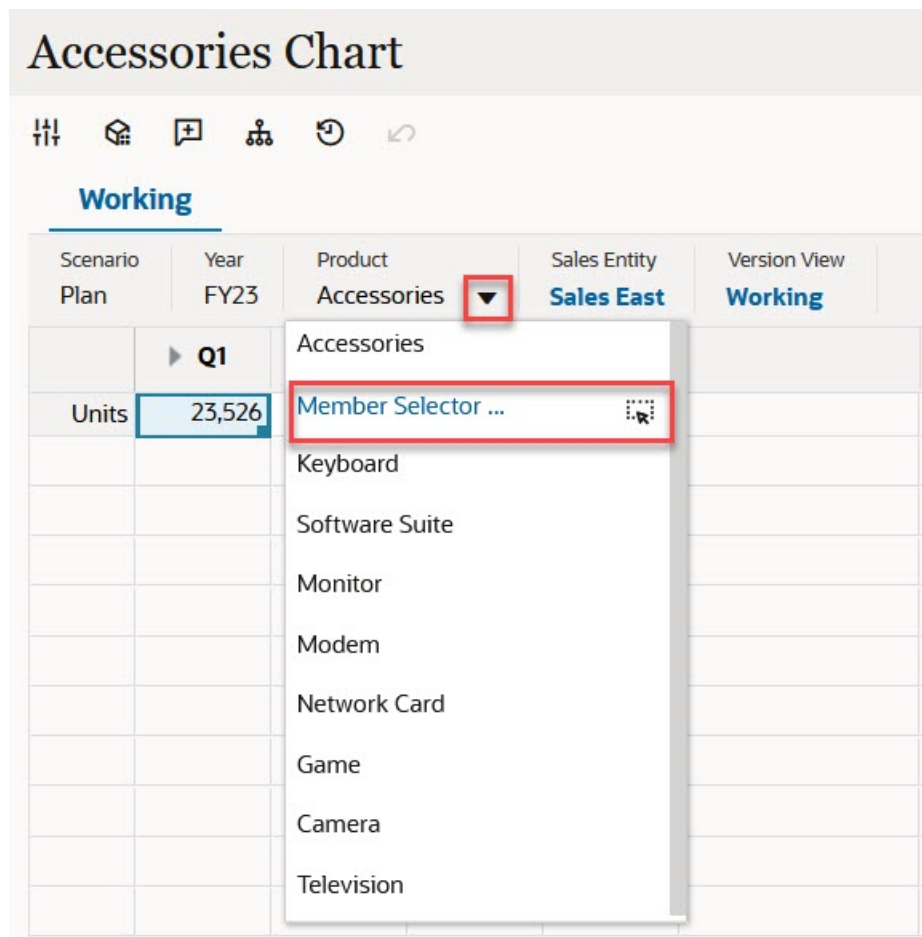
To select members in Forms 2.0, use the member selector.

To open the member selector from a Forms 2.0 form:

Click a member on the POV bar:



You can also click the Page drop-down list, and then select **Member Selector**:





In a business rules run-time prompt, when the prompt is for members, click the **Member Selector** icon:



For more information about using the member selector, see [Using the Member Selector](#).

## Performing Calculations Without Having to Submit Your Changes (Calc on the Fly)

Use calc on the fly to change data values and see calculated changes instantly without submitting the updated values.

When working with Forms 2.0, or during ad hoc analysis, you can perform calc on the fly without having to submit changes to the database and refresh. This capability saves you time and enables you to do multiple changes to the grid at once.

For Forms 2.0, this option is available if your administrator enabled this feature for the form. When this feature is enabled, in a 2.0 version of a form, when you hover over a cell with a member formula attached, you see the member formula associated with the cell and you can perform calc on the fly.

For ad hoc analysis, your administrator might have enabled this feature for you. Or, you can set a display preference for calc on the fly by selecting **Yes** for **Enable User Formulas in Ad Hoc** on the **Display** tab in **User Preferences**. When this setting is enabled, in an ad hoc grid, when you hover over a cell with a member formula attached, you see the member formula associated with the cell and you can perform calc on the fly.

To perform calc on the fly:

1. Open a 2.0 version of a form or an ad hoc grid, and hover over cells to see members with formulas attached, for both member formulas and consolidation operators.

In this example, you can see the formula for **Sales for Jan**.

	Trips	Trips	Trips	Trips
	Jan	Feb	Mar	Q1
International Sales	20	20	20	60
Sales East	30	30	30	90
Sales NorthEast	25	25	25	75
Sales Mid-Atlantic	20	20	20	60
Sales SouthEast	15	15	15	45
Sales South	12	12	12	36
Sales Central	10	10	10	30
Sales West	12	12	12	36
Sales	144	144	144	432

Row Sales Column BaseData Trips Jan member( 403 ):  
 410 +420 +421 +422 +423 +430 +440 +450 +66  
 grid math:  
 = EssSum( essMissing(1/0) , B4, B5, B6, B7, B8, B9, B10, B11 )

There must be enter-able cells (level zero members) in the form or ad hoc grid in order for formulas to appear.

2. Perform calculations as needed, and then move the cursor from the cell:

- Modify values that contribute to a calculated cell. The calculated cell value is updated.
- Modify a calculated value. The cells that are on the form or ad hoc grid that contribute to the calculated cell are updated.  
For formula spreading to work correctly, all source cells for the calculated value must be visible on the form or ad hoc grid.

A color change indicates a modified cell. Cells refresh immediately to display the newly calculated values, without submitting the changes to the database.

In this example of modifying values that contribute to a calculated cell, modify the value of **Sales West** for **Jan**:

	Trips	Trips	Trips	Trips
	Jan	Feb	Mar	Q1
International Sales	20	20	20	60
Sales East	30	30	30	90
Sales NorthEast	25	25	25	75
Sales Mid-Atlantic	20	20	20	60
Sales SouthEast	15	15	15	45
Sales South	12	12	12	36
Sales Central	10	10	10	30
Sales West	15	12	12	36
Sales	144	144	144	432

When you press Tab, calc on the fly calculates updated values for **Sales** for **Jan**, **Q1** for **Sales West**, and **Q1** for **Sales**. Note the color change for the newly calculated values.

	Trips	Trips	Trips	Trips
	Jan	Feb	Mar	Q1
International Sales	20	20	20	60
Sales East	30	30	30	90
Sales NorthEast	25	25	25	75
Sales Mid-Atlantic	20	20	20	60
Sales SouthEast	15	15	15	45
Sales South	12	12	12	36
Sales Central	10	10	10	30
Sales West	15	12	12	39
Sales	147	144	144	435

In this example of modifying a calculated value, modify the calculated value **Sales** for **Feb**:

	Trips	Trips	Trips	Trips
	Jan	Feb	Mar	Q1
International Sales	20	20	20	60
Sales East	30	30	30	90
Sales NorthEast	25	25	25	75
Sales Mid-Atlantic	20	20	20	60
Sales SouthEast	15	15	15	45
Sales South	12	12	12	36
Sales Central	10	10	10	30
Sales West	12	12	12	36
Sales	144	288	144	432

When you press Tab, the values that contribute to the calculated cell are updated. Note the color change for the newly calculated values.

	Trips	Trips	Trips	Trips
	Jan	Feb	Mar	Q1
International Sales	20	40	20	80
Sales East	30	60	30	120
Sales NorthEast	25	50	25	100
Sales Mid-Atlantic	20	40	20	80
Sales SouthEast	15	30	15	60
Sales South	12	24	12	48
Sales Central	10	20	10	40
Sales West	12	24	12	48
Sales	144	288	144	576

- When you've completed all of your modifications and are satisfied with the calculations, you can submit the modified values to the server, or you can discard your changes without submitting them.

You can also perform calc on the fly in Oracle Smart View for Office in 2.0 versions of forms or in ad hoc grids. See *Performing Calculations Without Having to Submit Your Changes* in *Working with Oracle Smart View for Office*.


Review the supported formula functions and operators. See *Supported Functions and Operators for Calc on the Fly* in *Working with Oracle Smart View for Office*.

Not all formula functions support calc on the fly. See *Unsupported Functions and Formulas for Calc on the Fly* in *Working with Oracle Smart View for Office*.

For additional considerations when performing calc on the fly, see *Guidelines and Considerations* in *Working with Oracle Smart View for Office*.

### Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
In this tutorial, you learn how to perform calc on the fly during ad hoc analysis using member formulas. You can work with calc on the fly either in the web or with Smart View.	 <a href="#">Performing Calc on the Fly in Cloud EPM</a>

## Printing Data in Forms 2.0

If you require printing, you can print data in forms 2.0 using the browser's print feature or the Excel Print feature in Oracle Smart View for Office.

To work with a form in Smart View, open a form, click **Actions**, and then select **Open in Smart View**.

See *Opening Forms and Ad Hoc Grids from Web Applications* in *Smart View for Office User's Guide*.

# 15

## Working with Reports

### Related Topics

- [About Reports](#)
- [Accessing Reports and Viewing the Reports Repository](#)
- [Managing Folders and Reports](#)
- [Reports Books and Bursting](#)
- [Managing Fonts](#)

### About Reports

Reports in Enterprise Profitability and Cost Management provide a user-friendly, robust report development framework along with an enriched report viewer experience. Reports, which has previously been available as Management Reporting in the Narrative Reporting business process, is now embedded in the Oracle Enterprise Performance Management Cloud Platform business processes.

To learn about designing and working with reports, see [Learning About Reports](#) in *Designing with Reports for Oracle Enterprise Performance Management Cloud*.



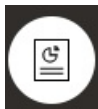
#### Note:

The backslash character ( \ ) is restricted in Reports.


### Accessing Reports and Viewing the Reports Repository

To access reports:

1. From the Home page, select **Reports**.
2. Click a tab on the the left side of the page to view the Reports repository or to to access other documents:



The **Reports** listing page uses the same folder hierarchy as dashboards, infolets, and data entry forms. All artifacts and folders reside under a root folder called **Library**. Reports, books, and bursting definitions are stored in the Reports repository.

To search for Reports or a folder, enter search text in the **Search** box at the top of the pane and click .

On the listing page for **Reports**, you can toggle between viewing reports folders in a flat

view or a tree view:  

 **Note:**

Only administrators can add files (for example, dashboards, infolets, forms, and reports) to the **Library** root folder.



Use the **Documents** page to access 3rd party documents used and generated with Books and Bursting. For example, MS Word and PDF documents inserted in Books, and CSV files used in a bursting definition, along with PDF files generated by a bursting definition.



## Managing Folders and Reports


Reports are managed on the **Reports** listing page with different view options available. Under **Documents**, you can access and maintain 3rd party documents used and generated with Books and Bursting; for example, MS Word and PDF documents inserted in Books and .CSV files used in a bursting definition, along with PDF files generated by a bursting definition.

Reports and Documents are grouped into folders. When viewing the Reports listing you can:

- Search by a report artifact or document
- Filter by a folder

For report artifacts, you can filter by the type (Report, Snapshot, Book, Bursting Definition)

- Switch between a folder tree view or a flat list view:  

Report designers can perform the following folder and report management tasks by clicking  for folders or for individual reports:


- For folders:
  - **Upload file** (Documents only)
  - **Create Folder**
  - **Delete**
  - **Rename**
  - **Move to**
  - **Assign Permissions**
- For reports, books, and bursting definitions:
  - **Open** (reports and books only)
  - **Edit**
  - **Rename**
  - **Copy As**

- **Delete**
- **Move To**
- **Assign Permissions**
- For documents:
  - **Properties**
  - **Copy As**
  - **Delete**
  - **Move to**
  - **Assign Permissions**

The **Documents** listing page supports the following file types and extensions (the default file size limit is 5mb, except for `.PDF` which supports 100mb):

- Word (`.DOC`, `.DOCX`)
- Excel (`.XLS`, `.XLSX`)
- Comma Separated Values (`.CSV`)
- PDF (`.PDF`)
- Text (`.TXT`)
- PowerPoint (`.PPT`, `.PPTX`)

To upload a 3rd party file in **Documents**:

1. In the **Documents** listing, select a destination folder, and then either:
  - Click **Upload** in the top right of the **Documents** panel.
  - Click  and select **Upload File**.
2. In **Upload File**, select a file to upload from your local file system, and then click **OK**. The file will be uploaded to the selected folder.

To download a 3rd party file in **Documents**, in the **Documents** listing, browse to the desired file location and click on the file name to download it.

## Reports Books and Bursting

Reports includes books and bursting functionality. Books provide the ability to group together one or more reports, books, and other documents, to generate a single PDF output. Bursting enables you to run a single report or book for more than one member of a single dimension for one data source, and publish a PDF output for each member. You can schedule a bursting definition as a scheduled job. To learn how to work with the books and bursting features in Reports, see the following topics in *Designing with Reports for Oracle Enterprise Performance Management Cloud*:


- [Working with Books](#)
- [Working with Bursting](#)

## Managing Fonts

Oracle recommends that you upload any TrueType fonts that your company uses to produce reports. You can upload individual font files or zipped files containing multiple TrueType fonts.

The font file must be a TrueType font and cannot already exist in the font folder structure. If you do upload a duplicate font, you will receive an error message indicating the duplicate (or invalid) font file. If you uploaded multiple fonts in a zip file, all other valid files are loaded.

To upload fonts:

1. From the Home page, select **Application**, and then **Settings**.
2. On the **Application Settings** page, under **System Settings**, scroll down to **Set Reporting Options**, and then click **Report Settings**.
3. On the **Settings** page, click **Manage Fonts**.
4. On the **Fonts** page, click , and then select **Upload File**.
5. Click **Browse** in the **Upload File** dialog box to navigate to the TrueType fonts that you want to upload, and then click **OK**.

 **Note:**

If you need to upload more than one font, create a zip file. Be aware that it might take some time to perform the upload depending on the size of the font file.

# 16

## Working with Dashboards

### Related Topics

- [Designing Dashboards](#)  
Design dashboards that show summary data to users. Dashboards enable users to chart, evaluate, highlight, comment on, and even change key business data, as well as add and edit rules.
- [The Power of Dashboards](#)
- [Creating and Managing Dashboards](#)
- [About Dashboard Versions](#)
- [Viewing Dashboards](#)
- [Converting Dashboard 1.0 Dashboards to 2.0](#)  
Learn how to convert Dashboard 1.0 dashboards to Dashboard 2.0 dashboards.
- [Creating and Managing Dashboards 1.0](#)
- [Concepts in Designing 1.0 Dashboards](#)
- [Creating Dashboard 1.0 Dashboards](#)
- [Creating Dashboards Containing Master Forms and Details](#)
- [About Your Dashboard's Layout - Version 1.0](#)
- [About the Gauge Chart Type](#)
- [About the Tile Chart Type](#)
- [Customizing Dashboard Colors](#)
- [About Global and Local POVs in 1.0 Dashboards](#)
- [Dashboard POVs and Valid Intersections](#)
- [Creating and Managing Dashboards 2.0](#)
- [Concepts in Designing Dashboard 2.0 Dashboards](#)
- [Object Palette](#)
- [Dashboard Toolbar](#)
- [Dashboard Workspace](#)
- [Properties Panel](#)
- [Dashboard Components](#)
- [Considerations for Dashboard 2.0](#)
- [Creating Dashboard 2.0 Dashboards](#)
- [Working with the Member Selector When Designing Dashboards 2.0](#)  
When designing Dashboard 2.0 dashboards, you can easily search for and select new dimension members using the member selector.
- [About Forms 2.0 Grids in Dashboard 2.0](#)



- [About the Geomap Chart Type](#)
- [About the Pyramid Chart Type](#)
- [About the Waterfall Chart Type](#)
- [Using Tables in Dashboards](#)
- [About the Gauge Chart Type for Dashboard 2.0](#)
- [About the Radar Chart Type for Dashboard 2.0](#)
- [About the Combination Chart Type for Dashboard 2.0](#)
- [About the Tile Chart Type for Dashboard 2.0](#)
- [About Global and Local POVs in Dashboard 2.0](#)
- [About Quick Analysis](#)
- [Using Dashboards to Work with Data](#)
- [Understanding Dashboards](#)  
Dashboards give you an overview to key information and let you enter, change, and save data.
- [About Dashboard Versions](#)
- [Viewing Dashboards](#)
- [Working with Dashboard 1.0 Dashboards](#)
- [Working with Dashboard 2.0 Dashboards](#)  
Helpful information about working with Dashboard 2.0 dashboards in the runtime environment.
- [Working with the Dashboard 2.0 Global Toolbar](#)
- [Working with Dashboard 2.0 Components](#)
- [Working with Forms 2.0 Grids in Dashboard 2.0](#)  
In Dashboard 2.0, you can work directly with data in forms grids if the underlying form is a Forms 2.0 form.
- [Drilling Through on Charts and Legends](#)
- [Working with POVs in Dashboard 2.0](#)
- [Opening the Member Selector in Dashboards 2.0](#)  
To select members in Dashboards 2.0, use the member selector.
- [Working with Dashboard 2.0 Dashboards in Navigation Flows](#)
- [Working with Master Forms and Details in Dashboard 2.0 Components](#)
- [Support for Valid Intersections in Dashboard 2.0 Dashboards](#)
- [About Quick Analysis](#)

## Designing Dashboards

Design dashboards that show summary data to users. Dashboards enable users to chart, evaluate, highlight, comment on, and even change key business data, as well as add and edit rules.

### Related Topics

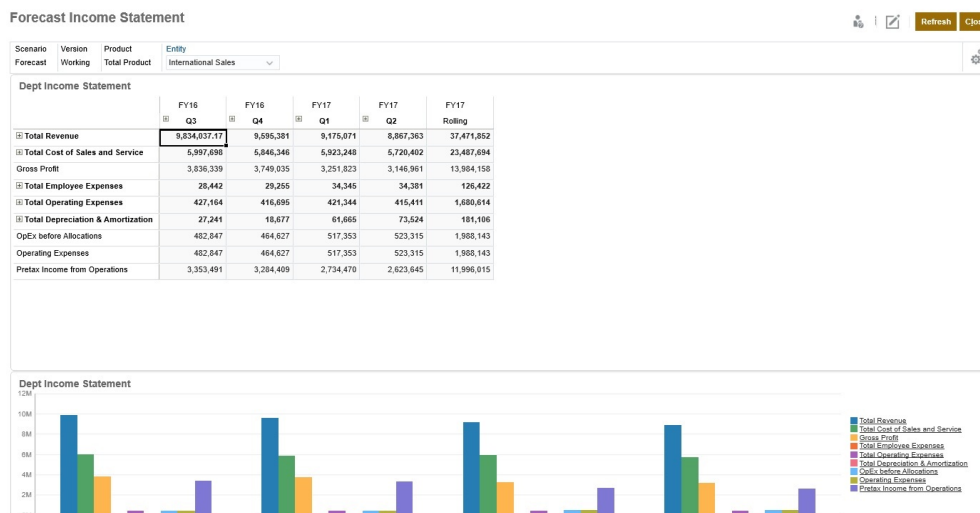
- [The Power of Dashboards](#)

- [Creating and Managing Dashboards](#)
- [About Dashboard Versions](#)
- [Viewing Dashboards](#)
- [Converting Dashboard 1.0 Dashboards to 2.0](#)  
Learn how to convert Dashboard 1.0 dashboards to Dashboard 2.0 dashboards.
- [Creating and Managing Dashboards 1.0](#)
- [Concepts in Designing 1.0 Dashboards](#)
- [Creating Dashboard 1.0 Dashboards](#)
- [Creating Dashboards Containing Master Forms and Details](#)
- [About Your Dashboard's Layout - Version 1.0](#)
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- [About the Tile Chart Type for Dashboard 2.0](#)
- [About Global and Local POVs in Dashboard 2.0](#)
- [About Quick Analysis](#)

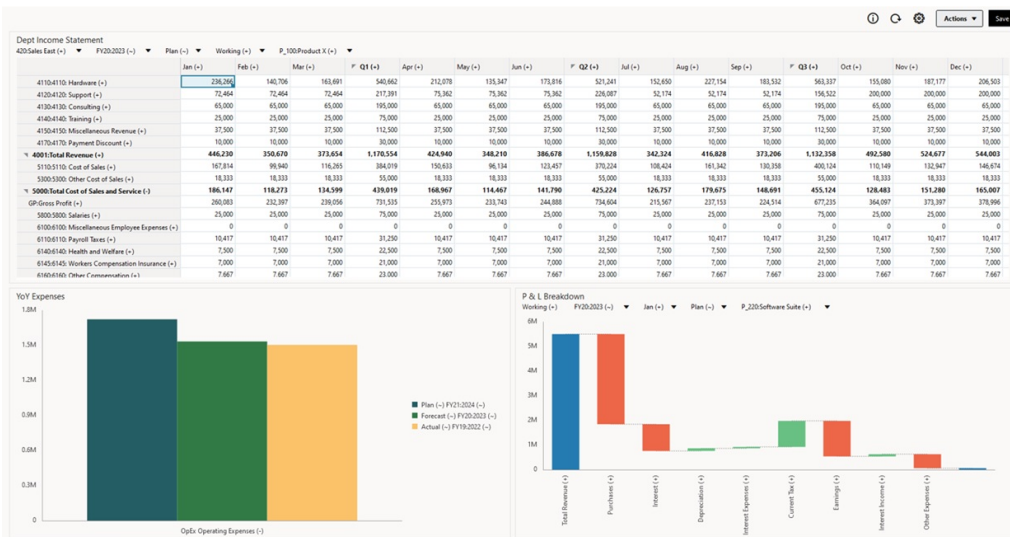
# The Power of Dashboards

Dashboards typically provide an overview to users at the beginning of their planning and forecast process by showing summary data. The versatility of dashboards enables users to chart, evaluate, highlight, comment on, and even change key business data. They can change a driver in a form that's in a dashboard and immediately see its impact in other forms and charts:

## Sample Dashboard 1.0



## Sample Dashboard 2.0



You create dashboards by simply dragging and dropping a variety of objects from the library panel on the left to the dashboard workspace.

With dashboards, you can:

- Include multiple forms that dynamically update, including their associated charts, as users change data in the form.
- Include tiles that display a specific value from the cube. To provide the value for each tile, you can specify a form or a cell intersection as a data source.
- Switch easily between using the design environment and the runtime environment, so you can see exactly what the dashboard user will see.
- Depict data interactively with a wide variety of chart types such as area, bar, bubble, column, combination bar and line, doughnut, funnel, gauge, scatter, radar, and so on.
- Control the dashboard's layout.
- Depending on the form design, enable users to drill down into underlying detail and select which members to work with.
- Include user variables in the global POV bar and the local POV.
- In certain charts, customize the colors and line width, and show or hide gridlines.
- Add links to dynamically display external Web pages.
- Include explanations of data called *Commentary* in the dashboard.
- Tag a form as master and then filter members from the master form to detail forms or charts within the same dashboard.
- Change legend and label positions in charts.
- In Dashboard 2.0:
  - Add up to 12 components within a dashboard
  - Add up to 10 tiles in a tile chart type
  - Add hierarchical labels in charts
  - Use a logarithmic scale in relevant chart types
  - Add a secondary Y-axis in relevant chart types
  - Render the dashboard in Default, Light, and Dark background colors using the Style property
  - Use grid display with write-enabled grids (used with Forms 2.0)
  - Enjoy other usability improvements such as more screen space, options to open and edit a form directly, option to edit a dashboard without data, automatically apply POV changes, and hide dimension names
  - Improved Rules on Save with dashboards: with/without runtime prompts before/after Load/Save
  - Migrate easily from Dashboards 1.0

**Note:**

Dashboard 1.0 dashboards are deployed with Forms 1.0, even when the **Forms Version** setting is **Forms 2.0**.

When users use a dashboard (referred to as *runtime*), they can set many aspects of the components, such as the type of chart displayed, the dashboard's title, and so on. A toolbar is

available for each component. Dashboard users can change and save data, run rules, and so on. However, changes made in runtime to the chart type options aren't saved for the next session. Clicking **Save** in runtime saves the data, but not the dashboard definition.

Service Administrators create, redesign, delete, and assign permissions to dashboards and dashboard folders.

## Creating and Managing Dashboards

### Related Topics

- [About Dashboard Versions](#)
- [Viewing Dashboards](#)
- [Converting Dashboard 1.0 Dashboards to 2.0](#)  
Learn how to convert Dashboard 1.0 dashboards to Dashboard 2.0 dashboards.



## About Dashboard Versions

Dashboards are currently available in two versions:

- **Dashboard 1.0:** Uses Oracle Application Development Framework (Oracle ADF) technology
- **Dashboard 2.0:** Uses Oracle JavaScript Extension Toolkit (Oracle JET) technology

Both dashboard versions currently coexist in the same business process at the same time. Dashboard 1.0 uses Oracle ADF technology and the behavior of the Oracle ADF-based dashboards remains unchanged. You can still create and update these dashboards in your business process as you did before. Dashboard 2.0 uses the existing Dashboard functionality and enhances it with Oracle JET technology for faster rendering, sophistication, ease of use, improved flexibility, better visualization, and additional designs.

To help you differentiate between the dashboard versions on the **Dashboards** listing page, we've provided an icon in front of each dashboard:

-  : Dashboard 1.0
-  : Dashboard 2.0

### Dashboard 2.0 Designer Features

Dashboard 2.0 Designer supports:

- More chart types than Dashboard 1.0; for example, Waterfall, Pyramid, and Geomap and sub-chart types for Radar, Combination, and Gauge charts are all Dashboard 2.0 features
- Creating tables in dashboards with visual inline views of data, called Spark Charts
- Quick Analysis, which lets you add components to dashboards without having a prebuilt form

You create an ad hoc query by typing member names in the Search bar or using the Member Selector, and then you control the layout of the query in the Layout tab of the Properties panel.

- Working directly with data in form grids if the underlying form is a Forms 2.0 form
- A URL type of dashboard component
- A Commentary type of dashboard component with a text editor
- A custom formatted dashboard title
- Background colors for URL, Commentary, and Grid component types
- Grid chart type option to render Forms 2.0 inside Dashboards 2.0
- A new **Associations** tab in the Properties panel for associating global rules
- Multiple charts for Gauge, Pie, and Donut chart types
- New menu options for directly opening and editing forms from within dashboard components
- An Information icon for forms and dashboards. Drop any form into a dashboard and see its information.
- The ability to resize the Properties panel
- The ability to set the background color for each dashboard component
- An option to remove the component title, using the saved space for visualizations
- An increased number of dashboard components (up to 12)
- An increased number of tiles (up to 10)
- The ability to edit without data
- A customized cell visualization limit of up to 10,000 cells with any row x column combination, such as:
  - 100 rows x 100 columns=10,000 cells
  - 1000 rows x 10 columns=10,000 cells
  - 250 rows x 40 columns= 10,000 cells
- The ability to select a dashboard **Style**. Options are **Default**, **Light**, and **Dark**.
- Options to show and hide borders between dashboard components and POV bars
- The new Oracle JET member selector
- A surface Designer in Dynamic Tabs

To review considerations before switching to Dashboard 2.0, see [Considerations for Dashboard 2.0](#).

## Viewing Dashboards

To view the **Dashboards** page:

1. On the Home page, click **Dashboards**.
2. To open a dashboard, click the dashboard's name.

This opens the dashboard in the *runtime* environment.

 **Note:**

If you've selected a Dashboard 2.0 dashboard and you see an `Error` during Dashboard 2.0 component initialization message, the dashboard has Forms 2.0 forms associated with it. You must ensure that Forms 2.0 are enabled before you can view the dashboard.

To enable Forms 2.0, click **Application**, then **Settings**, and then under **Other Options**, find **Forms Versions**, select **Forms 2.0**, and then click **Save**.

**Features of the Dashboards Page**

On the **Dashboards** page:

- Folders are supported. The **Dashboards** page uses the same folder hierarchy as infolets and data entry forms and all artifacts and folders reside under a root folder called **Library**. You cannot delete or rename the **Library** folder.

 **Note:**

Only administrators can add files (for example, dashboards, infolets, forms, reports, and so on) to the **Library** root folder.

- To help you differentiate between the dashboard versions on the **Dashboards** page, we've provided an icon in front of each dashboard:




– : Dashboard 1.0



– : Dashboard 2.0

- You can toggle between viewing dashboards by a flat view or a tree view:



- The **Dashboards** page can be filtered by type. Click , and then select from the following filter options:

- **All Types** (default)
- **Dashboard 1.0**
- **Dashboard 2.0**

- To search for a specific dashboard, click



to search by keywords or  to narrow the search to specific library folders.

## Dashboards Page Actions Column

On the right side of the **Dashboards** page there is an **Actions** column. Clicking on the **...** icon next to the dashboard or folder, displays the following actions:

- Folder Actions:
  - **Assign Permission:** Assigns access permissions to the folder. Folder permissions apply to all items within that folder, even to items that may not be visible in the list.
  - **Create Dashboard:** Creates a Dashboard 1.0 dashboard.
  - **Create Dashboard 2.0:** Creates a Dashboard 2.0 dashboard.
  - **Create Folder:** Creates a new folder.
  - **Delete:** Deletes a folder. The folder must be empty to delete it.
  - **Rename:** Renames a folder. The folder cannot be renamed if it contains other folders.
  - **Move to:** Moves the folder to another location in the folder hierarchy.
  - **Convert All Dashboards to 2.0:** Finds any Dashboard 1.0 dashboards within the folder hierarchy, and converts them to Dashboard 2.0 dashboards.
- Individual Dashboard Actions:
  - **Edit:** Opens the dashboard in the Dashboard Designer with the underlying form data. The dashboard opens in a dynamic tab.
  - **Edit without Data** (Dashboard 2.0 option only): Opens the dashboard in the Dashboard Designer without the underlying form data so you can more easily perform such actions as realigning the dashboard components and tiles. The dashboard opens in a dynamic tab.
  - **Rename:** Renames a dashboard.
  - **Copy As:** Copies a dashboard with a new name. The dashboard is copied to the listing directly under the original dashboard.
  - **Delete:** Deletes a dashboard.
  - **Move to:** Moves a dashboard to another folder.
  - **Assign Permission:** Assigns access permissions to the dashboard.
  - **Convert to Dashboards 2.0** (Dashboard 1.0 option only): Converts the dashboard to a Dashboard 2.0 dashboard.
  - **Copy URL:** Enables you to copy and share the direct URL for a dashboard. .

## Converting Dashboard 1.0 Dashboards to 2.0

Learn how to convert Dashboard 1.0 dashboards to Dashboard 2.0 dashboards.

If your application currently uses Dashboard 1.0, you can convert them to Dashboard 2.0.

You convert dashboards on the **Dashboards** listing page at the individual dashboard level or at the folder level. For example, if you wish to convert all dashboards in the application from 1.0 to 2.0, you can select the top level Library folder and convert them all.



 **Note:**

- After converting to Dashboard 2.0, you cannot convert your dashboards back to Dashboard 1.0.
- The conversion process does not change the dashboard names. Navigation flows will still work as they did before the conversion.
- After converting to Dashboard 2.0, dynamic POVs are displayed first instead of fixed POVs.

To convert Dashboard 1.0 to Dashboard 2.0:

1. On the Home page, click **Dashboards**.
2. Navigate to the folder or to the individual Dashboard 1.0 dashboard that you'd like to convert, then select from the following options:
  - To convert an individual dashboard, click **...** to the right of the dashboard, and then select **Convert to Dashboards 2.0**.
  - To convert all dashboards within a folder, click **...** to the right of the folder, and then select **Convert All Dashboards to 2.0**.

 **Note:**

- Very old dashboards might include a dashboard definition with a component width value that is no longer supported. This could result in an unexpected dashboard rendering after converting an old dashboard to Dashboard 2.0.

To resolve this issue, we recommend any of the following workarounds:

  - Open the original dashboard in Dashboard (1.0), edit the dashboard, and then save it. The dashboard will be automatically saved with the corrected component width values, and then it can be converted to Dashboard 2.0.
  - Create a new dashboard in Dashboard (1.0) with the same set of forms and charts and the same settings, then convert the dashboard to Dashboard 2.0.
  - Create a new dashboard in Dashboard 2.0 with the same artifacts and settings.
- Dashboards containing master forms and details that were converted to Dashboard 2.0 prior to the 23.11 update might display two **Apply Context** menu options in a grid's context menu. This issue was fixed in 23.11.

## Creating and Managing Dashboards 1.0

- [Concepts in Designing 1.0 Dashboards](#)
- [Creating Dashboard 1.0 Dashboards](#)

- [Creating Dashboards Containing Master Forms and Details](#)
- [About Your Dashboard's Layout - Version 1.0](#)
- [About the Gauge Chart Type](#)
- [About the Tile Chart Type](#)
- [Customizing Dashboard Colors](#)
- [About Global and Local POVs in 1.0 Dashboards](#)
- [Dashboard POVs and Valid Intersections](#)

## Concepts in Designing 1.0 Dashboards

Helpful information as you design 1.0 dashboards:



- On the left is the design palette. Simply drag and drop objects from the palette to the canvas.

### Tip:

Drag an object to a border line. The drag icon changes to a plus sign when you can drop the object in an allowed space. See [About Your Dashboard's Layout - Version 1.0](#).

- On the top right are settings for the entire dashboard:



- Click **Settings**




to set these general aspects of the dashboard:

**Table 16-1 Dashboard General Settings**



Option	Description
<b>Use name as title</b>	By default, this option is selected. Clear this option to give the dashboard a title with custom formatting.
<b>Borders</b>	When you create a new dashboard, borders are hidden by default. To show borders in newly-created dashboards, select <b>Show</b> .
<b>Layout</b>	Select <b>Fixed</b> (default) or <b>Flexible</b> .
<b>POV Bars</b>	Select <b>Show</b> (default) or <b>Hide</b> .
<b>Global POV Bar</b>	Select <b>Enable</b> (default) or <b>Disable</b> .

For information about POVs, see [About Global and Local POVs in 1.0 Dashboards](#).

- When you hover over a dashboard object, a toolbar for that object displays in the upper right corner: 

 **Note:**


Dashboard (1.0) hover icons provide options such as **Instructions** (available only if instructions are configured for a form), **Actions**, **Save**, **Refresh**, **Settings**, and **Maximize**, depending on the type of object.


- As you create a dashboard, click **Runtime**  so that you can immediately see how the dashboard looks and works to a dashboard user. To return to designer mode to continue designing the dashboard, click .
- By default, missing or suppressed data is plotted as zeros in graphs. You can clear the **Plot Missing Values as Zero** setting to ignore missing or suppressed data in certain chart types so it's no longer plotted as zeros.
- The listing page for dashboards supports folders. Folders enable you to assign permissions to all dashboards within a folder rather than assigning permissions to each individual dashboard. The dashboard listing page uses the same folder hierarchy as infolets and data entry forms and all artifacts and folders reside under a root folder called **Library**.

 **Note:**

Only administrators can add files (for example, dashboards, infolets, forms, reports, and so on) to the **Library** root folder.

- On the listing page for dashboards, you can toggle between viewing dashboards by a flat view or a tree view:  

Then you can search for dashboards using **Search** . The flat view displays only the dashboards that meet the search criteria, not the folders that contain them. The tree (or hierarchical) view displays dashboards in the context of the folders that contain them.

To search on another keyword, clear the search criteria by clicking  in the **Search** box.

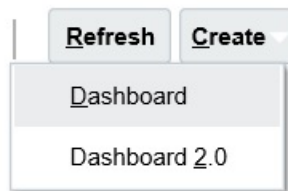
## Creating Dashboard 1.0 Dashboards

Need help deciding which dashboard version to choose? See [About Dashboard Versions](#).

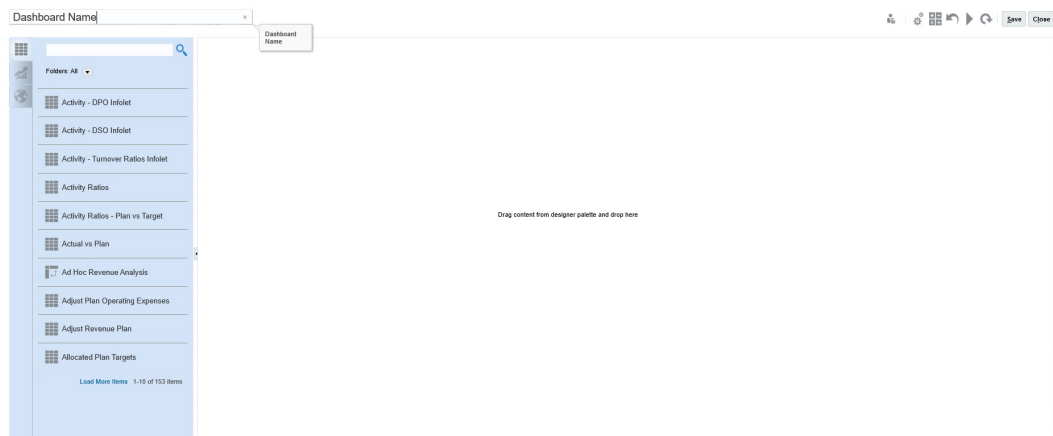
### Note:

To create a Dashboard 2.0 dashboard, see [Creating Dashboard 2.0 Dashboards](#).

1. From the Home page, click **Dashboards**, and then click **Create**.



2. From the options provided, select **Dashboard**.




3. Enter a name by clicking the default dashboard name and entering a new name in the input box.

You can give the dashboard a title with custom formatting, click **Settings**, clear **Use name as title**, and then enter the title and set formatting the dialog box.

4. From the design palette on the left, drag and drop objects onto the dashboard canvas. Select from these objects:

Table 16-2 Dashboard Objects

Object	Description
<b>Forms</b>	<p>Select forms to include in the dashboard by navigating to the forms folders or by searching for them by name. To view instructions for forms after they've been added to the dashboard, hover over the form and click <b>Instructions</b></p> <p></p> <p>.</p> <p>The access permissions set for forms are honored in dashboards.</p>
<b>Chart Types</b>	<p>Select the chart types to include in the dashboard. When first added, a selected chart has sample data. You then associate it with a form as its data source. When you link a chart to a form, users can immediately see the impact of changing data in the form on the associated charts.</p> <p>By default, missing or suppressed data is plotted as zeros. For selected chart types (Area, Bubble, Combination, Line, Radar, and Scatter), you can disable this setting by clearing the <b>Plot Missing Values as Zero</b> option in the chart's settings. When this option is cleared, the missing or suppressed data is ignored and is no longer plotted for those chart types.</p> <p>The Combination chart type alternates displaying row data with vertical bars and lines in the chart. For example, the data in row 1 of a form is displayed as a bar and the data in row 2 as a line, with alternating chart types for even and odd-numbered rows. Although the Combination chart type can display up to 20 rows of data, it's particularly useful when you want to compare two categories of data. For example, you want to compare Germany and France's average exchange rates over several years, so the form has Germany rates in row 1 of the form, and France's rates are in row 2.</p> <p>For information on the Gauge chart type, see <a href="#">About the Gauge Chart Type</a>.</p> <p>The Tile chart type, sometimes called <i>performance tiles</i>, lets you select specific values from the cube to display. See <a href="#">About the Tile Chart Type</a>.</p>
<b>Commentary</b>	<p>Select <b>External Artifacts</b>, and then <b>Commentary</b>. Enter text that explains the data or charts. Note that the text limit is 2000 characters, including any formatting tags that are added for rich text.</p>
<b>URL</b>	<p>Dynamic web page summary. Select <b>External Artifacts</b>, and then <b>URL</b>. Insert only external site URLs starting with the <code>https://</code> security protocol. Don't use internal or relative URLs or URLs for unconsenting third party sites such as google.com.</p>

5. Customize the dashboard using the dashboards settings and the objects' hover toolbar, and then click **Save**.

See [About Your Dashboard's Layout - Version 1.0](#).

You can easily duplicate and modify a dashboard using **Copy As** on the Dashboard list page. Select the Actions icon next to the dashboard you want to copy.

## Creating Dashboards Containing Master Forms and Details

You can design dashboards that have one master form and multiple detail (or target) objects (forms or charts). When you do so, the selection of members in the master form automatically filters to the members in the target objects, and the target objects show only the details that are relevant to the members highlighted in the master form.

Considerations when designing dashboards with master forms and target objects:

- Master forms must always be a form (you cannot tag a chart as a master form).
- The target objects can be forms or charts.
- The dashboard containing a master form must always contain more than one object.
- Only one form on a dashboard can be tagged as master. If you want to tag a different form on a dashboard as master, you must first untag the existing master form.

To create a dashboard containing a master form and target objects:

1. Create a dashboard with at least one form and one or more target objects.  
See [Creating and Managing Dashboards](#).
2. Ensure the dashboard is in designer mode by clicking **Actions**, and then clicking **Edit**.
3. Select the form on the dashboard that you want to designate as master, click the Settings icon for that form, and then select **Tag as Master**.

To filter the data in the target forms or charts that is relevant to the data in a master form, right-click the relevant data in the master form and select **Apply Context**.

## About Your Dashboard's Layout - Version 1.0

About setting up a dashboard layout in version 1.0:

- The first object you drag occupies the whole canvas.
- Then drag objects to the left, the right, the top, or the bottom of the existing object.
- The dashboard canvas provides two types of drop zones: One to place two objects next to each other, each occupying half the space, and the other to place three objects, each occupying a third of the space.
- You can design a dashboard with objects to display vertically, horizontally, and each can have its own size.
- To resize an object that uses **Flexible** layout, drag the object's border. You can also click an object's handle to expand it, and then click the handle again to restore the object to its original size.
- To resize an object that uses **Fixed** layout, set its width or height percentage in **Settings**.
- The form layout can be asymmetric.
- In runtime mode, if a user doesn't have access to a form or if the form is missing, then an adjacent object takes its space. In designer mode, all empty objects are displayed so that the designer can choose to remove them.

## About the Gauge Chart Type

Gauge chart types are handy for showing whether data values fall within an acceptable range or not. You set the maximum value, the range maximums, and the gauge displays ranges as red, yellow, and green to help you quickly assess a current value. So, gauge chart types help you identify problems in important data points or measures. For example, you could use a gauge to display the current sales, where the thresholds are set to represent the sales targets.

If the form has multiple values, you can display multiple gauges, up to a maximum of 36 (the values in the first 6 rows and the first 6 columns in the form). The remaining values in the form are ignored. If you want the gauge chart to display only one value, then associate it with a form that has only one cell value.

You can select either a dial gauge or a status meter gauge. You can display a status meter gauge using either horizontal or vertical bars.

Dashboard designers can set:

- **Maximum Value:** The highest value on the gauge. The dashboard designer sets the **Maximum Value** as a default, and then users can temporarily change it at runtime. If the dashboard designer doesn't specify a maximum value, the application automatically sets the maximum value as greater than the value on the gauge.
- **Thresholds:**
  - Low, Medium, and High thresholds: To visually indicate whether a measure lies in the acceptable range or not, these thresholds enable you to display the gauge in red, yellow and green based on the specified values.
  - Thresholds where low values are desirable.
  - Appropriate labels for the thresholds that are displayed when hovering over the thresholds in the gauge.

**Settings**
Close

Charts
Data
Gauge

Maximum Value

Goal  High values are desirable  Low values are desirable

Low Threshold	<span style="display: inline-block; width: 15px; height: 15px; background-color: #c00000; border: 1px solid #000;"></span>	Maximum Value <input style="width: 60px;" type="text" value="1000"/>	Label <input style="width: 60px;" type="text" value="Low"/>
Medium Threshold	<span style="display: inline-block; width: 15px; height: 15px; background-color: #ffa500; border: 1px solid #000;"></span>	Maximum Value <input style="width: 60px;" type="text" value="1500"/>	Label <input style="width: 60px;" type="text" value="Medium"/>
High Threshold	<span style="display: inline-block; width: 15px; height: 15px; background-color: #008000; border: 1px solid #000;"></span>	Maximum Value <input style="width: 60px;" type="text" value="1700"/>	Label <input style="width: 60px;" type="text" value="High"/>

When setting the Maximum Value for Low, Medium and High Thresholds for a gauge showing % values, use decimal values. For example, enter .25 for 25%. Also, for percentage gauges, always set the Maximum Value to 1.





 **Note:**

If a cell in the form is missing a value, no gauge is displayed for that cell. Also, you must specify at least 2 consecutive thresholds. The application needs the middle threshold value to calculate the chart.

## About the Tile Chart Type

A tile is a chart type that lets you select specific values from the cube to display. In addition to using a form as a data source, you can directly enter a cell intersection that provides the value for a tile. You can have up to 6 tiles across, and 4 rows down in a dashboard, and give them a title. Until you associate a tile with data, it displays sample data.

With a form as the data source for a tile:

- You can have up to six tiles per object.
- The values in the first column (up to the sixth row) are used to create the tiles.

 **Note:**

Sometimes in a form, the first column may be collapsed (hidden) when viewed as a grid. But the collapsed column is still considered when the tile gets its values from the form.

- The tile's title is the row's title, and it gets its values from the first column, then by row.
- You can set the tile's title, the tile's height percentage, legend, and can select which axes from the form to include. For example, if you select a form with three rows, the tile displays three values.

With a cell intersection as the data source for a tile, you can have only one tile per object.

 **Tip:**

To select a tile chart type, expand the list of chart types by clicking the link at the bottom of the list.

Here are options you can set for a tile chart type. Note that you can set whether the displayed value is horizontally aligned in the tile to the left, the center, or the right.

### Scaling Large Numbers


Especially useful for large numbers, you can scale how a value is displayed. For example, if the tile value is 1,689,000 and you select **K** as the scaling option, the tile displays the value as 1689K. Your scaling options:

- **None:** No scaling is applied.
- **Auto:** The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T.
- **K:** The value is displayed as thousands units. For example, 1689000 displays as 1689K.
- **M:** The value is displayed as millions units. For example, 123,456,789 displays as 123M.
- **B:** The value is displayed as billions units. For example, 12,345,678,912 displays as 12B.
- **T:** The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.

## Customizing Dashboard Colors

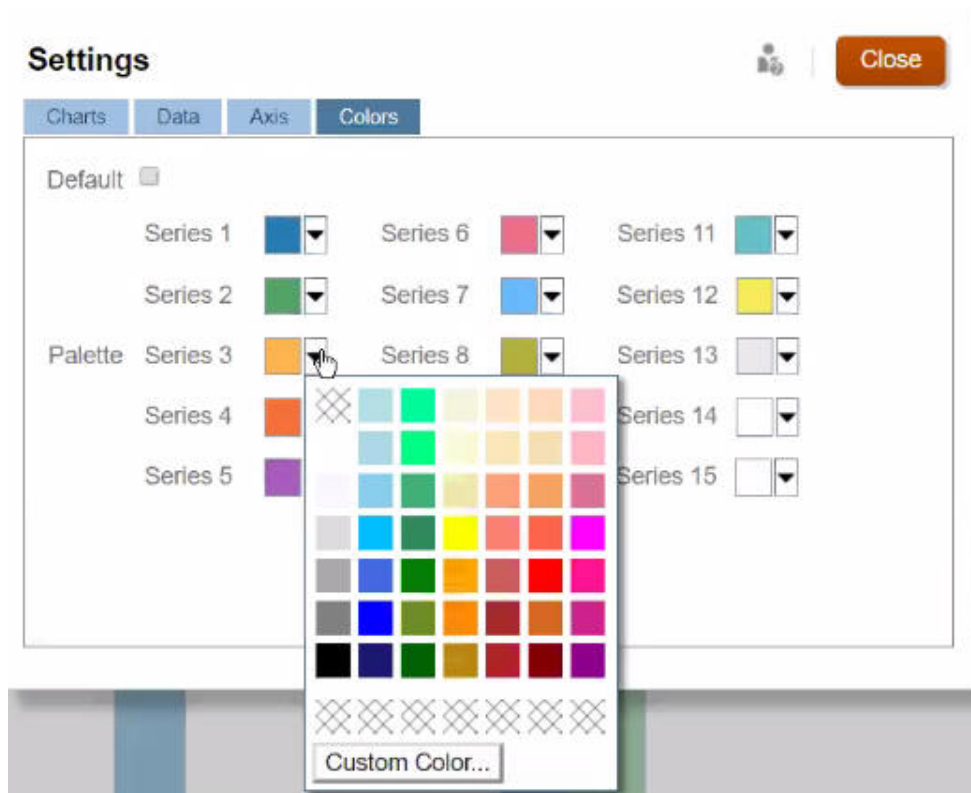
Maybe your company uses a standard set of colors in charts to denote different types of data. For example, dark blue might represent actual data versus light blue for budget data. When you customize dashboard colors, you select colors in the order of rows on the form. Series 1 represents the first row of data, and so on. You can assign each row in the form a color that represents its data in the chart.

You can customize dashboard colors in Bar, Line, Area, Bubble, Column, Combination, Doughnut, Pie, Radar, and Scatter chart types.

1. With the chart on the dashboard's design palette, click **Settings** .

2. Click **Colors**.
3. Clear the **Default** check box, and then click the down arrow ▼ for the Series you want to change.

Check the chart in the background to see the data type that each series represents.



4. Click the colors you want for the selected Series, and then click **Close**.

 **Note:**

To select more shades of colors than the ones initially displayed, click **Custom Color...**

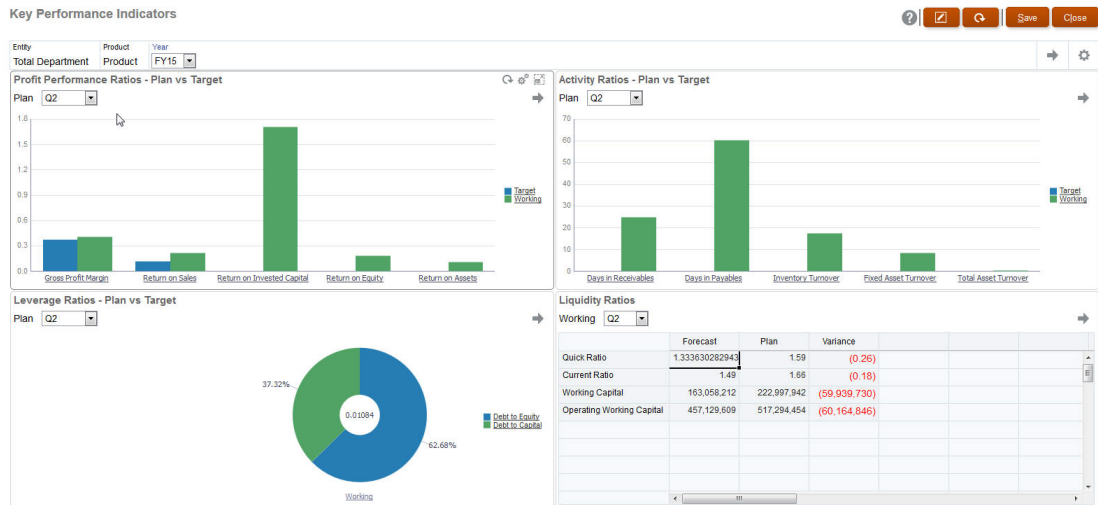
Your selections apply only to the current chart. Follow these steps to change the colors of other charts in the dashboard.

## About Global and Local POVs in 1.0 Dashboards

A local POV on a form reflects the dimension members the form designer selected for that form. Dashboards also support *global POV bars*, so that the local POVs that are common are combined in the global POV bar to avoid repeating them in each object.

### Dashboard 1.0 POVs Example

Here's a 1.0 dashboard showing a global POV bar (showing Entity, Product, and Year) and a local POV (the Plan drop-down list showing Q2):



With a global POV bar, if you change a page in the global POV bar and then click **GO**, the page changes for all objects that are based on forms. The global POV bar displays at the top of the dashboard above all the objects, while the local POV bar displays within the object. User variables are supported in both global and local POVs in dashboards and you can change dynamic user variables directly from the POV bar.

In dashboard **Settings**, you can set whether to show or hide POVs and whether to enable or disable global POV bars. (If you select **Hide** for **POV Bars**, and **Enable** for **Global POV Bar**, the **Hide** option overrides the **Enable** option.) The global POV bar is enabled by default; if you disable it, the complete POV is displayed for each local POV as applicable.

About global POV bars:

- The POV Bar is made up of local POV dimensions, Page dimensions and user variables.
- Depending on the local POV and page of each form on the dashboard, the global POV bar is automatically calculated.
- They are reflected in the other objects using forms in that dashboard. That is, they apply to forms in a dashboard, to charts that are linked to forms, and to tiles that use forms as a data source. So if the dashboard doesn't include a form as a data source, then neither the local nor global POV bar is available.

Here's an example of how the global POV bar is calculated, based on the local POV dimensions for two forms:

The global POV bar is disabled:

- Form A local POV: Year, Entity, Product
- Form B local POV: Year, Entity, Project

The global POV bar is enabled:

- Global POV bar: Year, Entity
- Form A local POV: Product
- Form B local POV: Project

Because not all dimensions and page selections may be common to all forms on a dashboard, the complete POV for a dashboard object may get split between the local and global POV bar. The global POV bar and the local POV together contain the complete intersection information for each form on a dashboard.

If there is only one object on the dashboard that uses a form as a data source, then the entire POV/page of the form can be moved to the global POV bar.

If there is more than one object on a dashboard that use forms as a data source, then this is how the application determines which dimensions go in the global POV bar or stay in the local POV:

- If the dimension is in the POV or page of all the forms, and the member selection is the same in all the forms, the dimension goes in the global POV bar.
- If the dimension is in the POV on one form and in the page of another form, then the dimension stays in the local POV.
- If the dimension is in the POV, then the same members must be selected in all the forms for the dimension.
- If the dimension is a page dimension, then the selected page members must be the same and display in the same order in all the forms.

The POVs in 1.0 dashboards honor valid intersections by hiding invalid Page members. See [Dashboard POVs and Valid Intersections](#).

## Dashboard POVs and Valid Intersections

The POVs in dashboards honor the valid intersections by hiding invalid Page members. Just like in forms, the Page drop-down list is filtered for all selected members in the POV and Page dimensions. Because dashboards support both global and local POVs, the context for filtering the Page drop-down list depends on which POV the members are located. If the Page drop-down list is on a global POV, the filtering context is only the global POV dimensions. If the Page drop-down list is on the local POV, the filtering context is all the global dimensions plus the dimensions on a chart's local POV.

See also [About Global and Local POVs in 1.0 Dashboards](#).

## Creating and Managing Dashboards 2.0

### Related Topics

- [Concepts in Designing Dashboard 2.0 Dashboards](#)
- [Considerations for Dashboard 2.0](#)
- [Creating Dashboard 2.0 Dashboards](#)
- [Working with the Member Selector When Designing Dashboards 2.0](#)  
When designing Dashboard 2.0 dashboards, you can easily search for and select new dimension members using the member selector.
- [About Forms 2.0 Grids in Dashboard 2.0](#)
- [About the Geomap Chart Type](#)
- [About the Pyramid Chart Type](#)
- [About the Waterfall Chart Type](#)
- [Using Tables in Dashboards](#)
- [About the Gauge Chart Type for Dashboard 2.0](#)
- [About the Radar Chart Type for Dashboard 2.0](#)

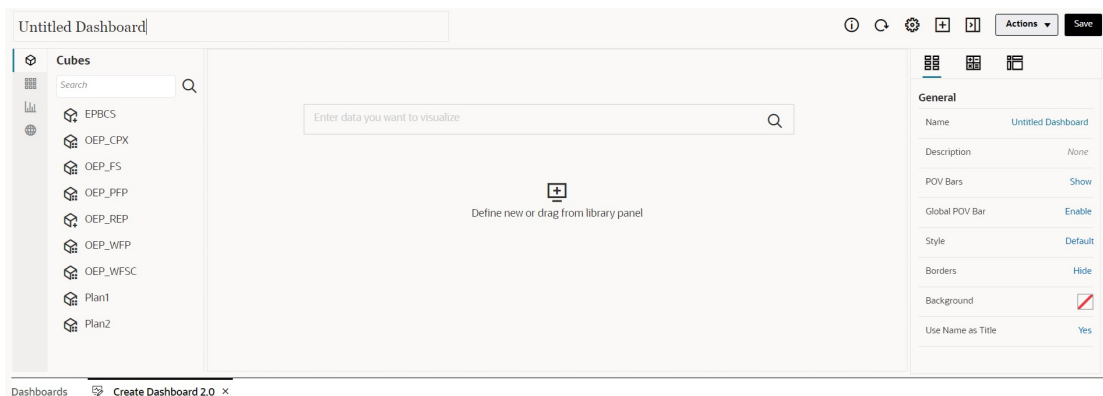
- [About the Combination Chart Type for Dashboard 2.0](#)
- [About the Tile Chart Type for Dashboard 2.0](#)
- [About Global and Local POVs in Dashboard 2.0](#)
- [About Quick Analysis](#)

## Concepts in Designing Dashboard 2.0 Dashboards

This topic contains helpful information as you design Dashboard 2.0 dashboards:

- [About the Dashboard 2.0 Designer](#)
- [Opening the Dashboard 2.0 Designer](#)
- [Data Sources for Charts](#)
- [More Helpful Information About Dashboard 2.0](#)
- [Videos](#)

### About the Dashboard 2.0 Designer



The Dashboard Designer consists of the following dashboard components:

- [Object Palette](#)
- [Dashboard Toolbar](#)
- [Dashboard Workspace](#)
- [Properties Panel](#)
- [Dashboard Components](#)

### Opening the Dashboard 2.0 Designer

As a reminder, Dashboard 2.0 dashboards on the **Dashboards** page are identified by this

icon: 

To open the Dashboard 2.0 Designer:

1. From the Home page, click **Dashboards**.
2. Select one of the following options:
  - To create a dashboard, click **Create**, and then select **Dashboard 2.0**.

- To edit a dashboard, in the **Actions** column to the right of the Dashboard 2.0 dashboard you'd like to edit, click **•••**, and then click **Edit**.

If you don't need to work with data while editing a Dashboard 2.0 dashboard; for example, you'd like to realign the dashboard components and tiles, click **•••**, and then click **Edit without Data**.

3. If the Dashboard 2.0 dashboard is open in the runtime environment, you can switch from the runtime environment to the Dashboard Designer environment.



Click **Actions**, and then select **Edit** or **Edit without Data**.

### Data Sources for Charts

Dashboard 2.0 supports ad hoc grids, forms, and cubes for choosing the data. You pick the data sources from the object palette.


#### Note:

You can include a maximum of 12 components in a Dashboard 2.0 dashboard.

- The properties panel provides full data source information for a dashboard component on the **Chart** tab . Select the dashboard component, then click . The data source information is displayed under the **Visualization** heading.
- When using a cube as the data source for quick analysis, drag and drop a cube from the object palette to the dashboard workspace, then click in the Search box and either enter the member name or launch the member selector to choose members. The **Layout** tab will then display in the properties panel where you can pivot the dimensions and choose which dimensions appear on the POV, row, or column axis. See [About Quick Analysis](#).

#### Note:

There is an upper limit of 50 members across all dimensions that can be selected to create a chart using quick analysis. This limit together with the number of dimensions in the cube will determine the maximum size of the grid that is supported for a chart based on quick analysis.

- When the data source for a dashboard component is a form or an ad hoc grid, the data is fetched using the form definition.
  - You can change the source form in the properties panel by clicking the **Form** property in the  tab of the properties panel.
  - The total amount of form data that's allowed to be visualized in a chart is 10,000 cells. By default, this is 100 rows and 100 columns. However, you can change the number of rows and columns to any combination that totals 10,000 cells or less; for example, if you reduce the number of rows to 5, then you can increase the number of columns to 2,000 (5 x 2000=10,000).

- If a form's precision is set, displayed values after conversion to Dashboard 2.0 are based on the form's precision setting. If the precision value on a form is not set, then the values displayed after conversion to Dashboard 2.0 might change.

 **Note:**

When the data source for a dashboard component is a form, and the form has rows that contain blank header cells or empty formula rows that are not configured, then the corresponding chart legends will not display.

- For Doughnut, Pie, and Gauge chart types, you can add multiple charts to one component. To add multiple charts, click **Single** or **Multiple** in the chart's **Display** property. If **Single** is selected, the chart displays only the first column of the underlying form's data. If **Multiple** is selected, a chart is displayed for each column of the underlying form's data.

 **Note:**

For dashboards with Doughnut, Pie, and Gauge chart types that are converted from Dashboard 1.0 to Dashboard 2.0, the default option for the **Display** property is **Multiple**. For newly created Dashboard 2.0 dashboards, the default option for **Display** is **Single**.

### More Helpful Information About Dashboard 2.0

- As you create a dashboard, click **Actions** and then select **Save and Run** to immediately see how the dashboard looks and works to a dashboard user. To return to designer mode to continue designing the dashboard, click **Actions** and then select **Edit** or **Edit without Data**.
- By default, missing or suppressed data is plotted as zeros. For selected chart types (Area, Bubble, Combination, Line, Radar, and Scatter), you can disable this setting by selecting the **Plot Missing Values as Zero** option in the chart's settings. When this option is disabled, the missing or suppressed data is ignored and is no longer plotted as zeros for those chart types.
- To review Dashboard 2.0 considerations, see [Considerations for Dashboard 2.0](#).

### Videos

#### Your Goal

Learn how to create a dashboard with multiple components in the Dashboard Designer for Dashboard 2.0.

#### Watch This Video




[Creating Dashboards in Dashboards 2.0](#)

## Object Palette

On the left side of the Dashboard Designer is the object palette where you select the content for dashboard components. Simply drag and drop objects from the object palette to the workspace or search for content using the Search box.








The object palette can be resized. To resize the object palette, hover over the right side of the palette and drag it. To hide the palette, hover over the palette until you see

the handle icon , then click it to hide the palette. Click the handle icon again to reopen the palette.

Content in the object palette is grouped into these categories:

**Table 16-3 Object Palette Content Categories**

Icon	Description
	<p><b>Cubes:</b> Perform quick analysis by adding components of a cube to a dashboard without having a prebuilt form. See <a href="#">About Quick Analysis</a>.</p>
	<p><b>Library:</b> Select ad hoc and standard forms to include in the dashboard by navigating to the forms folders or by searching for them by name.</p> <ul style="list-style-type: none"> <li>Click <b>List</b> to view forms in a <b>List View</b> or <b>Tree View</b>.</li> <li>Click  to type search keywords.</li> </ul> <p>The access permissions set for forms are honored in dashboards.</p>
	<p><b>Visualizations:</b> Select a chart to include in the dashboard. To view data in a chart, you must select components of a cube or associate the chart with a form as its data source. When you link a chart to a form, users can immediately see the impact of changing data in the form on the associated charts.</p>
	<p><b>Other:</b></p> <ul style="list-style-type: none"> <li><b>Commentary:</b> Adds the comment you enter below the graph or chart and to the bottom of the <b>Chart</b> tab in the properties panel. <b>Commentary</b> includes a WYSIWYG text editor.</li> <li><b>URL:</b> Adds the URL you enter below the graph or chart and to the bottom of the <b>Chart</b> tab in the properties panel. <b>URL</b> includes a Reference URL link and the URL must be IFrame supported.</li> </ul> <p>Insert only external site URLs starting with the <code>https://</code> security protocol. Don't use internal or relative URLs or URLs for unconsenting third party sites such as google.com.</p> <p>Don't imbed into a dashboard direct URLs to other EPM artifacts such as forms and dashboards on either the same Oracle Enterprise Performance Management Cloud instance or to a different EPM Cloud instance.</p>






 **Note:**

If a URL added to a dashboard doesn't work in the runtime environment, right-click the URL and open the link in a new tab.

## Dashboard Toolbar

In the upper right corner of the Dashboard Designer is the dashboard toolbar where you can perform these dashboard tasks:

**Table 16-4 Dashboard Toolbar**





Icon	Description
	The <b>Information</b> icon displays the folder in which the dashboard is located.
	The <b>Refresh Data</b> icon refreshes all data associated with the entire dashboard.
	The <b>POV Settings</b> icon performs these POV actions: <ul style="list-style-type: none"> <li>• <b>POV : Hide Dimension Labels:</b> If your dashboard contains a global POV bar, select to hide the dimension names on the global POV bar. Clearing this option once again displays dimension names on the global POV bar.</li> <li>• <b>POV : Auto-Apply:</b> If your dashboard contains a global or local POV, enable this action to automatically apply changes to the POV. If you don't want to automatically apply changes, clear this option.</li> <li>• <b>POV : Clear All Page Selections:</b></li> </ul>
	The <b>Add</b> icon adds a new empty dashboard component to the design canvas (this is an alternative to drag and drop).
	The <b>Properties</b> icon hides and unhides the Properties Panel.
<b>Actions</b> menu	The <b>Actions</b> menu enables you to perform these actions: <ul style="list-style-type: none"> <li>• <b>Revert to Last Saved:</b> Discards edits made since the last time the dashboard was saved</li> <li>• <b>Save and Run:</b> Saves any edits made and opens the dashboard in the runtime environment</li> </ul>
<b>Save</b>	Clicking <b>Save</b> saves the dashboard definition.

## Dashboard Workspace

The large area in the middle of the page between the object palette and Properties panel is the dashboard workspace. In addition to drag and drop, you can use the Search box to specify or search for the data you want to display for each component (a *component* is an empty object in the dashboard workspace into which you can add a dashboard object, such as a chart or a table). You can add up to 12 components to the dashboard workspace.

If the forms version is Forms 2.0, any forms dropped into the workspace are rendered initially as editable grids. Ad hoc grids dropped into the workspace are rendered initially as tables.

- The first object that you drag and drop occupies the entire workspace, then drag additional objects from the object palette to the left, the right, the top, or the bottom of the existing component.
- To move a component to another part of the dashboard, click the component, and then hover your cursor over the upper edge of the component until you see the drag icon. Drag and drop the component to the left, right, top, or bottom of another component and the other components on the dashboard will move and realign.

- To maximize a component so it fills the workspace, click , and then click **Maximize**. The component will fill the workspace, and the other components on the workspace will be hidden. Clicking  and then **Restore** resizes the component to its original size and makes the other components in the workspace visible again.
- To change the height and the width of components in the dashboard, perform one of the following actions:
  - Drag the borders of the components within the dashboard workspace
  - Select a dashboard component, then in the Properties panel on the right, click  to view and change the component's height and width.
- To maximize the overall size of the dashboard workspace, you can resize or hide the object palette and properties panel on either side of the workspace.
- For a dashboard with a URL component, clicking on the body of the URL component does not switch focus to the URL component. To switch focus to the URL component, either click Alt + W or hover over the URL title bar until you see the cursor change to the move icon , then click to change the focus.

 **Note:**

In the runtime environment, if a user doesn't have access to an object like a form, or if the form is missing, then an adjacent component will take its space. In the designer environment, all empty components are displayed so that the designer can choose to remove them.

## Properties Panel

On the right side of the Dashboard Designer is the Properties panel where you can set general properties for the entire dashboard as well as component-specific properties.



The Properties panel can be resized. To resize the panel, hover over the left side of the panel and drag it. To hide the panel, click  at the top of the page. Click  again to reopen the panel.

Table 16-5 Properties Panel





Icon	Description
	<p>The <b>General</b> tab includes the following properties for the entire dashboard:</p> <ul style="list-style-type: none"><li>• <b>Name:</b> Edit the title of the entire dashboard.</li><li>• <b>Description</b> (optional): Describe the dashboard.</li><li>• <b>POV Bars:</b> Show or hide POV bars.</li><li>• <b>Global POV Bar:</b> Enable or disable the global POV bar.</li><li>• <b>Style:</b> Select the dashboard color scheme. Options are <b>Default</b>, <b>Light</b>, and <b>Dark</b>.</li></ul> <div style="border: 1px solid #0070C0; padding: 10px;"><p> <b>Note:</b></p><p>If you select <b>Dark</b>, dashboard error messages and legend text will be more difficult to view.</p></div> <ul style="list-style-type: none"><li>• <b>Borders:</b> Show or hide component borders.</li><li>• <b>Background:</b> Select a new dashboard background from a menu of colors.</li></ul> <div style="border: 1px solid #0070C0; padding: 10px;"><p> <b>Note:</b></p><p>If your dashboard contains a grid, only the background color will change. The grid color will remain the same.</p></div> <ul style="list-style-type: none"><li>• <b>Use Name as Title:</b> Selecting <b>No</b> lets you customize the dashboard's title. You can further customize the title by changing the font family, font size, bolding, italicizing, underlining, font color, and font background color.</li></ul> <p>For information about POVs, see <a href="#">About Global and Local POVs in Dashboard 2.0</a>.</p>

Table 16-5 (Cont.) Properties Panel

Icon	Description
	The <b>Associations</b> tab lists the rules associated with the dashboard and the underlying form data.

 **Note:**

You can associate rules which are required to be run during a global **Save**. These rules can be associated or removed at any time.

You can add rules and edit them:



- If no rules are associated, click  to view a list of rules from which to choose. Rules already associated with forms in the dashboard are listed first and are named as follows:  
Business Rules for <name of form>
- When you add rules, you'll need to specify when the rule should run: **Before Load, After Load, Before Save, After Save, Use Members on Form, Hide Prompt**.
- Under **Actions**, you can delete rules or change the order in which they will run: **Move to Top, Move Up, Move Down, Move to Bottom**, and **Delete**.
- If the rules have runtime prompts, they will be displayed when the rule is run.

Table 16-5 (Cont.) Properties Panel

Icon	Description
	<p>The <b>Chart</b> tab includes properties for the selected components in the dashboard such as chart title, component height, width, and background color. You can also change the chart type, the data source type, and which underlying form is used for each component. Using different background colors for each component enables you to uniquely differentiate each dashboard component. Removing the chart title frees space that is then adjusted for the local POV bar and for the chart itself.</p> <p>For rows and columns, the total amount of form data that's allowed to be visualized in a chart is 10,000 cells. By default, this is 100 rows and 100 columns. However, you can change the number of rows and columns to any combination where the multiplication totals 10,000 cells or less; for example, if you reduce the number of rows to 5, then you can increase the number of columns to 2,000 (5 x 2000=10,000).</p>




 **Note:**

The 10,000 cell visualization limit does not apply to grids.

If the form associated with a chart exceeds the 10,000 cell visualization limit, it might result in discrepancies between the data you see in the form and the way the data is visualized in the dashboard chart. It also might result in some other runtime issues such as drilling through on charts and legends.

If you've added **Commentary** or **URL** information types to this component, you can edit the content of those information types at the bottom of this tab.

**Table 16-5 (Cont.) Properties Panel**

Icon	Description
 (this icon will change depending on the component that's selected in the dashboard)	<p>This tab lets you customize visualizations for the selected chart or table.</p> <p>Set display properties for the selected components such as how to scale values, show or hide row dividers or grid lines, choose different font sizes and colors for headers and data, set orientation vertically or horizontally, define legend positions, add spark charts to tables, add a secondary Y-axis, and so on. See the chart type topics for detailed property descriptions.</p>
<p> <b>Note:</b></p> <p>For data visualizations in Dashboard 2.0, the custom color palette now supports only 12 colors instead of 15. If you created a dashboard in an earlier update that used 15 colors, you will continue to see 15 colors at runtime. However when you try to change the custom colors, the dashboard designer will only display 12 colors from which you can select and save.</p>	
	<p>The <b>Layout</b> tab includes the <b>POV</b>, <b>Row</b>, and <b>Column</b> properties for the selected cube for quick analysis. See <a href="#">About Quick Analysis</a>.</p>

## Dashboard Components

You can add up to 12 components to the dashboard workspace.

When you hover over a component in the workspace, a toolbar for that component displays in the upper right corner:



**Table 16-6 Dashboard Components Toolbar**





Icon	Description
	<b>Information:</b> Displays the underlying form details, including the form name, the folder path of the form, and the cube
	<b>Save:</b> Saves any changed data and runs any rules associated with the component
	<b>Refresh:</b> Refreshes the data associated with the dashboard component
	<b>Chart Type:</b> Changes the chart type associated with the component

Table 16-6 (Cont.) Dashboard Components Toolbar

Icon	Description
...	<p><b>Actions menu:</b></p> <ul style="list-style-type: none"> <li>• <b>Maximize:</b> Enlarges the dashboard component. Once maximized, click <b>Restore</b> to minimize the dashboard component to its original size.</li> <li>• <b>Open Form:</b> Opens the runtime form associated with the component in a dynamic tab next to the current tab.</li> <li>• <b>Edit Form:</b> If you have the correct permissions, opens the form associated with the component in the forms editor. The forms editor opens in a dynamic tab next to the current tab.</li> <li>• <b>Delete:</b> Deletes a form.</li> </ul>

## Considerations for Dashboard 2.0

Note the following considerations when using Dashboard 2.0:

- 3D visualization is not supported in Dashboard 2.0. This affects the following Dashboard 2.0 chart types:
  - Area
  - Bar
  - Bubble
  - Column
  - Combination
  - Doughnut
  - Gauge
  - Grid
  - Line
  - Radar
  - Scatter

### Note:

Dashboard 1.0 still supports 3D visualizations for charts, as applicable.

- In a future update, Dashboard 2.0 will support Smart Push.
- Funnel charts are useful for viewing data for stages of a process, such as the stages of a sales process. The area of a funnel slice is proportional to its value for the corresponding stage. Dashboard 1.0 renders the funnel chart very differently than the way in which Dashboard 2.0 renders the funnel chart. In Dashboard 1.0, the funnel chart supports multiple columns, and the first two rows of the form are used to compare Actual with Target. The chart then plots the differences between the two in the funnel corresponding to the respective column. In Dashboard 2.0 the funnel chart supports only the first column



and the area of the funnel corresponding to each cell on the row is colored and is sized proportionally to its numeric value.

- All future dashboard enhancements will be in Dashboard 2.0.

### Forms Versions and Dashboard 2.0

Runtime forms are also available in two versions:

- **Forms 1.0:** Uses Slick Grid with Oracle ADF Fuse components
- **Forms 2.0:** Uses Slick Grid with Oracle JET components

Certain features in Dashboard 2.0 only work with Forms 2.0; for example, Dashboard 2.0 only lets you work directly with data in form grids if the underlying form is a Forms 2.0 form. The **Forms Version** can be updated in your application settings.

You'll need to be aware of some differences in the way the dashboard versions interact with the forms versions.

When the **Forms Version** application setting is set to **Forms 1.0**:

- You can continue to use Dashboard 1.0 with Forms 1.0.
- You cannot use Dashboard 2.0 with Forms 1.0.

Forms 2.0 is supported with Dashboard 2.0 only. Use Forms 2.0 with Dashboard 2.0 for all interactions.

If you've selected a Dashboard 2.0 dashboard and you see an `Error during Dashboard 2.0 component initialization` message, the dashboard has Forms 2.0 forms associated with it and you'll need to ensure that Forms 2.0 are enabled before you can view the dashboard.

- When Dashboard 2.0 artifacts are created, the **Grid** visualization option will not be available.
- To use forms as grids in Dashboard 2.0, update the **Forms Version** application setting to Forms 2.0.
- Existing Dashboard 2.0 dashboards (Dashboard 2.0 dashboards created before November 2023) will continue to display forms as tables and charts, not grids.

When the **Forms Version** application setting is set to **Forms 2.0**:

- You can continue to use Dashboard 1.0 with Forms 2.0.
- Dashboard 2.0 will display the **Grid** visualization option, which uses Forms 2.0 with read, write, and calculate abilities.
- Forms 2.0 within Dashboard 1.0 will appear as Forms 1.0.



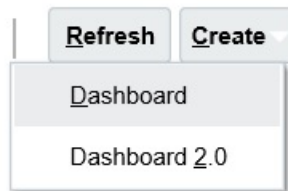
#### Note:

Saved forms definitions can be used as a data source for dashboard charts regardless of the **Forms Version** application setting: **Forms 1.0** or **Forms 2.0**.

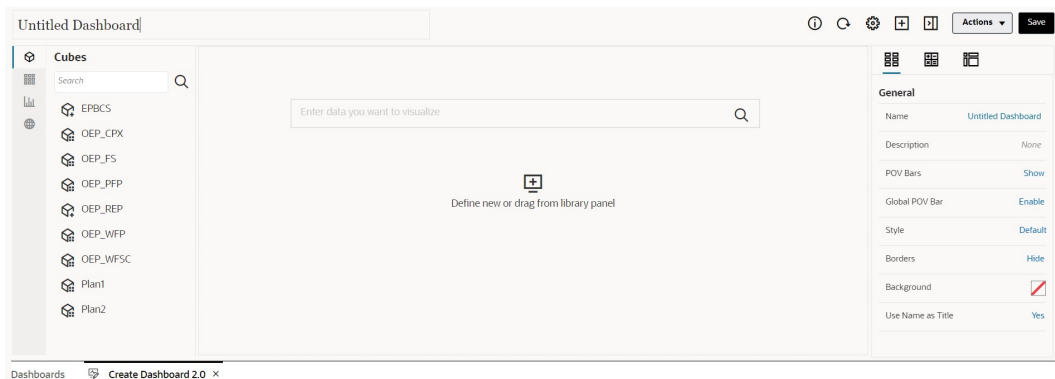
## Creating Dashboard 2.0 Dashboards

To create a Dashboard 2.0 dashboard:

1. From the Home page, click **Dashboards**, and then click **Create**.



2. From the options provided, select **Dashboard 2.0**.



3. Enter a name for the dashboard by clicking the default dashboard name and entering a new name in the input box.
4. Drag and drop content from the object palette on the left onto the dashboard workspace. Customize the dashboard using the dashboard settings and properties.

For a detailed description of the Dashboard Designer, see [Concepts in Designing Dashboard 2.0 Dashboards](#).

While working on the dashboard, you can save it as a new dashboard, including any unsaved changes. To do so, click **Actions**, then **Save As**, and then save the dashboard with the new name.

5. Click **Save**.

You can easily duplicate and modify a dashboard using **Copy As** on the **Dashboards** listing page. Select the **Actions** icon **•••** next to the dashboard you want to copy.

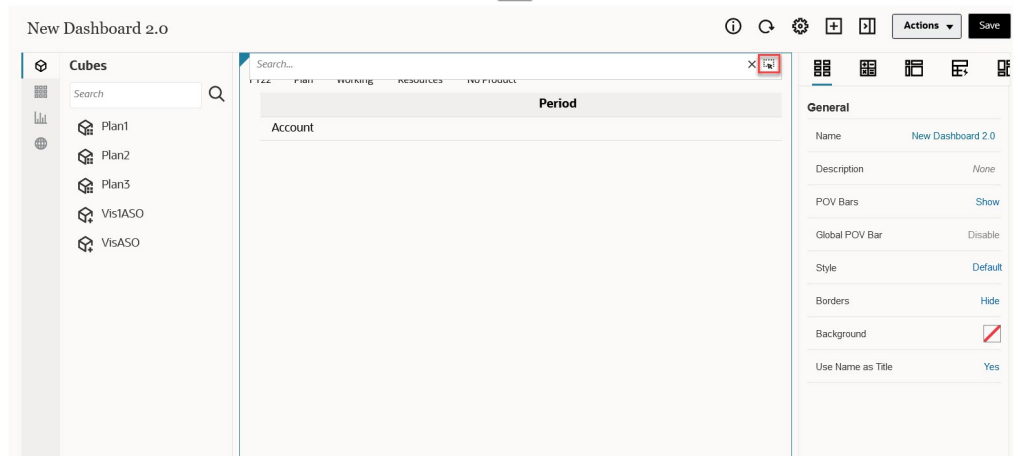
## Working with the Member Selector When Designing Dashboards 2.0

When designing Dashboard 2.0 dashboards, you can easily search for and select new dimension members using the member selector.

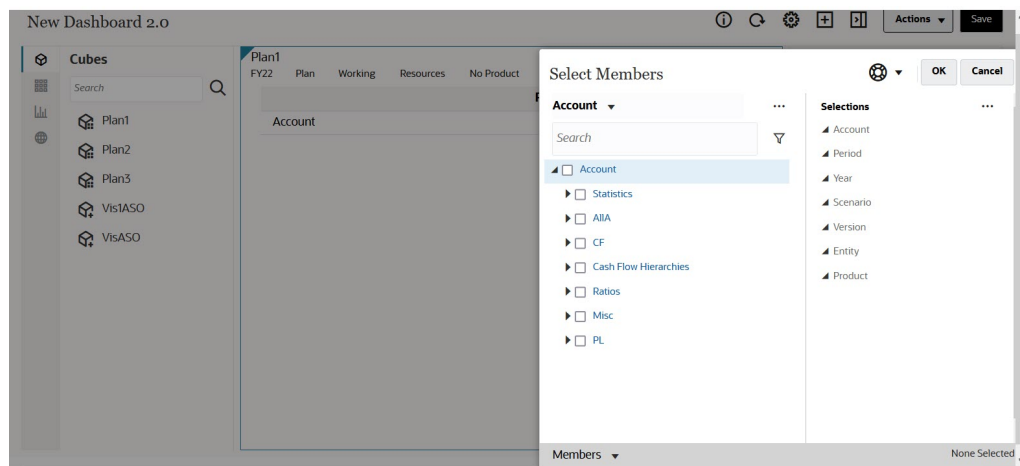
When you're creating a Quick Analysis in your dashboard, after you add a cube, you can select members for each dimension using the member selector.

To open the member selector for Quick Analysis:

Click the member selector icon in the Quick Search bar:



Select members for each dimension using the member selector.

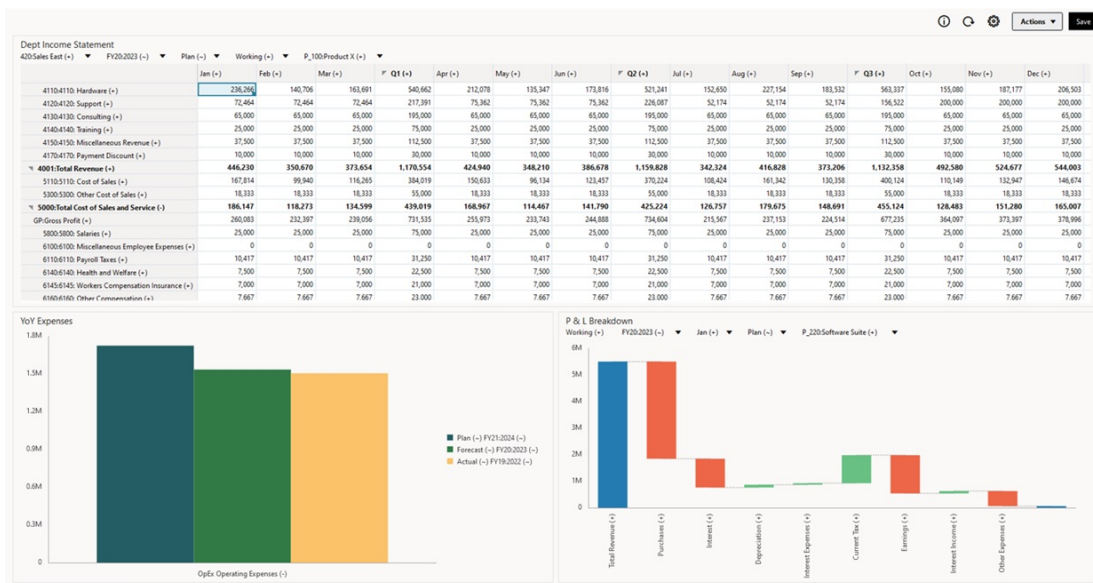


For more information about working with the member selector, see [Using the Member Selector](#).

## About Forms 2.0 Grids in Dashboard 2.0

Newly added components in Dashboard 2.0 default to displaying the form grid, and the grids are writable if the associated form is a Forms 2.0 form. Grids in dashboards enable you to work directly with data in forms if the underlying form is a Forms 2.0 form. You can write-back data updates and invoke rules in dashboards with grid components. You can also right-click inside a grid to view a context menu where you can perform additional grid actions such as grid spread, and adding comments and attachments.

## Example Dashboard with a Grid and Charts



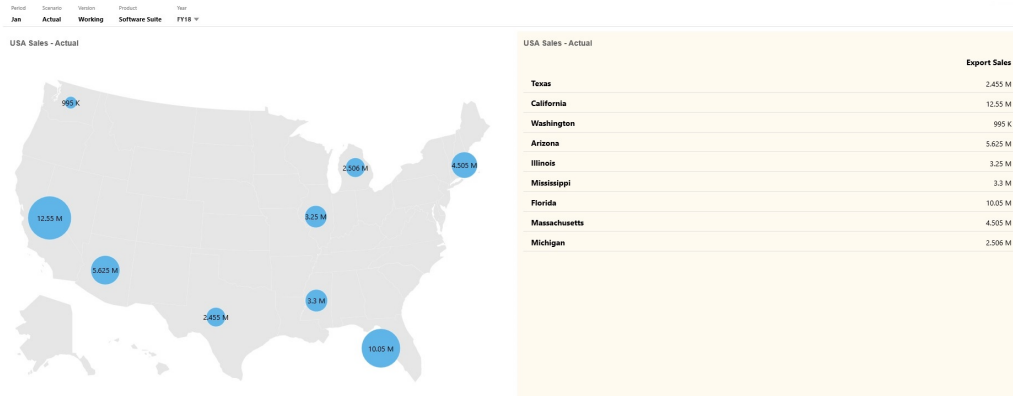
## About the Geomap Chart Type

Geomaps are geographical maps with overlays and charts that display some measure about each of the geographical areas that are displayed. Hovering over the bubbles or the color highlight in the Geomap displays a data label.

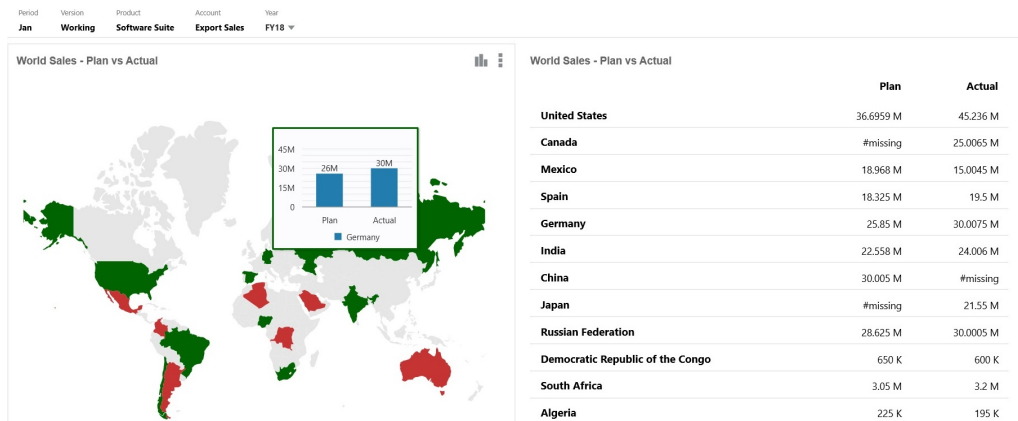
### Note:

Color highlight geomaps are designed to show any variances (red or green, depending upon your **Desired Variance Trend** setting) based on the values in the underlying data. If a geomap region has missing values in the 1st or 2nd column or if the values in those columns are equal and there is no variance, the region will be highlighted blue. Hovering over a highlighted region displays a bar chart with all the values for the row except for any missing values.

## Example Geomap - USA Sales Using Data Bubbles



### Example Geomap - World Sales Using Color Highlight



Dashboard designers can set these geomap chart properties:


**Table 16-7 Geomap Chart Properties**

Setting	Description
<b>Map Layer</b>	Select <b>World</b> or narrow the scope of the map to a continent such as <b>Asia</b> , <b>North America</b> , or <b>Africa</b> .
<b>Type</b>	<p>The <b>Data Bubbles</b> geomap displays data as sized bubbles over the map layer. The <b>Color Highlight</b> geomap compares two data values, displaying geographical areas that have an increase in green, and those with a decrease in red.</p> <p>Select <b>Data Bubbles</b> or <b>Color Highlight</b> and then specify the following additional options:</p> <ul style="list-style-type: none"> <li>For <b>Data Bubbles</b>, select the desired settings for <b>Label (Show or Hide)</b>, <b>Label Color</b>, and <b>Bubble Color</b>.</li> <li>For <b>Color Highlight</b>, specify the <b>Desired Variance Trend (Increase or Decrease)</b>.</li> </ul>

**Table 16-7 (Cont.) Geomap Chart Properties**

Setting	Description
<b>Geography Names</b>	<p>We've provided you with a metadata load file that contains the geographical elements the geomap uses like countries, states, and cities. Click to download a CSV file which you can then upload into a dimension as new members or (with some manual changes) as aliases to existing members in your application.</p> <p>Note that geomaps only work if the geography names in the forms match exactly the geography names that Dashboard 2.0 uses for its map layers. So if your entity/geography dimension says, for example, USA, that won't be recognized as a valid name in the map layer, which uses United States.</p>

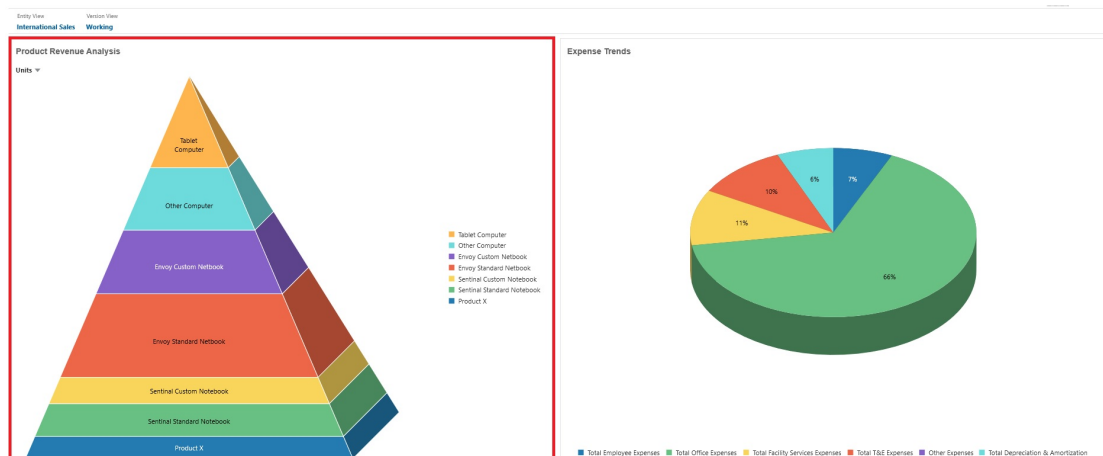
## Videos

Your Goal	Watch This Video
Learn how to download geography members for geomap charts, then import them into your dimension. You learn how to set up both data bubble and color highlight geomap charts.	 <a href="#">Creating Geomaps in Dashboards 2.0</a>

## About the Pyramid Chart Type

Pyramid chart types use a triangle diagram to represent hierarchies visually. The triangle is divided into sections, illustrating vertically top-down and broad-narrow structures and processes.

### Example 3D Pyramid Chart



Dashboard designers can set these pyramid chart properties:

**Table 16-8 Pyramid Chart Properties**

Setting	Description
<b>Legend Position</b>	Choose <b>Left</b> , <b>Right</b> , <b>Top</b> , <b>Bottom</b> , or <b>None</b> .
<b>Value Scale</b>	Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select <b>K - Thousand</b> as the scaling option, the chart displays the value as 1,689K. Your scaling options: <ul style="list-style-type: none"> <li>• <b>None</b>: No scaling is applied.</li> <li>• <b>Auto</b>: The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T.</li> <li>• <b>K - Thousand</b>: The value is displayed as thousands units. For example, 1,689,000 displays as 1689K.</li> <li>• <b>M - Million</b>: The value is displayed as millions units. For example, 123,456,789 displays as 123M.</li> <li>• <b>B - Billion</b>: The value is displayed as billions units. For example, 12,345,678,912 displays as 12B.</li> <li>• <b>T - Trillion</b>: The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.</li> </ul>
<b>3D Graph</b>	Choose <b>Yes</b> to visualize the data as a 3D chart.
<b>Color</b>	Select <b>Default</b> or click a section of the pyramid chart and choose a custom color for that section.

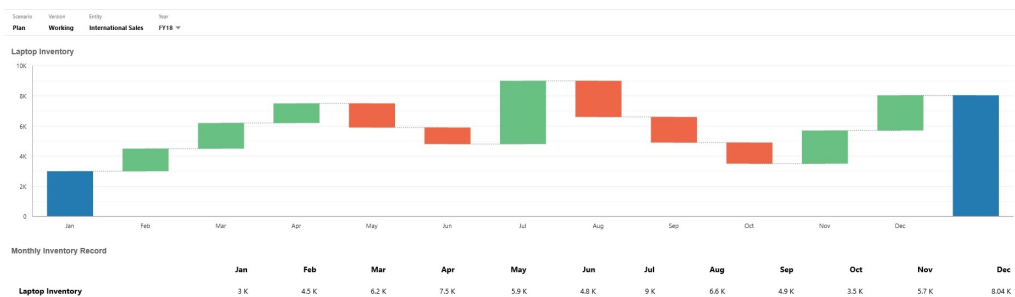
## About the Waterfall Chart Type

Waterfall charts display a running total of positive and negative values, which is helpful in showing how you arrived at a net value from an initial value.

Waterfall charts are used to portray how an initial value is affected by a series of intermediate positive or negative values. Usually the initial and the final values (end points) are represented by whole columns, while the intermediate values are shown as floating columns that begin based on the value of the previous column. The columns can be color-coded to distinguish between positive and negative values.

### Example Waterfall Chart - Inventory Analysis

This example visualizes changes in a single account over time.



### Example Waterfall Chart - P & L Statement

This example has expense accounts that are shown as a negative change to Total Revenue, and income accounts that are shown as a positive change, for a final Net Income value.



Dashboard designers can set these waterfall chart properties:

**Table 16-9 Waterfall Chart Properties**


Setting	Description
<b>Value Scale</b>	<p>Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select <b>K - Thousand</b> as the scaling option, the chart displays the value as 1,689K.</p> <p>Your scaling options:</p> <ul style="list-style-type: none"> <li>• <b>None:</b> No scaling is applied.</li> <li>• <b>Auto:</b> The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T.</li> <li>• <b>K - Thousand:</b> The value is displayed as thousands units. For example, 1,689,000 displays as 1689K.</li> <li>• <b>M - Million:</b> The value is displayed as millions units. For example, 123,456,789 displays as 123M.</li> <li>• <b>B - Billion:</b> The value is displayed as billions units. For example, 12,345,678,912 displays as 12B.</li> <li>• <b>T - Trillion:</b> The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.</li> </ul>
<b>Grid Lines</b>	Select <b>Hide</b> or <b>Show</b> to display the x-axis lines of the grid.
<b>Connecting Lines</b>	Select <b>Hide</b> or <b>Show</b> to display the lines connecting the end of each column to the beginning of the next column. This helps visualize the flow of the data in the chart.



Table 16-9 (Cont.) Waterfall Chart Properties

Setting	Description
<b>Plot Deltas</b>	<p>Select <b>Yes</b> to automatically calculate and plot the common start and end points from one bar to the next based on the values provided. This is useful for showing the trend for balance type of accounts.</p> <p>Otherwise, select <b>No</b> to manually set increase and decrease points. When <b>No</b> is selected, you can manually set these increase/decrease options on a bar-by-bar basis:</p> <ul style="list-style-type: none"> <li>Bar Direction: Select a bar to manually set the bar direction to increase/decrease.</li> <li>All bars: Display a list of all bars in the chart to manually set bar directions to increase/decrease.</li> </ul> <p>The manual options you can set for each bar are <b>Auto</b>, <b>Reverse</b>, and <b>Total</b>. <b>Auto</b> will consider the positive/negative values from the data source and plot accordingly. <b>Reverse</b> will change the sign, and <b>Total</b> will make the chart restart at the corresponding bar.</p>
<b>Increase</b>	Select a color for each property.
<b>Decrease</b>	
<b>Total</b>	
<b>End Bar</b>	Select whether to <b>Hide</b> or <b>Show</b> the end bar on the chart. In the preceding example, the end bar is shown. If the end bar is shown, you can specify a label.
<b>Axes</b>	Select a <b>Custom Range</b> for the <b>X-Axis</b> and the <b>Y-Axis</b> , or select <b>Off</b> .

## Videos

Your Goal	Watch This Video
Learn how to create waterfall charts to track the changes in a single account over time and to track how multiple accounts interact to produce a final total.	 <a href="#">Creating Waterfall Charts in Dashboards 2.0</a>

## Using Tables in Dashboards

Tables in dashboards provide a list view of the data showing multiple values from a form or grid. You can embed mini-charts into each row of the table, called Spark Charts, which plot column data. Tables are also searchable. Note that currency symbols or currency codes are displayed in tables for multicurrency applications.

### Example Dashboard Showing Plain Tables

Balance Sheet - Plan				
	Q1	Q2	Q3	Q4
<b>Current Assets</b>	535 M	557 M	588 M	625 M
<b>Fixed Assets</b>	54 M	50 M	45 M	41 M
<b>Other Assets Total</b>	223 M	223 M	223 M	223 M
<b>Total Assets</b>	812 M	830 M	857 M	890 M
<b>Current Liabilities</b>	335 M	336 M	337 M	345 M
<b>Long Term Liabilities</b>	44 K	44 K	44 K	44 K
<b>Total Owners Equity</b>	477 M	494 M	519 M	545 M
<b>Total Liabilities and Owners Equity</b>	812 M	830 M	857 M	890 M

Balance Sheet - Forecast				
	FY16   Q3	FY16   Q4	FY17   Q1	FY17   Q2
<b>Current Assets</b>	479.40 M	515.61 M	488.15 M	500.23 M
<b>Fixed Assets</b>	61.17 M	59.33 M	53.98 M	50.52 M
<b>Other Assets Total</b>	223.09 M	223.09 M	223.09 M	223.09 M
<b>Total Assets</b>	763.66 M	798.02 M	765.21 M	773.85 M
<b>Current Liabilities</b>	331.48 M	338.24 M	333.92 M	335.93 M
<b>Long Term Liabilities</b>	43.77 K	43.77 K	43.77 K	43.77 K
<b>Total Owners Equity</b>	432.07 M	459.66 M	431.25 M	437.87 M
<b>Total Liabilities and Owners Equity</b>	763.59 M	797.94 M	765.21 M	773.85 M

### Example Dashboard Showing a Table With a Spark Chart

Balance Sheet - Plan				
	Q1	Q2	Q3	Q4
<b>Current Assets</b>	535 M	557 M	588 M	625 M
<b>Fixed Assets</b>	54 M	50 M	45 M	41 M
<b>Other Assets Total</b>	223 M	223 M	223 M	223 M
<b>Total Assets</b>	812 M	830 M	857 M	890 M
<b>Current Liabilities</b>	335 M	336 M	337 M	345 M
<b>Long Term Liabilities</b>	44 K	44 K	44 K	44 K
<b>Total Owners Equity</b>	477 M	494 M	519 M	545 M
<b>Total Liabilities and Owners Equity</b>	812 M	830 M	857 M	890 M


Balance Sheet - Forecast				
	FY16   Q3	FY16   Q4	FY17   Q1	FY17   Q2
<b>Current Assets</b>	479.40 M	515.61 M	488.15 M	500.23 M
<b>Fixed Assets</b>	61.17 M	59.33 M	53.98 M	50.52 M
<b>Other Assets Total</b>	223.09 M	223.09 M	223.09 M	223.09 M
<b>Total Assets</b>	763.66 M	798.02 M	765.21 M	773.85 M
<b>Current Liabilities</b>	331.48 M	338.24 M	333.92 M	335.93 M
<b>Long Term Liabilities</b>	43.77 K	43.77 K	43.77 K	43.77 K
<b>Total Owners Equity</b>	432.07 M	459.66 M	431.25 M	437.87 M
<b>Total Liabilities and Owners Equity</b>	763.59 M	797.94 M	765.21 M	773.85 M

	YearTotal	Trend
Purchases	7,893.58 K	
Total Revenue	62,791.69 K	
Interest	35,350 K	
Depreciation	4,531.83 K	
Current Tax	3,344 K	
Earnings	35,350 K	
Interest Expenses	3,480 K	
Interest Income	3,164 K	
Other Expenses	430 K	
Gross Profit Margin	71.21%	

Dashboard designers can set these table properties:

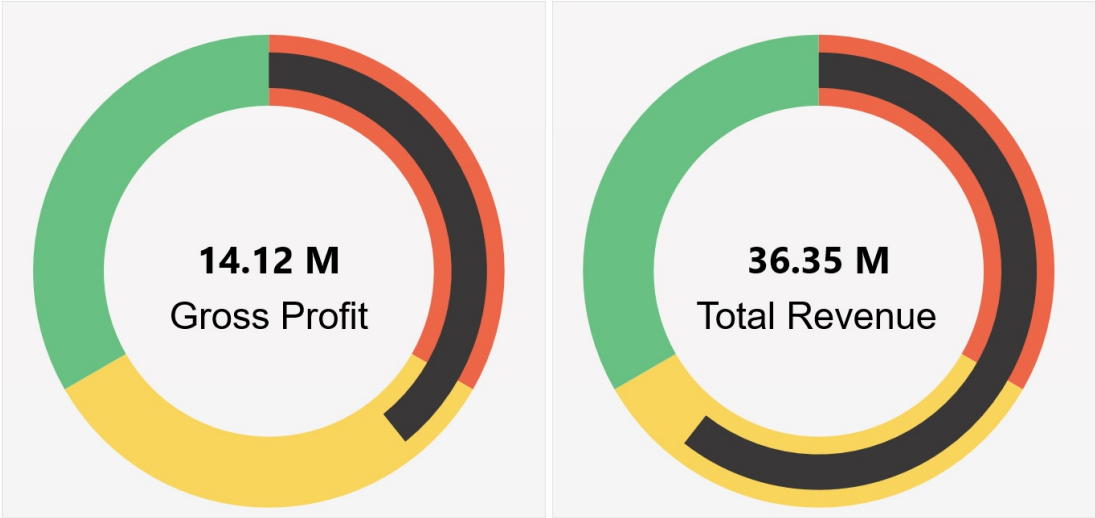
Table 16-10 Table Properties

Setting	Description
<b>Value Scale</b>	<p>Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select <b>K - Thousand</b> as the scaling option, the table displays the value as 1,689K.</p> <p>Your scaling options:</p> <ul style="list-style-type: none"> <li>• <b>None:</b> No scaling is applied.</li> <li>• <b>Auto:</b> The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T.</li> <li>• <b>K - Thousand:</b> The value is displayed as thousands units. For example, 1,689,000 displays as 1689K.</li> <li>• <b>M - Million:</b> The value is displayed as millions units. For example, 123,456,789 displays as 123M.</li> <li>• <b>B - Billion:</b> The value is displayed as billions units. For example, 12,345,678,912 displays as 12B.</li> <li>• <b>T - Trillion:</b> The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.</li> </ul>
<b>Row Divider</b>	Choose <b>Show</b> or <b>Hide</b> .
<b>Font</b>	Specify size and color options for headers and data.
<b>Spark Chart</b>	<ul style="list-style-type: none"> <li>• <b>Chart Type:</b> Select <b>Bar</b>, <b>Line</b>, <b>Area</b>, and <b>Line with Area</b> with associated options. Or you can select <b>None</b>.</li> <li>• <b>Header:</b> Column header for the Spark Chart column</li> <li>• <b>Starting Index:</b> Column index where to start charting data</li> <li>• <b>Ending Index:</b> Column index where to stop charting data</li> </ul>
<b>Videos</b>	
<b>Your Goal</b>	<b>Watch This Video</b>
See how to create a dashboard with multiple components in the Dashboard Designer for Dashboard 2.0. You create a dashboard with a table, a table with a spark chart, and a tile chart.	 <a href="#">Creating Table, Spark, and Tile Charts in Dashboards 2.0</a>

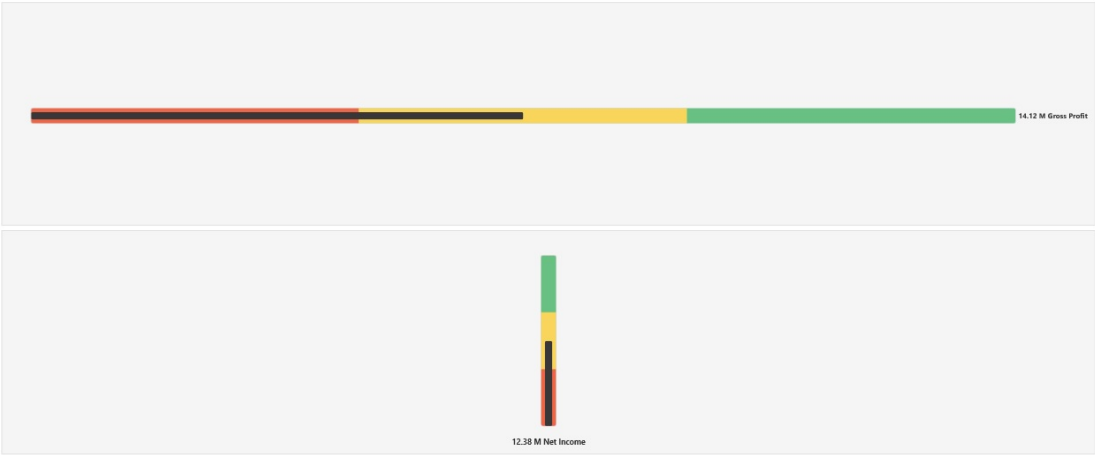
## About the Gauge Chart Type for Dashboard 2.0

Gauge chart types show you whether data values fall within an acceptable range or not. You set the minimum and maximum values, the range maximums, and the gauge uses red, yellow, and green traffic lighting to help you quickly assess a current value and identify problems in important data points or measures. For Dashboard 2.0 dashboards, you can select circular, horizontal, and vertical gauge types.

### Dashboard 2.0 Example - Circular Gauge Type

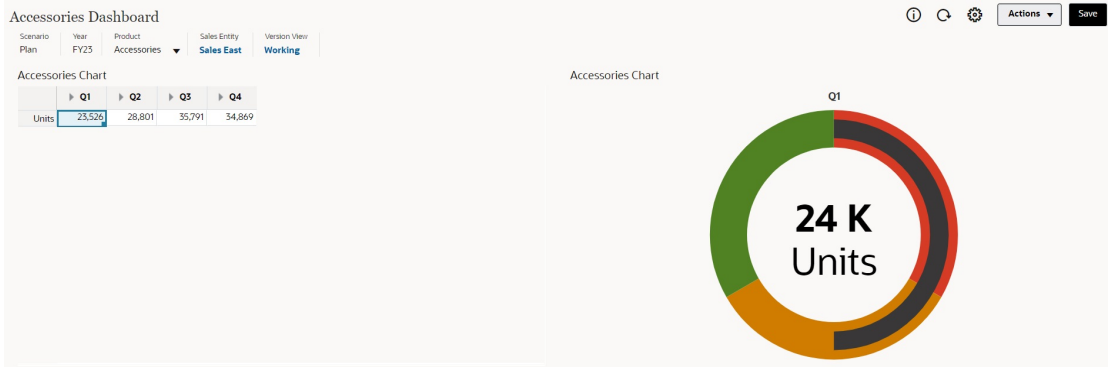


Dashboard 2.0 Example - Horizontal and Vertical Gauge Types



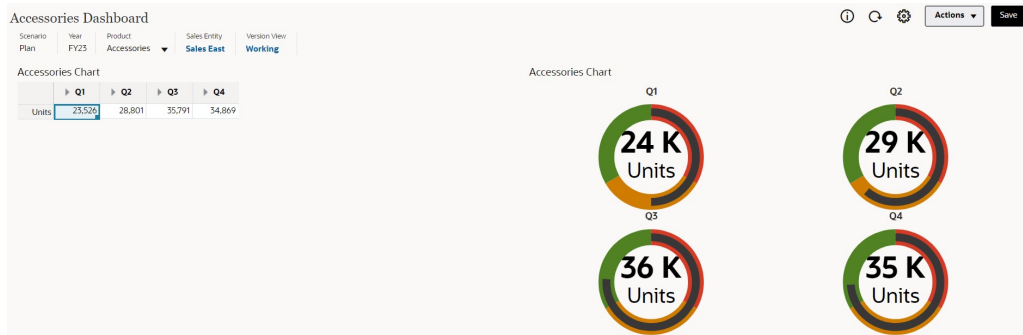
Dashboard 2.0 Example - Single Gauge Display

For **Display**, if **Single** is selected, then the gauge chart displays only the first column of the underlying form's data.



## Dashboard 2.0 Example - Multiple Gauge Display

For **Display**, if **Multiple** is selected, then a gauge chart is displayed for each column of the underlying form's data.



Dashboard designers can set these gauge chart type properties:

**Table 16-11 Gauge Chart Type Properties**

Setting	Description
<b>Scale</b>	Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select <b>K - Thousand</b> as the scaling option, the chart displays the value as 1,689K. Your scaling options: <ul style="list-style-type: none"> <li><b>None:</b> No scaling is applied.</li> <li><b>Auto:</b> The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T.</li> <li><b>K - Thousand:</b> The value is displayed as thousands units. For example, 1,689,000 displays as 1689K.</li> <li><b>M - Million:</b> The value is displayed as millions units. For example, 123,456,789 displays as 123M.</li> <li><b>B - Billion:</b> The value is displayed as billions units. For example, 12,345,678,912 displays as 12B.</li> <li><b>T - Trillion:</b> The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.</li> </ul>
<b>Display</b>	You can display <b>Single</b> or <b>Multiple</b> gauge charts in a component. If <b>Single</b> is selected, then the gauge chart displays only the first column of the underlying form's data. If <b>Multiple</b> is selected, then a gauge chart is displayed for each column of the underlying form's data.
<b>Gauge Type</b>	Select from the following options: <ul style="list-style-type: none"> <li><b>Circular</b></li> <li><b>Horizontal</b></li> <li><b>Vertical</b></li> </ul>
<b>Minimum Value</b> <b>Maximum Value</b>	The lowest and highest values on the gauge. The dashboard designer sets the values as a default, and then users can temporarily change them at runtime. If the dashboard designer doesn't specify these values, the application automatically sets the minimum value as zero and the maximum value as greater than the value on the gauge.

**Table 16-11 (Cont.) Gauge Chart Type Properties**

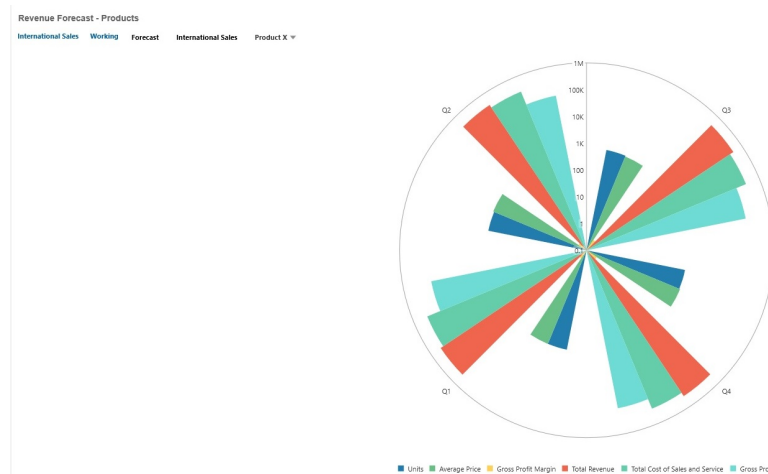
Setting	Description
<b>Desired Goal</b>	Specify whether <b>High</b> values or <b>Low</b> values are desirable.
<b>Low Threshold</b>	To visually indicate whether a measure lies in the acceptable range or not, these thresholds enable you to display the gauge in red, yellow and green based on the specified values.
<b>Medium Threshold</b>	
<b>High Threshold</b>	

## About the Radar Chart Type for Dashboard 2.0

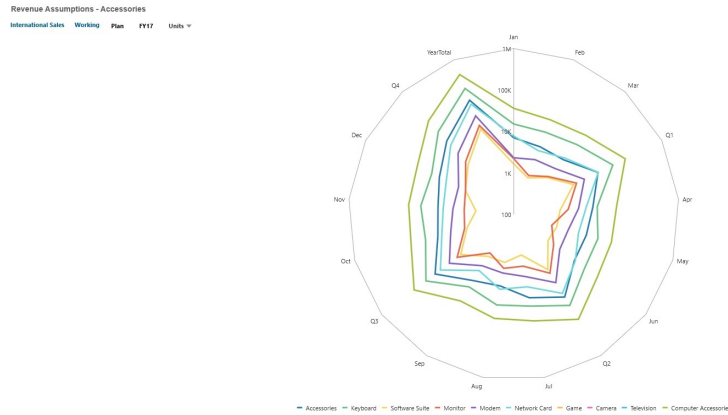
A radar chart is a two-dimensional chart type designed to plot one or more series of values over multiple quantitative variables. Radar charts are best for determining which variable in the data is doing better than the rest. Hence, they are mostly used for performance analysis.

For Dashboard 2.0, you can select bar, line, area, scatter, and bubble radar types.

### Dashboard 2.0 Example - Radar Bar Chart Type



### Dashboard 2.0 Example - Radar Line Chart Type



Dashboard designers can set these radar chart type properties:

**Table 16-12 Radar Chart Type Properties**

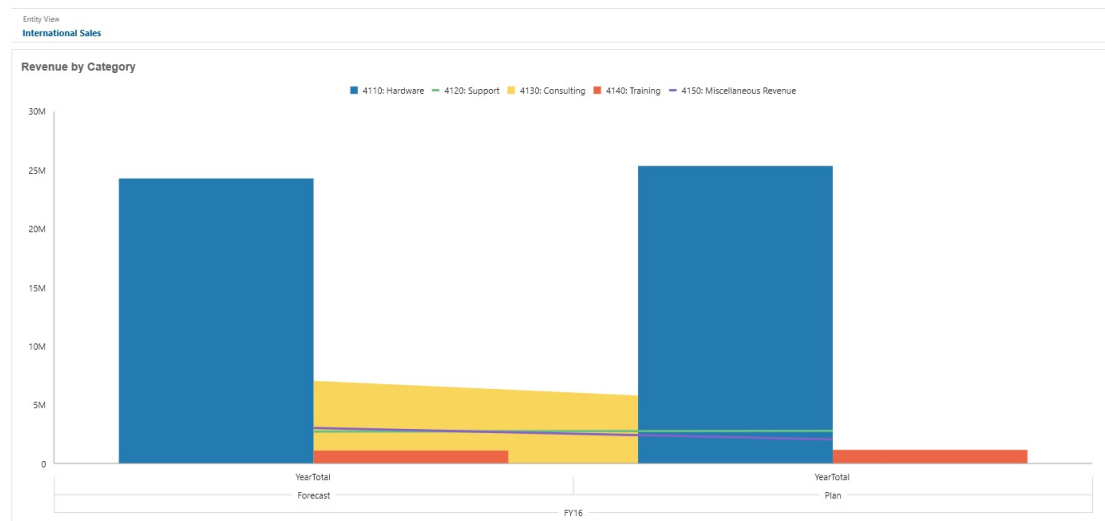
Setting	Description
<b>Value Scale</b>	<p>Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select <b>K - Thousand</b> as the scaling option, the chart displays the value as 1,689K.</p> <p>Your scaling options:</p> <ul style="list-style-type: none"> <li>• <b>None:</b> No scaling is applied.</li> <li>• <b>Auto:</b> The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T.</li> <li>• <b>K - Thousand:</b> The value is displayed as thousands units. For example, 1,689,000 displays as 1689K.</li> <li>• <b>M - Million:</b> The value is displayed as millions units. For example, 123,456,789 displays as 123M.</li> <li>• <b>B - Billion:</b> The value is displayed as billions units. For example, 12,345,678,912 displays as 12B.</li> <li>• <b>T - Trillion:</b> The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.</li> </ul>
<b>Type</b>	<p>Select from the following options:</p> <ul style="list-style-type: none"> <li>• <b>Bar</b></li> <li>• <b>Line</b></li> <li>• <b>Area</b></li> <li>• <b>Scatter</b></li> <li>• <b>Bubble</b></li> </ul>
<b>Legend Position</b>	Choose <b>Left</b> , <b>Right</b> , <b>Top</b> , <b>Bottom</b> , or <b>None</b> .
<b>Grid Lines</b>	Select <b>Hide</b> or <b>Show</b> .
<b>Logarithmic Scale</b>	Especially useful for displaying numerical data that covers a wide range of values (typically, the largest numbers in the data are hundreds or even thousands of times larger than the smallest numbers), a logarithmic scale displays these values in a way that is more compact and readable. Select whether to use a logarithmic scale in your radar chart.
<b>Color</b>	Select <b>Default</b> or click data in the chart and choose a custom color for that data.

## About the Combination Chart Type for Dashboard 2.0

The combination chart is a visualization that lets you merge into one chart any combination of bar, line, and area charts.

You can also add a secondary Y-axis on the opposite side from the primary Y-axis. Adding a secondary Y-axis lets you display the scale for one measure that doesn't scale appropriately with the other measures on the chart; for example, showing a percentage measure and a currency measure on the same chart.

### Dashboard 2.0 Example - Area Bar Line Combination Chart



Dashboard designers can set these combination chart type properties:

**Table 16-13** Combination Chart Type Properties

Setting	Description
<b>Value Scale</b>	<p>Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select <b>K - Thousand</b> as the scaling option, the chart displays the value as 1,689K.</p> <p>Your scaling options:</p> <ul style="list-style-type: none"> <li>• <b>None:</b> No scaling is applied.</li> <li>• <b>Auto:</b> The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T.</li> <li>• <b>K - Thousand:</b> The value is displayed as thousands units. For example, 1,689,000 displays as 1689K.</li> <li>• <b>M - Million:</b> The value is displayed as millions units. For example, 123,456,789 displays as 123M.</li> <li>• <b>B - Billion:</b> The value is displayed as billions units. For example, 12,345,678,912 displays as 12B.</li> <li>• <b>T - Trillion:</b> The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.</li> </ul>



**Table 16-13 (Cont.) Combination Chart Type Properties**

Setting	Description
<b>Line Weight</b>	Click the counter to set the line width. Note that the default width of a line is 5 pixels. You can select from 1 to 12 pixels.
<b>Legend Position</b>	Choose <b>Left</b> , <b>Right</b> , <b>Top</b> , <b>Bottom</b> , or <b>None</b> .
<b>Label Position</b>	Set the position of the data labels on the chart. Choose <b>Outside Bar Edge</b> , <b>Center</b> , <b>Inside Bar Edge</b> , or <b>None</b> .
<b>Grid Lines</b>	Select <b>Hide</b> or <b>Show</b> .
<b>Logarithmic Scale</b>	Especially useful for displaying numerical data that covers a wide range of values (typically, the largest numbers in the data are hundreds or even thousands of times larger than the smallest numbers), a logarithmic scale displays these values in a way that is more compact and readable. Select whether to use a logarithmic scale in your combination chart.
<b>Secondary Y</b>	Select which data to plot on a secondary Y-axis which will appear on the opposite side of the chart from the primary Y-axis. When the data values in a chart vary widely from data series to data series, or when you have mixed types of data (for example, currency and percentages), you can plot one or more data series on a secondary vertical (Y) axis. While the secondary Y-axis can be used with any line and bar chart type, it is more commonly used with the combination chart type, which helps to distinguish the data series that are plotted on the secondary Y-axis. For example, use a bar for the primary Y-axis, and line for the secondary Y-axis.
<b>Series</b>	Select the bar/line/area combination for the chart.
<b>Color</b>	Select <b>Default</b> or click data in the chart and choose a custom color for that data.
<b>Axes</b>	Select a <b>Custom Range</b> for the <b>X-Axis</b> , <b>Y-Axis</b> , and <b>Secondary Y-Axis</b> , or select <b>Off</b> .

## About the Tile Chart Type for Dashboard 2.0

A tile is a chart type that lets you select specific values from the cube to display. In addition to using a form as a data source, you can directly enter a cell intersection that provides the value for a tile. By default, six tiles are initially displayed in a component, but you can display up to 10 tiles in a component. Until you associate a tile with data, it displays sample data.

With a form as the data source for a tile:

- You can have up to 10 tiles per component (six by default).
- The values in the first column of the form (up to the 10th row) are used to create the tiles.
- By default, the row title in the form is the tile's title, and it gets its values from the first column, then by row.

- You can set the tile's component title, the tile's height percentage, legend labels, and can select which axes from the form to include. For example, if you select a form with three rows, the tile displays three values.

 **Note:**

Sometimes in a form, the first column may be collapsed (hidden) when viewed as a grid. But the collapsed column is still considered when the tile gets its values from the form. We recommend that you update the form definition and use a form as a data source that contains only the cells to be shown on the tile.

With a cell intersection as the data source for a tile, you can have only one tile per object.

The table below lists the options you can set for the tile chart type. Note that you can set whether the displayed value is horizontally aligned in the tile to the left, the center, or the right. Also note that currency symbols or currency codes are displayed in tiles for multicurrency applications.

**Table 16-14 Tile Chart Type Properties**

Setting	Description
<b>Value Scale</b>	<p>Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select <b>K - Thousand</b> as the scaling option, the chart displays the value as 1,689K.</p> <p>Scaling options:</p> <ul style="list-style-type: none"> <li><b>None:</b> No scaling is applied.</li> <li><b>Auto:</b> The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T.</li> <li><b>K - Thousand:</b> The value is displayed as thousands units. For example, 1,689,000 displays as 1689K.</li> <li><b>M - Million:</b> The value is displayed as millions units. For example, 123,456,789 displays as 123M.</li> <li><b>B - Billion:</b> The value is displayed as billions units. For example, 12,345,678,912 displays as 12B.</li> <li><b>T - Trillion:</b> The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.</li> </ul>
<b>Align Text</b>	<p>Text alignment options:</p> <ul style="list-style-type: none"> <li><b>Left</b></li> <li><b>Center</b></li> <li><b>Right</b></li> </ul>
<b>Count</b>	The number of tiles displayed in the component (up to 10)
<b>Display</b>	<p>Legend display options:</p> <ul style="list-style-type: none"> <li><b>Row and Column Dimensions</b></li> <li><b>Row Dimensions</b></li> <li><b>Column Dimensions</b></li> <li><b>None</b></li> </ul>

**Table 16-14 (Cont.) Tile Chart Type Properties**

Setting	Description
<b>Position</b>	Legend positioning options: <ul style="list-style-type: none"> <li>• <b>Left</b></li> <li>• <b>Right</b></li> <li>• <b>Top</b></li> <li>• <b>Bottom</b></li> </ul>
<b>Legend Font Size</b>	Decrease or increase the legend font size.
<b>Value Font Size</b>	Decrease or increase the value font size.

 **Note:**

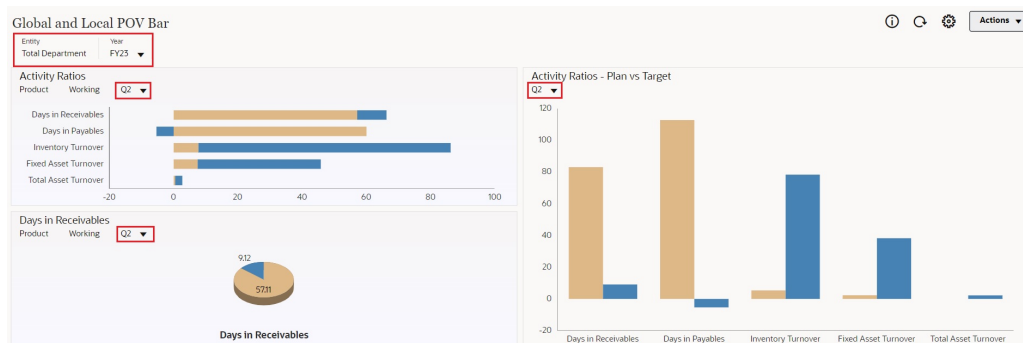
Dashboard 2.0 does not support cell details. Instead we recommend you use Quick Analysis as a data source, which is a more advanced version of cell details. If you convert a dashboard to Dashboard 2.0 that has a component using cell details, delete the component using cell details as a data source, and recreate it using Quick Analysis as a data source.

## About Global and Local POVs in Dashboard 2.0

A local POV on a form reflects the dimension members the form designer selected for that form. Dashboards also support *global POV bars*, so that the local POVs that are common are combined in the global POV bar to avoid repeating them in each component.


### Dashboard 2.0 POVs Example

This Dashboard 2.0 dashboard shows a global POV bar (showing Entity and Year) and local POVs (the drop-down lists for Q2):



With a global POV bar, if you change a page in the global POV bar and **POV Bar : Auto-Apply** is enabled, the page changes for all components in the dashboard that are based on forms. The global POV bar displays at the top of the dashboard above all the components, while the local POV bar displays within the component. User

variables are supported in both global and local POVs in dashboards and you can change dynamic user variables directly from the POV bar.

In the dashboard toolbar  **POV Settings** menu (in both the runtime and edit modes), you can set whether to hide dimension labels in the global POV (**POV Bar : Hide Dimension Labels**) and whether to enable or disable automatically applying changes (**POV Bar : Auto-Apply**).

About global POV bars:

- The POV Bar is made up of local POV dimensions, Page dimensions, and user variables.
- Depending on the local POV and page of each form on the dashboard, the global POV bar is automatically calculated.
- Global POVs reflect the content of the components using forms in that dashboard. That is, they apply to forms in a dashboard, to charts that are linked to forms, and to tiles that use forms as a data source. So if the dashboard doesn't include a form as a data source, then neither the local nor global POV bar is available.

Here's an example of how the global POV bar is calculated, based on the local POV dimensions for two forms:

The global POV bar is disabled:

- Form A local POV: Year, Entity, Product
- Form B local POV: Year, Entity, Project

The global POV bar is enabled:

- Global POV bar: Year, Entity
- Form A local POV: Product
- Form B local POV: Project

Because not all dimensions and page selections may be common to all forms on a dashboard, the complete POV for a dashboard component may get split between the local POV and the global POV bar. The global POV bar and the local POV together contain the complete intersection information for each form on a dashboard.

If there is only one component on the dashboard that uses a form as a data source, then the entire POV/page of the form is moved to the global POV bar.

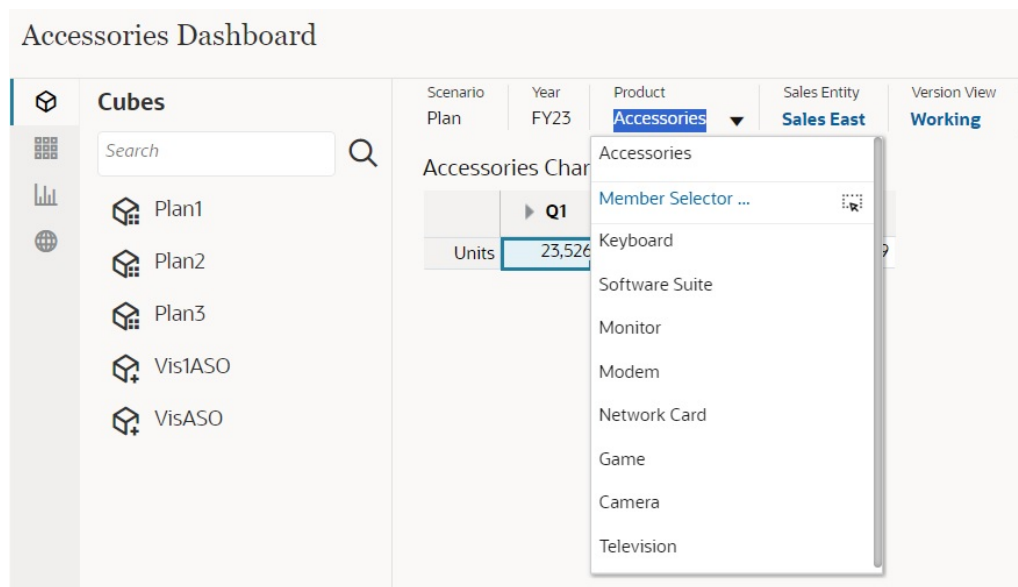
If there is more than one component on a dashboard that uses forms as a data source, then this is how the application determines which dimensions go in the global POV bar or stay in the local POV:


- If the dimension is in the POV or page of all the forms, and the member selection is the same in all the forms, the dimension goes in the global POV bar.
- If the dimension is in the POV on one form and in the page of another form, then the dimension stays in the local POV.
- If the dimension is in the POV, then the same members must be selected in all the forms for the dimension.
- If the dimension is a page dimension, then the selected page members must be the same and display in the same order in all the forms.

## Searching for POV Members in Dashboard 2.0 Dashboards

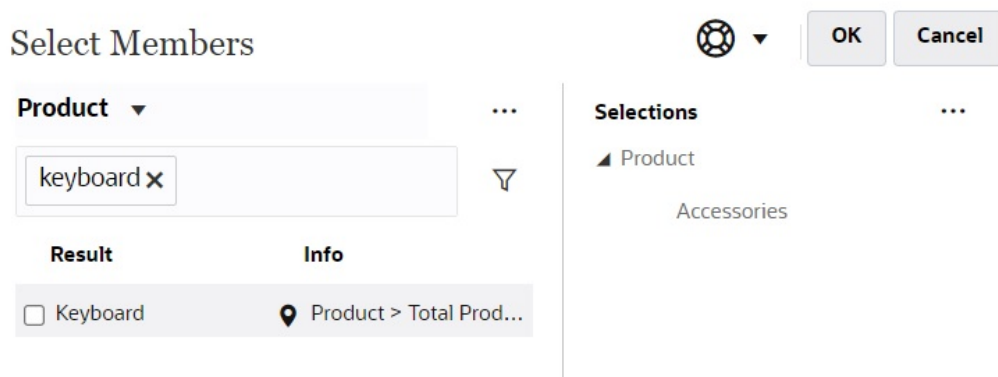
When working in Dashboard 2.0 dashboards, you can easily find new POV members. To search, click a POV link. The search interface displays a list of the most recently used members from which you can choose.


**Figure 16-1** Dashboard 2.0 POV Most Recently Used Members List



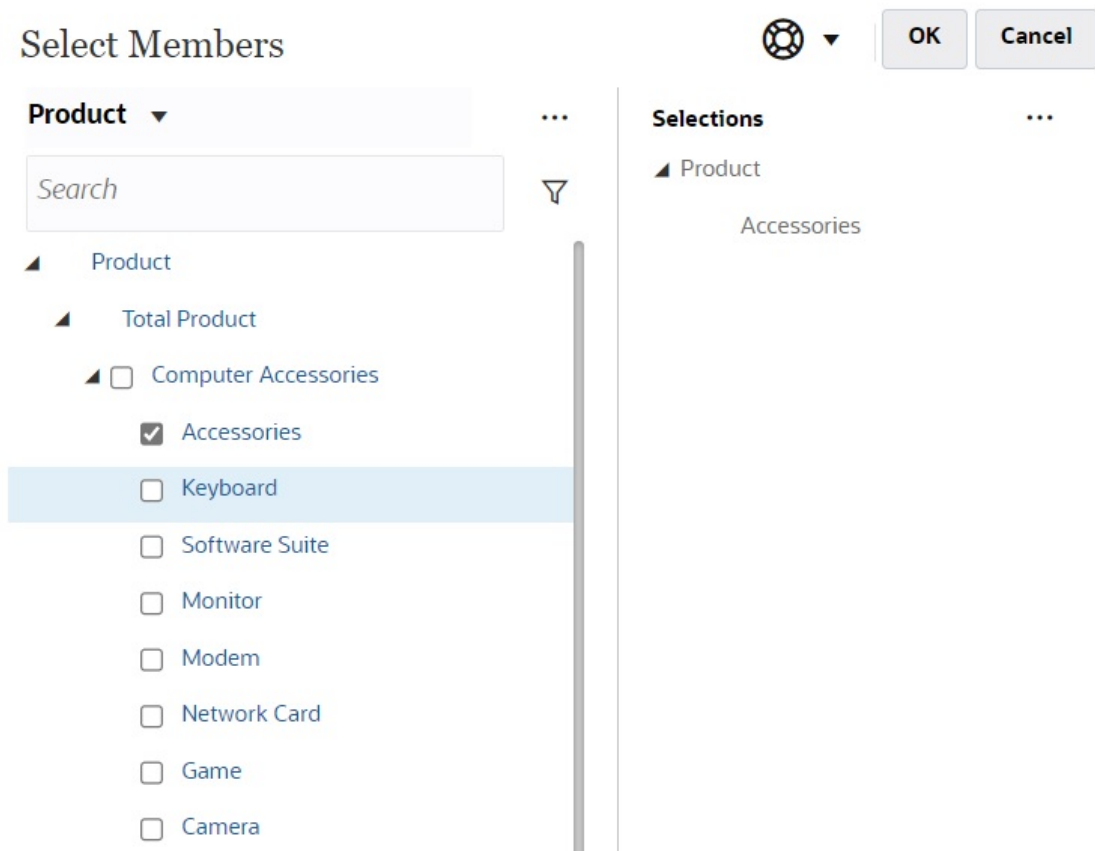
You also can search using the member selector. Click a POV link, then click the member selector icon  to launch the member selector. Members in the member selector are displayed as a hierarchy or you can type a member name in the **Search** box. If a member is located using the **Search** box, you'll see a result displayed under the Search box.

**Figure 16-2** Dashboard 2.0 Member Selector Search Results



You can view where the member is located within the hierarchy by hovering over the result's **Info** column and clicking .

**Figure 16-3** Dashboard 2.0 Member Selector Search Results in Hierarchy




### Dashboard 2.0 POV Bar Considerations

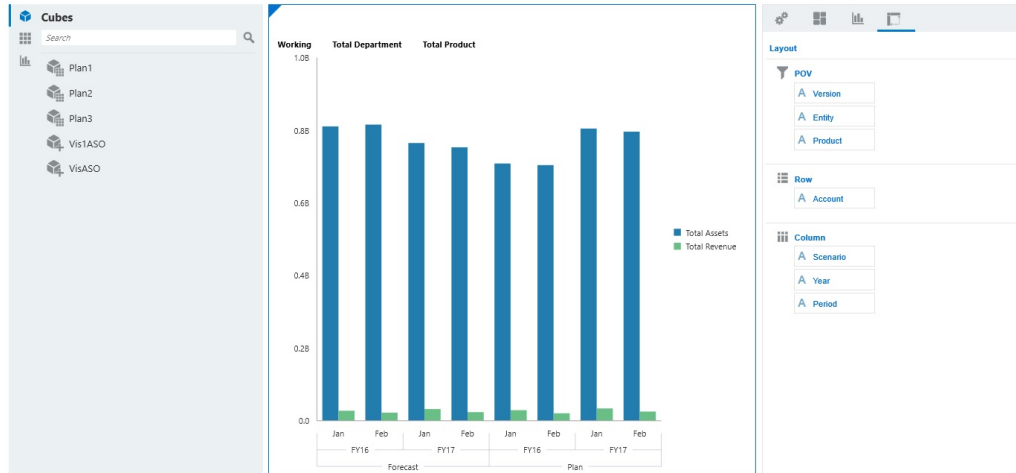
- For POV bar Page drop-down lists, the number of members shown in the page drop-down is controlled in **User Preferences** under **Page Options**. (From the Home page, click **Tools**, then **User Preferences**, and then click **Display** to view the **Page Options**.) If the number of items in the page drop-down exceeds this limit, then users cannot view them. Note that this will be fixed in a future release with the ability to use the member selector to browse through the rest of the members, similar to Dashboards 1.0.
- If your dashboard includes multiple forms, but some forms have different properties for the same dimension; for example, the Version dimension is hidden on some forms but it's visible on other forms in the same dashboard, the global POV might not display any Version dimension members. We recommend you ensure that all properties for all dimensions are the same for all forms included within a dashboard.

## About Quick Analysis

Quick Analysis lets you add components to dashboards without having a prebuilt form. You create an ad hoc query by typing member names in the Search bar or using the Member

Selector, and then you control the layout of the query in the Layout tab  of the Properties panel.

### Example Dashboard 2.0 Quick Analysis Chart in Design Mode




To create a quick analysis in your dashboard:

1. Select a cube for the query. You can do this in one of two ways:
  - Click in the workspace Search box to display a list of cubes, then select a cube.
  - Drag and drop a cube from the object palette to the dashboard workspace.

#### Note:

With either method, the system starts with a default query; a single intersection in the cube driven from your Most Recently Used, or MRU. The default query varies based on what you've recently been looking at in the cube.



If the MRU intersection in the cube is invalid, you'll get an error. If you see an error, open another form and change the page to a valid intersection so that the MRU gets updated with a valid intersection.


2. Refine the query by specifying members for the query:
  - In the Search box, type member names to display an auto-complete list from the cube.
  - Launch the member selector  to select members, and then click **OK**.

 **Note:**

When using the Search box to find members for quick analysis and more than 25,000 members are present in a cube, the Search box only searches the first 3000 members in the dimension for the cube. If the cube contains less than 25,000 members, then the Search box will search through all members. To search a cube with more than 25,000 members, launch the member selector to make your quick analysis selections.

3. Select a chart type for the query.

Click  to select a chart type; for example, Bar .

4. In the Properties panel, click the Layout tab .
5. Drag and drop the dimensions in the Layout tab of the Properties panel to other sections of the Layout tab to change the POV, Row, and Column layout of the dashboard component.

**Videos****Your Goal**

Discover how to add quick analysis components to dashboards without having a prebuilt form. You learn how to create an ad hoc query in the Dashboard Designer and format the results by changing the dimension layout and applying visualizations.

**Watch This Video**

[Creating Quick Analyses in Dashboards 2.0](#)

## Using Dashboards to Work with Data

**Related Topics**

- [Understanding Dashboards](#)  
Dashboards give you an overview to key information and let you enter, change, and save data.
- [About Dashboard Versions](#)
- [Viewing Dashboards](#)
- [Working with Dashboard 1.0 Dashboards](#)
- [Working with Dashboard 2.0 Dashboards](#)  
Helpful information about working with Dashboard 2.0 dashboards in the runtime environment.
- [Working with the Dashboard 2.0 Global Toolbar](#)
- [Working with Dashboard 2.0 Components](#)
- [Working with Forms 2.0 Grids in Dashboard 2.0](#)  
In Dashboard 2.0, you can work directly with data in forms grids if the underlying form is a Forms 2.0 form.
- [Drilling Through on Charts and Legends](#)



- [Working with POVs in Dashboard 2.0](#)
- [Opening the Member Selector in Dashboards 2.0](#)  
To select members in Dashboards 2.0, use the member selector.
- [Working with Dashboard 2.0 Dashboards in Navigation Flows](#)
- [Working with Master Forms and Details in Dashboard 2.0 Components](#)
- [Support for Valid Intersections in Dashboard 2.0 Dashboards](#)
- [About Quick Analysis](#)

## Understanding Dashboards

Dashboards give you an overview to key information and let you enter, change, and save data.

You can work with multiple forms or charts, enter data or change the data in one, and see the immediate effects in other forms, charts, and tiles in the dashboard. Change a driver in the grid and see its impact immediately in the chart.

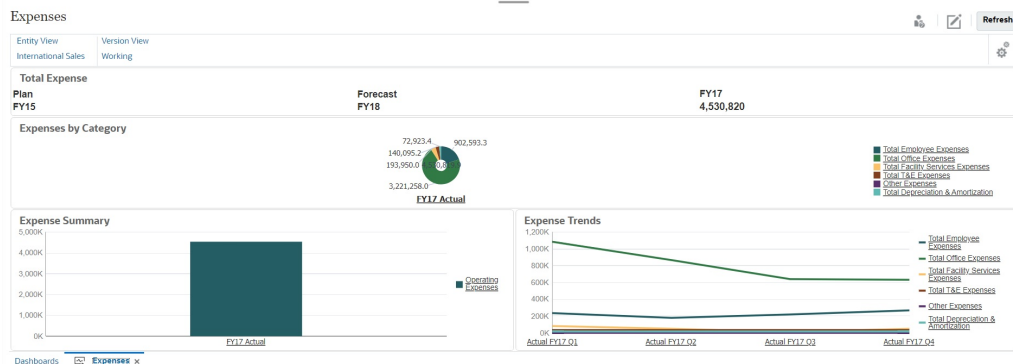
When you save data, it's saved in all the objects in a dashboard. Depending on the form's design, you can also drill down into more detail. You can select which members to work with and change chart types, for example. Hovering your mouse over chart elements highlights the element and displays a data label. Your administrator creates dashboards, but you have a lot of flexibility when using them. For example, for many chart types, you can customize the colors that represent the data.



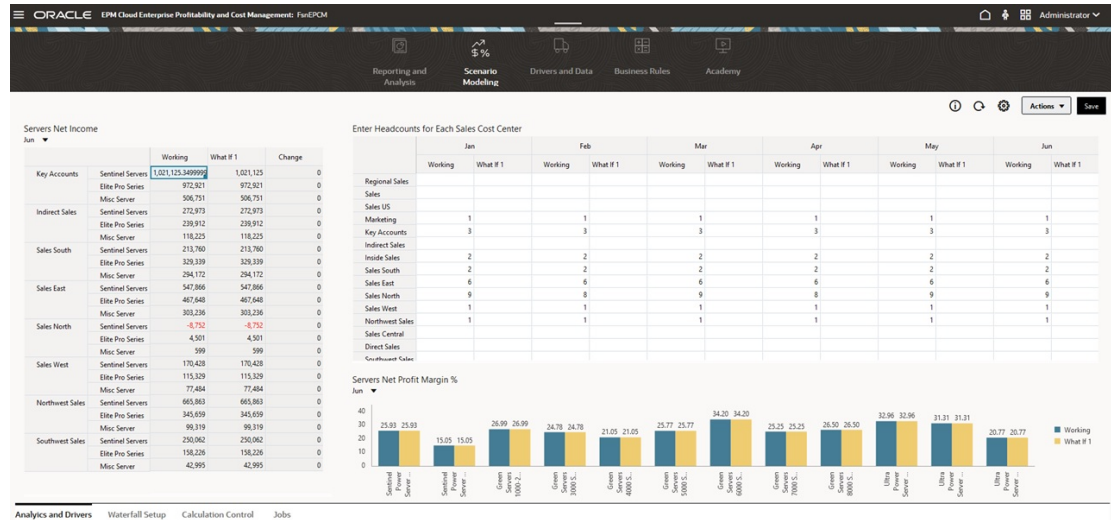
### Note:

You can no longer mark a dashboard page as default.

## Dashboard 1.0 Example





## Dashboard 2.0 Example



## About Dashboard Versions

Dashboards are currently available in two versions: Dashboard 1.0 and Dashboard 2.0. To help you differentiate between the dashboard versions on the **Dashboards** listing page, we've provided an icon in front of each dashboard:

- 
 : Dashboard 1.0
- 
 : Dashboard 2.0

Both dashboard versions currently coexist in the same business process at the same time. Depending on which version you are viewing, the dashboards will look a little different and the user interface is also slightly different.

### Dashboard 2.0 Runtime Features

Dashboard 2.0 Runtime supports:

- More chart types than Dashboard 1.0; for example, Waterfall, Pyramid, and Geomap and sub-chart types for Radar, Combination, and Gauge charts are all Dashboard 2.0 features
- Creating tables in dashboards with visual inline views of data, called Spark Charts
- Quick Analysis, which lets you add components to dashboards without having a prebuilt form

You create an ad hoc query by typing member names in the Search bar or using the Member Selector, and then you control the layout of the query in the Layout tab of the Properties panel.

- Working directly with data in form grids if the underlying form is a Forms 2.0 form
- If working with a Forms 2.0 form grid:

- Global write-back option: global **Save** button with **Run on Save** rules
- Individual form write-back option: local **Save** with **Run on Save** rules
- In table charts, highlighting parent members to distinguish from leaf-level members
- Updated global and local POV bars that use the Oracle JET member selector
- An updated Maximize mode in charts and grids that are now consistent with one another
- Enhanced master forms and details that enable you to apply context from any grid
- Flexible layouts for all dashboards
- Valid intersections support for global and local POV bars
- The ability to **Edit** and **Edit without Data** from a custom menu outside of the Dashboards listing page
- Information icon for runtime dashboards and forms
- Opening and editing forms from within a runtime dashboard
- The ability to visualize different chart types in a runtime dashboard component
- Drill-through in single and multiple Pie and Doughnut charts
- Rationalized Actions, POV Settings, and Component menus
- The ability to switch over to Oracle Smart View for Office for all data operations; for example, Open, Edit, Create, Refresh, Data Submit, Page/POV Change
- A conversion utility to convert from Dashboard 1.0 to Dashboard 2.0; both batch conversions (at the folder level) and individual dashboard conversions are supported
- The ability to filter Dashboard 1.0 and Dashboard 2.0 dashboards on the listing page
- The ability to edit dashboards not only from the Dashboards listing and runtime pages, but also from custom navigation menus wherein dashboards are embedded.

### Considerations for Dashboard 2.0

- 3D visualization is not supported in Dashboard 2.0. This affects the following Dashboard 2.0 chart types:
  - Area
  - Bar
  - Bubble
  - Column
  - Combination
  - Doughnut
  - Gauge
  - Line
  - Radar
  - Scatter

Dashboard 1.0 still supports 3D visualizations for these chart types.

- In a future update, Dashboard 2.0 will support Smart Push.

## Viewing Dashboards

- [Viewing the Dashboards Page](#)
- [Features of the Dashboards Page](#)
- [Dashboards Page Actions Column](#)

### Viewing the Dashboards Page

To view the **Dashboards** page:

1. On the Home page, click **Dashboards**.
2. To open a dashboard, click the dashboard's name.

This opens the dashboard in the *runtime* environment.

#### Note:

If you've selected a Dashboard 2.0 dashboard and you see an `Error` during `Dashboard 2.0 component initialization` message, the dashboard has Forms 2.0 forms associated with it. You must ensure that Forms 2.0 are enabled before you can view the dashboard.

To enable Forms 2.0, click **Application**, then **Settings**, and then under **Other Options**, find **Forms Versions**, select **Forms 2.0**, and then click **Save**.

### Features of the Dashboards Page

On the **Dashboards** page:

- Folders are supported. The **Dashboards** page uses the same folder hierarchy as infolets and data entry forms and all artifacts and folders reside under a root folder called **Library**.

#### Note:

Only administrators can add files (for example, dashboards, infolets, forms, reports, and so on) to the **Library** root folder.




- You can toggle between viewing dashboards by a flat view or a tree view:



- Dashboards are available in two versions. To help you differentiate between the dashboard versions on the **Dashboards** listing page, we've provided an icon in front of each dashboard:

–  : Dashboard (1.0)

–  : Dashboard 2.0

- The **Dashboards** page can be filtered by type. Click , and then select from the following filter options:
  - **All Types** (default)
  - **Dashboard 1.0**
  - **Dashboard 2.0**
- To search for a specific dashboard, click   
to search by keywords or  to narrow the search to specific library folders.

### Dashboards Page Actions Column

On the right side of the **Dashboards** page there is an **Actions** column. Clicking on the **•••** icon next to the dashboard or folder, displays the following actions:

- Folder Actions:
  - **Assign Permission:** Assigns access permissions to the folder. Folder permissions apply to all items within that folder, even to items that may not be visible in the list.
  - **Create Dashboard:** Creates a Dashboard 1.0 dashboard in this folder.
  - **Create Dashboard 2.0:** Creates a Dashboard 2.0 dashboard in this folder.
  - **Create Folder:** Creates a new folder.
  - **Delete:** Deletes a folder. The folder must be empty to delete it.
  - **Rename:** Renames a folder. The folder cannot be renamed if it contains other folders.
  - **Move to:** Moves the folder to another location in the folder hierarchy.
  - **Convert All Dashboards to 2.0:** Finds any Dashboard 1.0 dashboards within the folder hierarchy, and converts them to Dashboard 2.0 dashboards.
- Individual Dashboard Actions:
  - **Edit:** Opens the dashboard in the Dashboard Designer with the underlying form data. The dashboard opens in a dynamic tab.
  - **Edit without Data** (Dashboard 2.0 option only): Opens the dashboard in the Dashboard Designer without the underlying form data so you can more easily perform such actions as realigning the dashboard components and tiles. The dashboard opens in a dynamic tab.
  - **Rename:** Renames a dashboard.
  - **Copy As:** Copies a dashboard with a new name. The dashboard is copied to the listing directly under the original dashboard.

- **Delete:** Deletes a dashboard.
- **Move to:** Moves a dashboard to another folder.
- **Assign Permission:** Assigns access permissions to the dashboard.
- **Convert to Dashboards 2.0** (Dashboard 1.0 option only): Converts the Dashboard 1.0 dashboard to a Dashboard 2.0 dashboard.
- **Copy URL:** Enables you to copy and share the direct URL for a dashboard.

## Working with Dashboard 1.0 Dashboards

As a reminder, Dashboard 1.0 dashboards on the listing page are identified by this icon:






Move the cursor over an object on the dashboard to display the hover toolbar



Dashboard 1.0 hover icons provide options such as **Instructions**, **Actions**, **Save**, **Refresh**, **Settings**, and **Maximize**, depending on the type of object.

To work with objects in Dashboard 1.0 dashboards, from the hover toolbar:

- Click **Instructions**  to view instructions for a form (only available if instructions are configured for a form).
- Click **Actions**  to access such form options as **Spreadsheet Export** or **Supporting Detail**.
- Click **Settings**  to change the chart type associated with the form or its height percentage.

Customize charts in dashboards. Each chart type has options that are specific to it. For example, for a bar chart, you can set:

- The width percentage of the bars
- The type of chart displayed (for example to area, bubble, column, doughnut, funnel, gauge, scatter, radar, and so on)
- The chart to display in 3D
- Horizontal or vertical placement
- The background
- The legend's and label's position

And if the 1.0 dashboard includes a gauge chart type, you can set the **Maximum Value** that the dial displays.

Some other points to know about using 1.0 dashboards:

- Changes you make to the chart type options aren't saved for the next session. Clicking **Save** saves the data you enter or change, but not the dashboard definition.
- If you select a new value from the Page drop-down in dashboards, a Go button (right arrow) is displayed in the POV bar.



Click the Go button to show your selection.

- You can enter or change data in a form's cell only if the intersection in the underlying form is writable.
- In a Smart Form (with the form design option **Autosave** enabled), when you enter data and tab out of the cell, the other objects refresh, displaying fresh data.
- By default, missing or suppressed data is plotted as zeros in graphs. You can clear the **Plot Missing Values as Zero** setting to ignore missing or suppressed data in certain chart types so it's no longer plotted as zeros. The chart types to which this setting applies are Area, Bubble, Combination, Line, Radar, and Scatter.
- For Dashboards that use a **Flexible** layout, you can drag an object's border to resize it. You can also click an object's handle to expand it, and then click the handle again to restore the object to its original size.

## Working with Dashboard 2.0 Dashboards

Helpful information about working with Dashboard 2.0 dashboards in the runtime environment.

As a reminder, Dashboard 2.0 dashboards on the **Dashboards** page are identified by this icon:



Opening a dashboard from the **Dashboards** page, opens the dashboard in the *runtime* environment.

### Videos

Your Goal	Watch This Video
Learn about the new features and functionality in runtime Dashboards 2.0 in Cloud EPM.	 <a href="#">Overview: New Features in Dashboards 2.0 in Cloud EPM (Nov 2023)</a>

### Related links:




- [Working with the Dashboard 2.0 Global Toolbar](#)
- [Working with Dashboard 2.0 Components](#)
- [Drilling Through on Charts and Legends](#)
- [Working with POVs in Dashboard 2.0](#)
- [Opening the Member Selector in Dashboards 2.0](#)
- [Working with Dashboard 2.0 Dashboards in Navigation Flows](#)
- [Working with Master Forms and Details in Dashboard 2.0 Components](#)
- [Support for Valid Intersections in Dashboard 2.0 Dashboards](#)

## Working with the Dashboard 2.0 Global Toolbar

The icons and menus at the top of each dashboard enable you to perform the following actions on the entire Dashboard 2.0 dashboard:



**Table 16-15** Dashboard Header Toolbar

Object	Description
	<p><b>Information:</b> Displays the name of the dashboard, the path to the location of the dashboard within the Library hierarchy, and any descriptive information. For example:</p> <ul style="list-style-type: none"> <li>• <b>Name:</b> Operating Expenses - Actual vs Plan</li> <li>• <b>Path:</b> /Library</li> <li>• <b>Description</b> (Optional): Enter a description of the dashboard.</li> </ul>
	<p>Refreshes the data for the entire dashboard.</p>
	<p>Displays the POV Settings menu with the following menu options:</p> <ul style="list-style-type: none"> <li>• <b>POV : Hide Dimension Labels:</b> Hides dimension labels in the global POV.</li> <li>• <b>POV : Auto-Apply:</b> Enables or disables the ability to automatically apply changes to the entire dashboard. If you change a page in the global POV bar and <b>POV : Auto-Apply</b> is enabled, the page changes for all components in the dashboard that are based on forms.</li> <li>• <b>POV : Clear All Page Selections</b></li> </ul>
<b>Actions menu</b>	<p>Displays the following dashboard actions (you must have the correct permissions to edit dashboards):</p> <ul style="list-style-type: none"> <li>• <b>Edit:</b> Opens the dashboard in the Dashboard Designer with the underlying form data. The dashboard opens in a dynamic tab next to the current tab.</li> <li>• <b>Edit without Data:</b> Opens the dashboard in the Dashboard Designer without the underlying form data so you can more easily perform layout changes such as realigning the dashboard components and tiles or updating the form properties. The dashboard opens in a dynamic tab next to the current tab.</li> </ul>
<b>Save</b>	<p>Clicking <b>Save</b> writes back all dashboard grid changes and runs any rules associated with the dashboard, including runtime prompts.</p> <p>Note:</p> <ul style="list-style-type: none"> <li>• You can attach multiple rules with or without runtime prompts with global Save.</li> <li>• Runtime prompts open as a "drawer" from the right side for better usability.</li> </ul> <p>Clicking <b>Save</b> saves the data you enter or change for all dashboard components, but it does not save changes to the dashboard definition.</p>

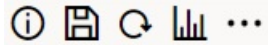


## Working with Dashboard 2.0 Components

Dashboards are made up of components. Each component contains a dashboard object such as a form, a cube, or another visualization (charts, tiles, and so on).

### Dashboard Component Toolbar

Hover over a component on the dashboard to display the component toolbar




. The hover toolbar enables you to perform actions on the component only.

**Table 16-16 Dashboard Component Hover Toolbar**

Object	Description
	<b>Information:</b> Displays the underlying form name, the path of the form, and the cube for the component.
	<b>Save:</b> Saves changed data and runs rules associated with the component.
	<b>Refresh:</b> Refreshes the data associated with the dashboard component.
	<b>Chart Type:</b> Changes the visualization for the component.
	<p>Perform the following <b>Actions</b> on the component:</p> <ul style="list-style-type: none"> <li>• <b>Maximize:</b> Enlarges the dashboard component. Once maximized, click <b>Restore</b> to minimize the dashboard component to its original size.</li> <li>• <b>Open Form:</b> Opens the runtime form associated with the component in a dynamic tab next to the current tab.</li> <li>• <b>Edit Form:</b> If you have the correct permissions, opens the form associated with the component in the forms editor. The forms editor opens in a dynamic tab next to the current tab.</li> </ul>

### Working with Component Objects in the Runtime Environment

- Changes you make to the dashboard components in the runtime environment aren't saved for the next session. Changes are also not saved if you click the Show/Hide bar to hide the icon ribbon at the top of the page; the page refreshes and any changes you've made will not be saved.
- By default, missing or suppressed data is plotted as zeros in graphs. You can change the **Plot Missing Values as Zero** setting to **No** to ignore missing or suppressed data in certain chart types so it's no longer plotted as zeros. The chart types to which this setting applies are Area, Bubble, Combination, Line, Radar, and Scatter. To reset the **Plot Missing Values as Zero** setting in the properties panel, click the tab for the type of chart (Area, Bubble, Combination, Line, Radar, or Scatter), then click **Yes** to toggle the setting to **No**.
- Components default to displaying the form grid and the grids displayed are writable if the associated form is a Forms 2.0 form. To replace a grid with a chart, hover over the grid to display the hover icons in the upper-right corner of the component. Click , and a menu of charts is displayed from which you can

- choose. Charts selected during runtime are not persisted when the runtime dashboard is closed.
- If a URL added to a dashboard doesn't work in the runtime environment, right-click the URL and open the link in a new browser tab.
  - While in a dashboard, you can right-click inside a grid to view the grid's context menu:
    - **Edit** options: **Cut, Copy, Paste, Clear**
    - **Adjust** options:
      - \* **Adjust Data:** Increase or decrease the selected cell data by a positive or negative value, or a percentage value.
      - \* **Grid Spread:** Specify an amount or percentage by which to increase or decrease values across multiple dimensions, based on the existing values in the target cells. You can select **Proportionally, Evenly, or Fill** spread pattern. To use Spread, your administrator must enable Grid Spread as a form property.
    - **Comments:** Explain data or provide background, and attach external files. You can add comments and attachments to a cell or to a range of cells across multiple dimensions.
    - **Change History:** Displays the history of the changes made to the cell data.
    - **Lock/Unlock Cells:** Temporarily lock cells while you calculate and fill in other values. A lock icon displays on locked cells. To unlock the cells, click **Lock/Unlock Cells** again.
    - **Analyze on Cell:** Opens ad hoc in a dynamic tab.
    - **Apply Context:** Filters the data in the target forms or charts that is relevant to the data in a master form.
  - Line item details are supported only if the component is maximized. To maximize a component, hover over the component to display the hover icons in the upper-right corner of the component. Click , and then select **Maximize** to enlarge the dashboard component. After you're done working with the component, click **Restore** to minimize the dashboard component to its original size.
  - When you click **Refresh Data** either on a Tile or by clicking the global **Refresh Data** option, the Tile data will display after a "blink." The "blink" indicates that the refreshed data is populated.
  - When viewing a Table, parent members are highlighted to distinguish them from leaf-level members.

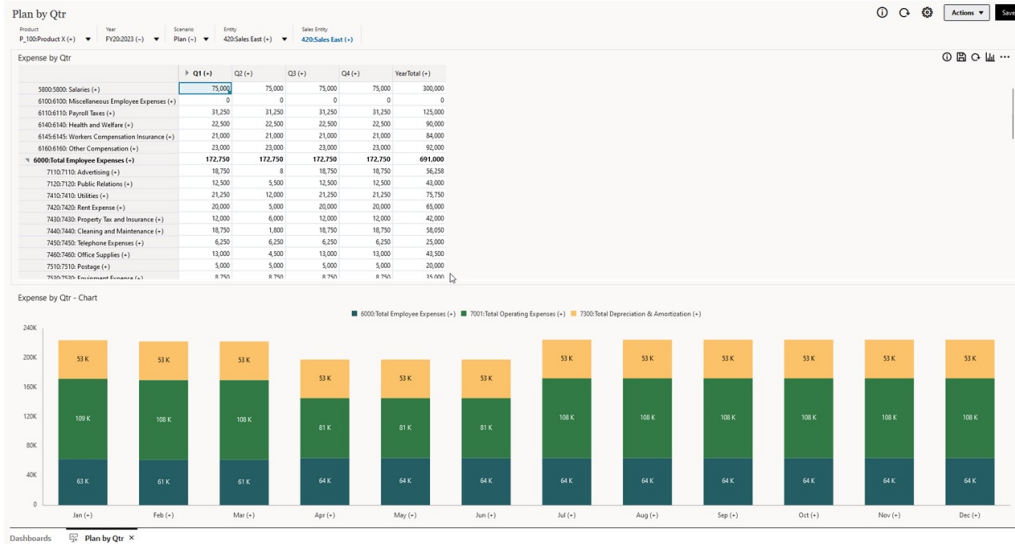
## Working with Forms 2.0 Grids in Dashboard 2.0

In Dashboard 2.0, you can work directly with data in forms grids if the underlying form is a Forms 2.0 form.

Newly added components in Dashboard 2.0 default to displaying the form grid, and the grids are writable if the associated form is a Forms 2.0 form.


In grids you can update cell values, run rules, and save changes facilitating write-back from the dashboard.

## Example Dashboard 2.0 Dashboard with a Grid



## Saving Updates to Dashboard 2.0 Grids

After updating a grid within Dashboard 2.0, clicking the global **Save** button writes back all dashboard grid changes and runs any rules associated with the dashboard, including runtime prompts.

Clicking  within an individual grid component in a dashboard writes back the changes for that grid and runs the rules associated only with the individual grid.

## Rules

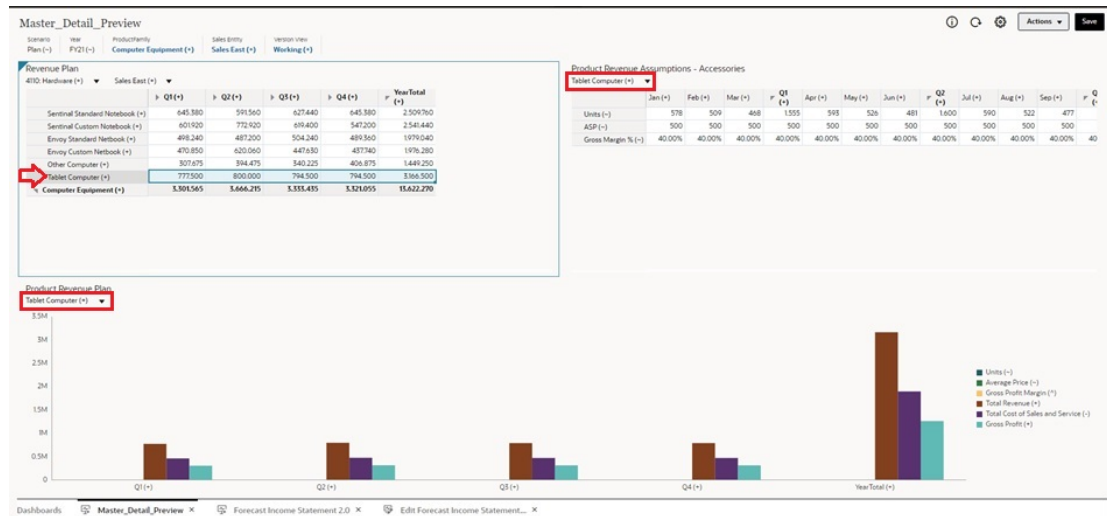
The Dashboard Designer includes an **Associations** tab in the Properties panel for associating rules to a dashboard.

When you save a dashboard or a grid component in a dashboard, any rules associated with the grids will launch when the dashboard grid is saved, including runtime prompts. Runtime prompts open as a "drawer" from the right side.

## Grids in Master Details Dashboards

Dashboard 2.0 supports designating grids as the master component when designing dashboards with master details.

To filter the data in the target forms or charts that is relevant to the data in a grid, right-click the relevant data row in the master grid and select **Apply Context**.



### Context Menu in Dashboard Grids

While in a dashboard, you can right-click inside a grid to view the grid's context menu:

- **Edit options: Cut, Copy, Paste, Clear**
- **Adjust options:**
  - **Adjust Data:** Increase or decrease the selected cell data by a positive or negative value, or a percentage value.
  - **Grid Spread:** Specify an amount or percentage by which to increase or decrease values across multiple dimensions, based on the existing values in the target cells. You can select **Proportionally**, **Evenly**, or **Fill** spread pattern. To use Spread, your administrator must enable Grid Spread as a form property.
- **Comments:** Explain data or provide background, and attach external files. You can add comments and attachments to a cell or to a range of cells across multiple dimensions.
- **Change History:** Displays the history of the changes made to the cell data.
- **Lock/Unlock Cells:** Temporarily lock cells while you calculate and fill in other values. A lock icon displays on locked cells. To unlock the cells, click **Lock/Unlock Cells** again.
- **Analyze on Cell:** Opens ad hoc in a dynamic tab.
- **Apply Context:** Filters the data in the target forms or charts that is relevant to the data in a master form.

### Considerations for Working with Grids in Dashboard 2.0

- A Dashboard 2.0 dashboard will not open if the dashboard contains a grid and the **Forms Version** application setting is set to **Forms 1.0**.
- The Grid visualization option will not be available if the **Forms Version** application setting is set to **Forms 1.0** and Dashboard 2.0 artifacts are created.

## Drilling Through on Charts and Legends

Drill-through can be performed on parent members to view the values of child members.

You can drill into more detailed information about the data within charts and their legends. To view drill-through details in a chart such as a Pie chart, click a color in the pie. Drill-through

works for components with single Doughnut and Pie charts, as well as components with multiple Doughnut and Pie charts.

Drill-through is also available from the chart's legends. Click a legend label, and the chart changes to display drill-through details for that legend item.



**Note:**

Drill-through in multiple Pie and Doughnut charts from legends is not supported.

To return to the original chart after viewing drill-through details, click the parent link that displays in the upper right corner of the window.



**Note:**

Table, Tile, and Gauge charts do not support drilling. If you drill into a chart type such as a Pie chart, then switch to a Table, Tile, or Gauge chart, you'll no longer see the parent link to return to the original chart. If this occurs, switch back to the Pie chart to view the parent link again.

## Working with POVs in Dashboard 2.0

### POV Settings

When your Dashboard 2.0 dashboard contains a global or local POV, changes to the POV are automatically applied. If you don't want to automatically apply changes, you can deselect auto-apply for the POV bar in the dashboard **POV Settings** menu. Click



, and then click **POV : Auto-Apply** to deselect it.

### Searching for POV Members


When working in Dashboard 2.0 dashboards, you can more easily search for new POV members in the dashboard's global or local POVs. To search, click a POV link, type the name of another member, and the search function will automatically filter to that member name. The search interface also displays a list of the most recently used members from which you can choose.



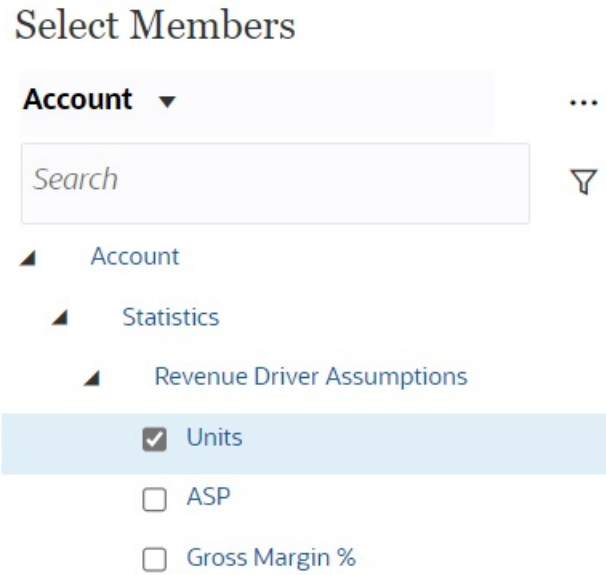
**Note:**

Valid intersections are supported for global and local POV bars. This means that Dashboard 2.0 complies with valid intersection rules by excluding invalid intersections from global and local POV bars.



You can view where the member is located within the hierarchy by hovering over the result's **Info** column and clicking .

**Figure 16-6** Select Members Search Result in Hierarchy

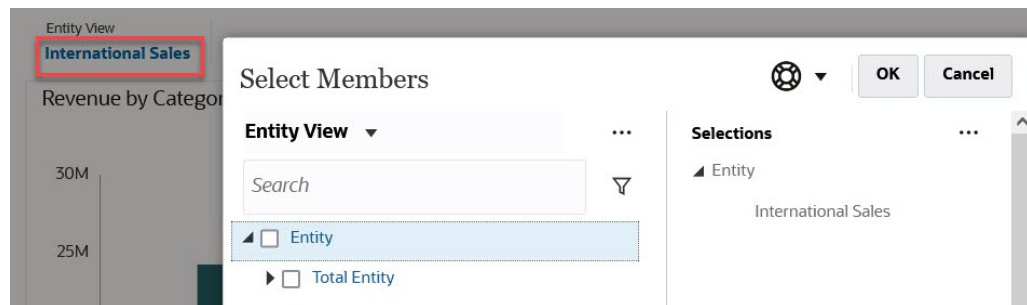


## Opening the Member Selector in Dashboards 2.0

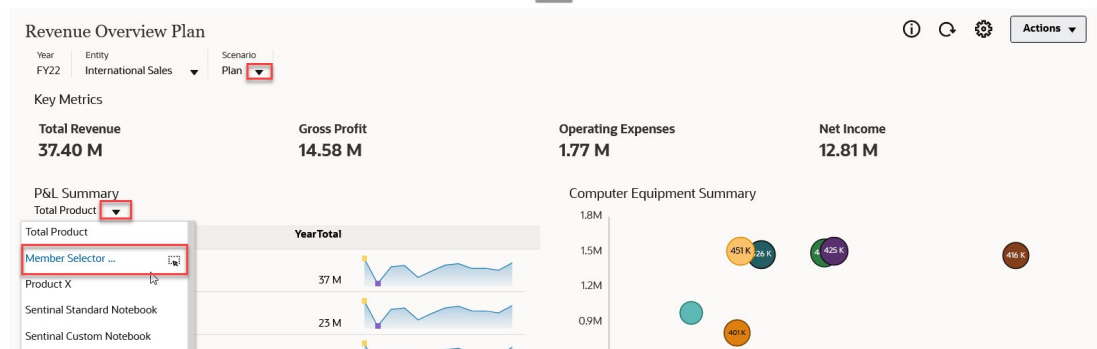
To select members in Dashboards 2.0, use the member selector.

To open the member selector from a Dashboards 2.0 dashboard:

Click a member on the Global POV bar:



You can also click the Page drop-down list in a Global or local POV, and then select **Member Selector**:



In a business rules run-time prompt, when the prompt is for members, click the **Member Selector** icon:



For more information about using the member selector, see [Using the Member Selector](#).

## Working with Dashboard 2.0 Dashboards in Navigation Flows

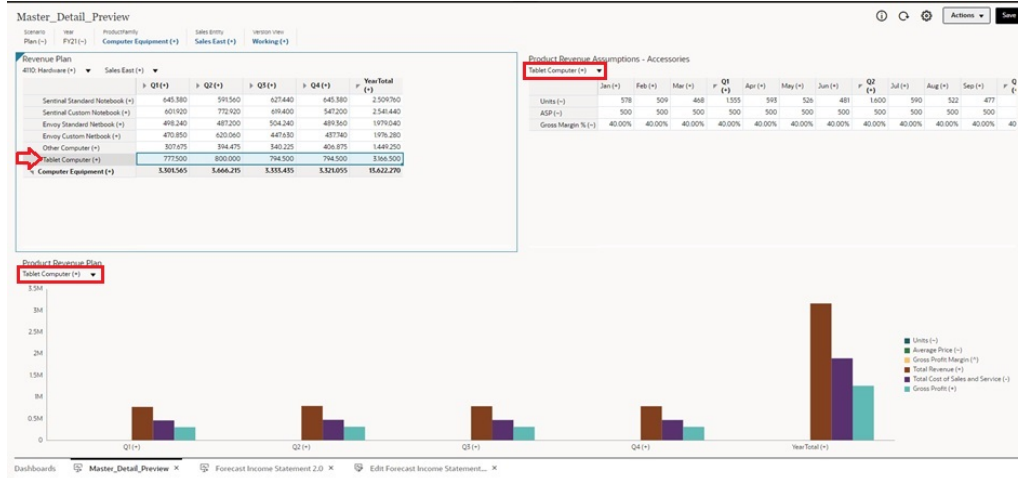
If Dashboard 2.0 and Forms 2.0 are enabled in your business process, navigation flows support the features included in Dashboard 2.0 and Forms 2.0, including the ability to edit a form from within the runtime dashboard, and editing it with or without data. Dashboard 2.0 component actions such as **Maximize** and **Open Form** also work directly within the navigation flow.

## Working with Master Forms and Details in Dashboard 2.0 Components

Your administrator can design dashboards that have one master form and multiple detail or target components (forms or charts). With this dashboard configuration, the selection of members in the master form automatically filters to the members in the target components, and the target components show only the details that are relevant to the members highlighted in the master form.

To filter the data in the target forms or charts that is relevant to the data in a master form, right-click the relevant data row in the master form and select **Apply Context**.






## Support for Valid Intersections in Dashboard 2.0 Dashboards

Your administrator can create rules which allow data entry within certain cell intersections in forms. These intersections are called valid intersections.

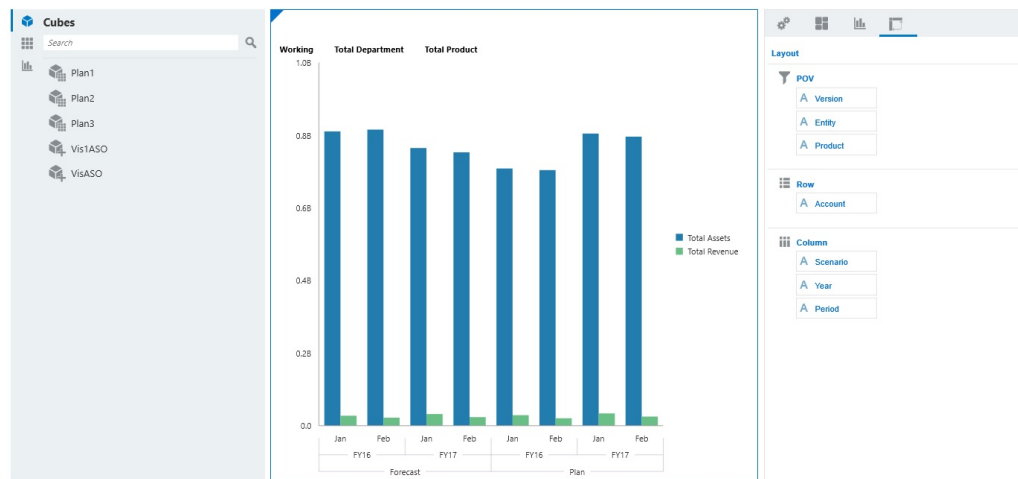
Dashboard 2.0 complies with valid intersection rules by excluding invalid intersections from dashboards during runtime. If members have been defined by your administrator to be excluded, the runtime dashboard and the member selector will not display those members.

## About Quick Analysis

Quick Analysis lets you add components to dashboards without having a prebuilt form. You create an ad hoc query by typing member names in the Search bar or using the

Member Selector, and then you control the layout of the query in the Layout tab  of the Properties panel.

### Example Dashboard 2.0 Quick Analysis Chart in Design Mode




To create a quick analysis in your dashboard:

1. Select a cube for the query. You can do this in one of two ways:
  - Click in the workspace Search box to display a list of cubes, then select a cube.
  - Drag and drop a cube from the object palette to the dashboard workspace.

 **Note:**

With either method, the system starts with a default query; a single intersection in the cube driven from your Most Recently Used, or MRU. The default query varies based on what you've recently been looking at in the cube.



If the MRU intersection in the cube is invalid, you'll get an error. If you see an error, open another form and change the page to a valid intersection so that the MRU gets updated with a valid intersection.


2. Refine the query by specifying members for the query:
  - In the Search box, type member names to display an auto-complete list from the cube.
  - Launch the member selector  to select members, and then click **OK**.

 **Note:**


When using the Search box to find members for quick analysis and more than 25,000 members are present in a cube, the Search box only searches the first 3000 members in the dimension for the cube. If the cube contains less than 25,000 members, then the Search box will search through all members. To search a cube with more than 25,000 members, launch the member selector to make your quick analysis selections.

3. Select a chart type for the query.

Click  to select a chart type; for example, Bar .

4. In the Properties panel, click the Layout tab .
5. Drag and drop the dimensions in the Layout tab of the Properties panel to other sections of the Layout tab to change the POV, Row, and Column layout of the dashboard component.

## Videos

Your Goal	Watch This Video
Discover how to add quick analysis components to dashboards without having a prebuilt form. You learn how to create an ad hoc query in the Dashboard Designer and format the results by changing the dimension layout and applying visualizations.	 <a href="#">Creating Quick Analyses in Dashboards 2.0</a>

# Viewing Key Information with Infolets

## Related Topics

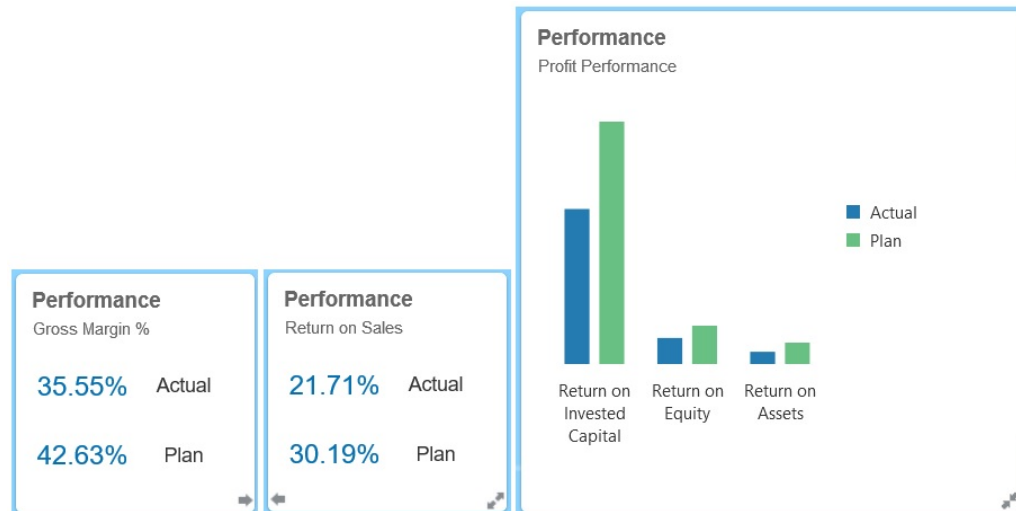
- [About Infolets](#)
- [Anatomy of an Infolet](#)
- [About Infolet Views](#)  
Your administrator can design up to three views in an infolet.
- [About the Infolet Dots](#)  
You open infolets that your administrator gives you access to by clicking the dots towards the top of the Home page.
- [Determining Infolet Content](#)
- [Using the Infolets Designer](#)
- [Creating Infolets](#)
- [Working with Infolets](#)
- [Customizing the Interface to Access Infolets](#)
- [Setting Your Default Infolet](#)  
You can set an infolet that you access most often as the default. Clicking the second dot on your Home page displays your default infolet.

## About Infolets

Infolets enable users to view and interact with high-level, essential information generated from different sources so that they can quickly assess where to direct their attention. Service Administrators create, redesign, delete, and assign permissions to infolets.

### What is an Infolet?

An infolet is a self-contained, interactive box-shaped container used to display information using text and charts. Infolets are interactive and use progressive disclosure to display high-level, aggregated, essential information for quick consumption at a glance, and then can be acted upon as needed. Infolets can be flipped and resized to display up to three charts or sets of values.



For more information about infolets, see [Anatomy of an Infolet](#).

### How Can I Use Infolets?

Use infolets to:

- Promote essential, easily consumable information
- Provide answers to your most critical questions:
  - What is new or what has changed?
  - What is the most important information that supports my work?
- Group key information by user role in a way that helps users quickly assess and prioritize their work
- Progressively display essential details and actions

Display these additional details in the various infolet views accessed by flipping or expanding an infolet. However, a single infolet view is acceptable.

- Provide a visually rich means of displaying essential or summary information

Do not use infolets to feature highly complex information, such as reporting functions, or to present detailed visuals.

See [Determining Infolet Content](#).

### What is an Infolet Page?

An infolets page is a page that contains one or more infolets. It houses a container that manages the space occupied by the infolets and rearranges them depending on the size of the browser and the size of the infolets. Each infolet you create belongs to an infolet page. The **Infolets** card on the Home page provides a list of infolet pages.



**Note:**

Not all features pictured in the preceding image are supported in this update. Oracle plans to support these features in a later update.

See [Working with Infolets](#).

## Anatomy of an Infolet

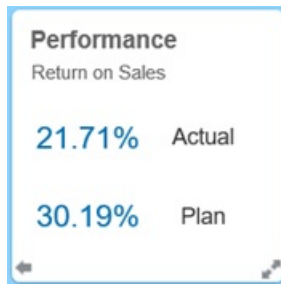
### Infolet Views

An infolet supports up to three views:

1. Front view (required)



2. Back view (optional)



3. Expanded view (optional)



The front view is required, and:

- Provides a quick look or glimpse at high-level information that has a direct effect on your work; for example, the front view can display status, counts, totals, or the most recent updates
- Promotes a glancing action that helps you identify important information that you may want to explore a bit more
- Uses all infolet sizes except 3x2 (see information about infolet sizes below)
- Returns the expanded view to its original size in the front view or back view
- Includes an Actions menu icon available only on hover and either a (optional) flip to back icon or an expand icon in the lower-right corner



**Note:**

If only one view is presented, it must be a front view.

The back view is optional, and:

- Presents analytical information (for example, a graph)

- Promotes a scanning action that helps you explore or become more familiar with the information represented on the front view
- Is sized the same as the front view
- Includes an Actions menu icon available only on hover, a flip to front icon in the lower-left corner, and an (optional) expand icon in the lower-right corner

The expanded view is optional, and:

- Presents even more detailed information about the single data point or interdependent data set presented in the front and back views; for example, the expanded view can display more details about an object or a list of recent items than what's displayed on either the front or back view
- Provides enough information to help you decide if you're ready to take action and move to a focused context on a work area page
- Transitions smoothly from other views. You see a smooth, seamless expansion, as one infolet pushes others into new positions.
- Must be sized bigger than the front or back views
- Includes an Actions menu icon available only on hover, and a collapse icon in the lower-right corner

Infolet views honor the access permissions assigned to the underlying forms and dimensions. Therefore, the same infolet may display varying views from user to user if they have different access permissions.

### Infolet Sizes

Infolets can be sized as follows:



#### Note:

1x1 refers to a box that spans one column and row width (170 pixels).

- 1x1
- 2x1
- 3x1
- 2x2
- 3x2 (expanded view only)

The size of the front and the back views are always the same. Changing the size of the front view will automatically reset the size of the back view. Because the size of the expanded view must always be greater than the size of the front/back views, if the size of the front/back view of an infolet is enlarged, the expanded view automatically resets to a larger size than the front/back view.



#### Note:

Front and back views cannot use the 3x2 size. This size is applicable for the expanded view only.

The size, title, and subtitle of a view is set by the designer in the properties panel. See [Using the Infolets Designer](#).

### Navigating Between Infolet Views

An infolet can be created with one of the following view combinations:

1. Front view only
2. Front and back views
3. Front and expanded views
4. Front, back, and expanded views

Switching from one view to another is controlled by clicking a flip icon, an expand icon, or a collapse icon available in the bottom-right or bottom-left corner of the infolet. Hovering your cursor over the bottom corners reveals a flip, expand, or collapse icon.

## About Infolet Views

Your administrator can design up to three views in an infolet.

The front page typically identifies key information. For example:

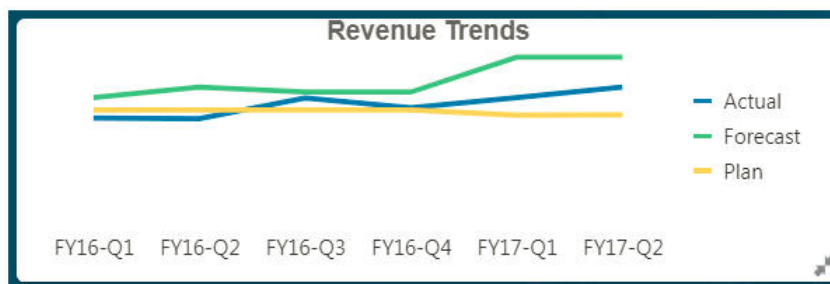


If an infolet has a back view, hover over the bottom right corner to see the flip arrow, and then click it. Back views typically present more analytical information, such as a graph. For example:



To flip to the front view again, hover over and then click the bottom left arrow. An infolet may have an expanded view to present even more detailed information. If so, hover over and then click the double arrow in the bottom right corner to see an expanded view. For example:





To return to the front or back view from an expanded view, click the double arrows in the bottom right corner.



#### Note:

Infolet views honor the access permissions that are assigned to the underlying forms and dimensions. So, your infolet views may differ from other users' views to the same infolet.

## About the Infolet Dots

You open infolets that your administrator gives you access to by clicking the dots towards the top of the Home page.

For example:



- The first dot links to the Home page.
- The second dot links to your default, or favorite, infolets page. See [Setting Your Default Infolet](#).
- The third through up to ninth dots link to other infolets that your administrator created.

## Determining Infolet Content

Consider the following general tips when determining infolet content:

- Look to existing dashboards and work area pages.  
Dashboards and work area pages are excellent starting points because they display collections of information summaries.
- Apply the 10/90/90 principle.  
Seek out the most essential, easily consumable information that addresses frequently asked questions garnered from the top 10 percent of use cases. These use cases can come from across your enterprise—from business intelligence, social, transactional, external, and so on.  
Then focus this information to reveal what 90 percent of your users would benefit from viewing 90 percent of the time. You can apply this 10/90/90 percent principle to existing dashboard content, to existing work area page content, or generally, to percolate eligible information for an infolet.

- Restate your top use cases in the form of frequently asked business questions.  
Present the corresponding infolet content in such a way as to answer these business questions; for example, how many orders are in jeopardy, listed by status?
- Look for one point or a tightly related, interdependent set of points, instead of multiple points of information.  
The process of determining content for an infolet is similar to the process that is used to yield dashboard content—but to a deeper level of analysis. Look for information within a data point or data set that is suitable to be displayed in no more than three views of information hierarchy and that answers a critical business question.
- Start with the single most important point.  
An infolet displays aggregated information about a single data aspect or point of information in relation to an event that the user needs to know about or a task that the user needs to address.  
If a dashboard contains multiple aspects about one or more objects (for example, numeric totals and currency totals), start with the single most important point and add that as a simple overview (for example, as a total using a stylized numeric value) to the front view of an infolet. Then determine the content for the back view, if needed. Finally, determine the content for the expanded view, if needed.  
An infolet should have no more than three views. If there is only a single data point or only one tightly related, interdependent data set to display on an infolet, use only the front view.

#### Related Links

[Designing Forms for Infolets](#)

[Designing Charts for Infolets](#)

## Designing Forms for Infolets

Use only forms with small data sets in infolets. Permissions that are set for forms are honored in infolets.

You can create forms that are specifically used in infolets:

- Forms used in infolets should have fewer cells than a traditional data entry form; for example, forms used in infolets should only have up to 12 cells.
- Forms used in infolets should have no more than 12 rows and columns. If a form has more than 12 rows and columns, the infolet will only display the first 12 rows and columns.
- Infolets currently don't support Page dimensions or POVs, therefore forms used in infolets should not contain Page dimensions.
- If a form that is used in infolets contains a grid with members that expand, the infolet will display all the members in the form, including the expanded members.

## Designing Charts for Infolets

Use the title and subtitle in charts to show static context.

There are six types of charts that you can use in infolets:


- **Bar:** Displays a graphical summary of multiple data values for comparison purposes. Bar charts can be plotted vertically or horizontally. Up to eight bars are recommended for bar chart infolets.
- **Column:** Displays stacked bars that represent different data sets on top of each other. The height of the resulting bar shows the combined result of the data sets.
- **Doughnut:** A circular graph which is divided into segments to compare data sets to one another. The blank center displays the sum of all data sets. Up to six segment values are recommended for doughnut chart infolets.
- **Line:** Use to visualize a trend in data over intervals of time.
- **Pie:** A circular graph which is divided into slices to compare data sets to one another. Up to six slices are recommended for pie chart infolets.
- **Tile:** Lets you select specific values from a data set to display. No more than three values are recommended for tile chart infolets.

### Note:

Tile charts can only use the 1x1 size. You cannot resize an infolet using the tile chart until the chart type is changed. If you drag and drop a tile chart to an infolet that is greater than 1x1, you will be prompted to change either the size of the infolet or the chart type.

## Using the Infolets Designer

Service Administrators use the Infolets Designer to create infolets and infolet pages. The Infolets Designer enables easy toggling between runtime and designer views. To access the Infolets Designer, launch the **Infolets** icon on the Home page and click **Create**, or click the Actions icon next to an infolets page in the listing, and then click **Edit**. Clicking the infolet name in the listing, launches the runtime version of the infolet page. You can toggle from

runtime view to designer view by clicking .

### Infolets Designer



### Infolets Toolbar

On the upper right is the Infolets Toolbar.



: Adds a new infolet to the Infolets Designer



: Hides and unhides the Properties panel

•••: Click to perform these actions:

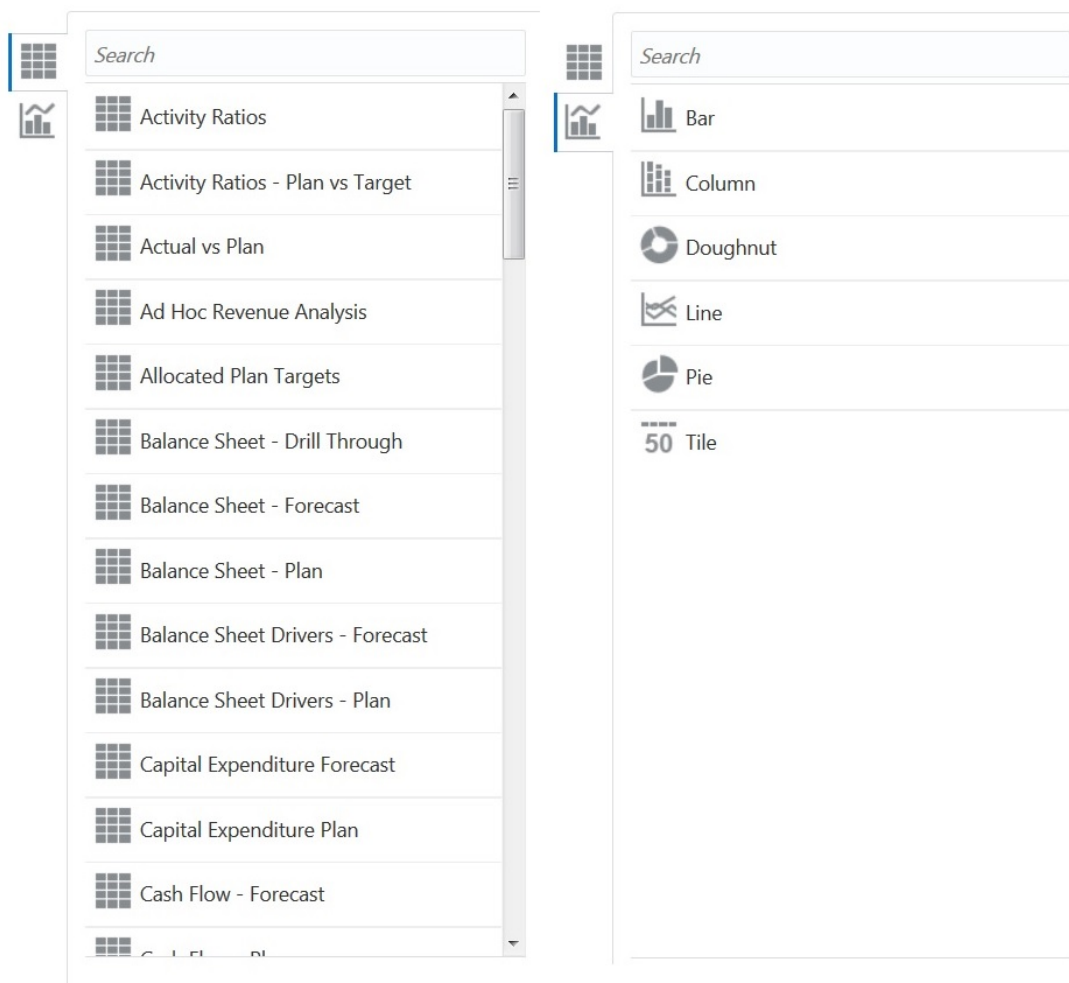
- **Reset:** Resets the Infolets Designer to a previously saved state
- **Refresh:** Refreshes the data from Essbase and updates the infolet definition from the database
- **Runtime:** Hides all Infolets Designer elements and displays the infolet as it would appear to users during runtime



: From runtime mode, displays the Infolets Designer

### Infolets Designer Palette

On the left is the Designer Palette. The Designer Palette has two tabs: Forms and Chart Types. Highlight objects in the Designer Palette and then drag and drop them onto the drop zone.



Designer Palette objects:

- Forms: Select forms to include in the infolet by scrolling through the forms or by searching for them by name. For details about forms, see [Designing Forms for Infolets](#).

 **Note:**

The access permissions set for forms are honored in infolets.

- Chart Types: Select the chart types to include in the infolet. Infolets display sample data in the charts until you associate the chart with a form as its data source. When you link a chart to a form, users can see the impact of changing data in the form on the associated charts. To associate a chart with a form, highlight a chart and drag and drop it onto the drop zone, in the Properties panel, click **Sample**, and then click **Forms** to select the data source. For details about charts, see [Designing Charts for Infolets](#).

### Infolet Menu

The infolet menu contains the infolet delete and clear actions. To view the infolet menu, hover over the upper right corner of the infolet, and then click the down arrow to display the menu options:

- **Delete:** Removes the infolet from the page
- **Clear:** Clears infolet details

### Properties Panel

The properties panel on the right side of the Infolets Designer enables you view and work with these infolet properties:

#### **Note:**

The header you specify is the same for all views of an infolet, but you can specify a different subtitle for each view; for example, the front, back, and expanded views of an infolet can each have different subtitles, but they must have the same header.

- **Header**
- **Subtitle**
- **Size:** Displays the infolet in the selected size
- **Chart Type:** Displays the infolet data as the selected chart type
- **Data:** Displays the associated data source (Sample or Form)
- **Form:** Displays the selected infolet form

Actions such as delete and clear are on the infolet menu.

By default, the front view of an infolet is displayed in the properties panel. You can see the other views by selecting them from the drop-down. If you flip or expand an infolet to view the back or expanded views, the properties for those views display in the properties panel. In addition, the properties for the corresponding chart type are also displayed in the properties panel.

## Creating Infolets

To create infolets:

1. From the Home page, click **Infolets**, and then click **Create**.
2. Click **Untitled Infolets Page**, and enter a title for the new infolets page you are creating.
3. From the designer palette on the left, choose either the **Library** tab or the **Visualizations** tab, highlight an object, and then drag and drop it onto the infolets drop zone.

Alternatively, you can click



at the top of the page to add a new infolet to the workspace.

4. If the **Properties** panel isn't already displaying, click



at the top of the page to reveal it. Customize the highlighted infolet using selections made in the **Properties** panel.

5. Click **Save**.

You can easily duplicate and modify an infolet using the **Copy As** action on the Infolet list page. From the list page, click the Actions icon next to the infolet you want to copy, and then click **Copy As**.

## Working with Infolets

Once you've created an infolets page, it is displayed in the infolets listing on the **Infolets** card.



The listing page for infolets supports folders. Folders enable you to assign permissions to all infolets within a folder rather than assigning permissions to each individual infolet. The infolets listing page uses the same folder hierarchy as dashboards and data entry forms and all artifacts and folders reside under a root folder called **Library**.


 **Note:**

Only administrators can add files (for example, dashboards, infolets, forms, reports, and so on) to the **Library** root folder.

To view and work with infolets:

1. From the Home page, click **Infolets**.
2. To work with infolets, perform an action:
  - On the listing page for infolets, you can toggle between viewing infolets by a flat view

or a tree view:  

Then you can search for infolets using **Search** . The flat view displays only the artifacts that meet the search criteria, not the folders that contain them. The tree (or hierarchical) view displays artifacts in the context of the folders that contain them.

To search on another keyword, clear the search criteria by clicking **X** in the **Search** box.

- To refresh the infolets listing, click **Refresh**.
- To create infolets, click **Create**. See [Creating Infolets](#).
- To perform the following actions on infolet pages, click the **Actions** icon next to the infolet page, and then select:
  - **Create Folder:** Creates a folder in the listing
  - **Edit:** Opens the infolet page in the Infolets Designer
  - **Rename:** Renames the infolet page
  - **Copy As:** Duplicates an infolet page
  - **Delete:** Deletes the infolet page from the listing
  - **Move To:** Moves an infolet page to another folder

- **Default or Unmark: Default** marks an infolet page as default and makes it accessible directly from the Home page by clicking the second infolet dot that is displayed beneath the global header on the Home page. Only one infolet page can be marked as default, and a "(Default)" prefix displays before the name of that infolet in the listing. **Unmark** removes the default designation from the infolet page.

 **Note:**

You can no longer mark a dashboard page as default. Only an infolet page can be marked as default.

- **Assign Permission:** Enables you to assign Read, Write, and None access permissions to infolet pages and folders for individual users or groups

## Customizing the Interface to Access Infolets

You can customize the interface to add links to infolet pages from the Home page using the Navigation Flow Designer. When you customize your interface to access infolet pages, dots will appear on the Home page beneath the global header and arrows will display to help you navigate easily between the Home Page and infolet dashboard pages. Each dot that appears on the Home page represents an infolet page and hovering over each dot displays the name of the infolet page. Clicking an infolet dot launches the infolet page associated with that dot. You can define up to seven infolet dots on the Home page. If you've created connections to other EPM Cloud environments, you can also add links to infolet pages in other EPM Cloud environments.



You will only see dots displayed on the Home page for infolet pages to which you have access. The types of infolet dots displayed are as follows:

- **Home dot:** This dot always appears first and it links to the Home page. There can only be one home dot. If you are not viewing the Home page, clicking the home dot will bring you back to the Home page.
- **User dot:** Links to an infolet page marked by an end user as the default infolet page. There can only be one user dot and it always appears after the Home dot on the user's Home page. User dots cannot be added using the Navigation Flow Designer. For more information about marking an infolet as the default, see [Working with Infolets](#).
- **Customizable dot:** Links to infolet pages created by Service Administrators. Customizable dots can be integrated into navigation flows and their visibility and the order in which they appear is determined by the navigation flow designer. There can be up to seven customizable dots and they always appear after the home and user dots.

To add infolet dots to your business interface using the Navigation Flow Designer:

1. From the Home page, select **Tools**, and then **Navigation Flows**.
2. Select an inactive navigation flow in the listing, and then click the **Infolets** tab on the Navigation Flow Designer.



3. Click .
4. In **Manage Infolet**, name the infolet dot, set visibility, and then click  to select an infolet in the Artifact Library.

 **Note:**

You can select an infolet from another EPM Cloud environment if you've created connections to other environments. First select the environment under **My Connections**, and then navigate to the infolet in that environment.

5. Click **Save and Close**.

 **Note:**

Infolets can also be associated with a tab or a card in a navigation flow. While adding or updating a tab or a card, select an infolet in the Artifact Library.

To view design time changes to the navigation flow, activate the navigation flow, and then from the Home page, click the down arrow next to the user name (upper right corner of the screen) and click **Reload Navigation Flow**.

To learn more about designing navigation flows, see "Designing Custom Navigation Flows" in your EPM Cloud Administering guide.

To learn more about connecting EPM Cloud environments, see "Connecting Environments in EPM Cloud" in your EPM Cloud Administering guide.

## Setting Your Default Infolet

You can set an infolet that you access most often as the default. Clicking the second dot on your Home page displays your default infolet.

To set your default infolet:



1. On the Home page, click **Infolets**.
2. From the **Actions** menu for the infolet you want to be the default, click **Default**.  
To undo the **Default** setting, click **Unmark**.

Only an infolet page can be marked as default. You can no longer mark a dashboard page as default.




# Using Ad Hoc for Data Entry and Analysis

Using ad hoc grids, you can quickly drill into data slices that are important to you.

Examples of how ad hoc grids can help you focus your attention:

- Change drivers for a set of products that you work with due to changes in actuals.
- Quickly review profit margins in your regions.
- Change the set of accounts in an ad hoc grid that someone else set up.
- Drill into a variance number to understand the source of the variance.
- Analyze a specific Allocation or Custom Calculation rule's data elements while working with the rule in the Rule Designer
- Analyze a specific rule's results in Rule Balancing reports
- Use an ad hoc grid in Oracle Smart View for Office that you set up in your business process. To learn more, see *Oracle Smart View for Office User's Guide*.

## Videos

Your Goal	Watch This Video
Learn how to perform EPM grid operations such as entering line item details, comments, attachments, sorting and filtering grid members, adjusting grid data, and using shortcut keys. You can use EPM grids, or ad hoc grids, to personalize focused data slices that you frequently use for analysis.	 <a href="#">Performing New EPM Grid Operations</a>
Learn how to perform ad hoc operations such as selecting members, moving dimensions, and saving grid data and definition. You can use ad hoc grids to personalize focused data slices that you frequently use for analysis.	 <a href="#">Designing Ad hoc Grids in EPM Cloud Platform</a>
Learn how to create ad hoc grids using forms, cubes, and dashboards.	 <a href="#">Creating Ad Hoc Grids in EPM Cloud Platform</a>



## Get Started Performing Ad Hoc

In ad hoc grids, you can enter data and then analyze and change data in many ways by slicing and dicing the data from various angles.

**Table 18-1 Actions You Can Take with Ad Hoc Grids**

Your Goal	Learn More
Get started with ad hoc	See <a href="#">Creating an Ad Hoc Grid</a> .
Design the grid for ad hoc	See <a href="#">Designing Ad Hoc Grids</a> .

**Table 18-1 (Cont.) Actions You Can Take with Ad Hoc Grids**

Your Goal	Learn More
Look at the data from various angles (slice and dice)	Use <b>Pivot</b> to refine your analysis by moving dimensions to the POV, column, or row. See <a href="#">Pivoting Dimensions</a> .
Quickly move around an ad hoc grid and enter data using shortcut keys	See <a href="#">Ad Hoc Grid Keyboard Shortcuts and Quick Data Entry Commands</a> .
Further focus the data	<ul style="list-style-type: none"> <li>Use <b>Keep Selected</b> and <b>Remove Selected</b> to customize your grid.</li> <li>Use <b>Zoom In</b> to view the next level of detail in a dimension or <b>Zoom Out</b> to a summary level.</li> </ul>
Work with different data	Select different members using the versatile <b>Member Selector</b> . For example, you can select members based on their attributes, children, level, or branch. See <a href="#">Opening the Member Selector in Ad Hoc Grids</a> .
View source details associated with the underlying data	Drill through to Data Integration. See Using Drilling Through to Source in <i>Administering Data Integration for Oracle Enterprise Performance Management Cloud</i> .
Change a value by a specific amount	Use <b>Adjust</b> . See <a href="#">Adjusting Values</a> .
Build logic into a data value	Use <b>Line Item Details</b> . See <a href="#">About Using Line Item Details</a> .
Explain assumptions behind data	Add a comment or attach an external file. See <a href="#">Adding Comments and Attachments</a> .
Control the display and behavior of ad hoc grids	<p>Click</p>  <p>, then</p>  <p>tab to manage the display and behavior of ad hoc grids. See <a href="#">Setting Properties for Ad Hoc Grids</a>.</p>
Perform free form ad hoc	Type member names into a blank grid and retrieve values. See <a href="#">Using Free-Form Ad Hoc</a> .
Run business rules after performing ad hoc data changes	Click <b>Rules</b> to search for and launch business rules. See <a href="#">Applying Rules to Ad Hoc Grids</a> .
Switch to Oracle Smart View for Office	Click <b>Actions</b> , and then <b>Open in Smart View</b> . See Opening Forms and Ad Hoc Grids from Web Applications in <i>Smart View for Office User's Guide 23.100</i> .

## Creating an Ad Hoc Grid

You can create an ad hoc grid to slice and dice data in several ways.

### Note:

To be able to create an ad hoc grid, your administrator must give you the role Ad Hoc - Create. If you don't have this role, you can work only with existing ad hoc grids.

You can create ad hoc grids from stand-alone forms or from forms within dashboards. If Redwood Experience is enabled, ad hoc opened from a dashboard or a form opens in a dynamic tab.

To create an ad hoc grid from scratch:

1. On the Home page, click **Data**.
2. On the **Data Entry** page, click **Create**, then **Ad Hoc Grid**, and then in **Select Cube**, select a cube for the grid.

By default, Account and Entity are on the row, and Years and Period are on the column. The other dimensions are on the POV (Point of View) above the grid. Select the members you want to work with in the ad hoc grid. See [Opening the Member Selector in Ad Hoc Grids](#).

 **Note:**

If its cube is aggregate storage and has no Year dimension, then only the Period dimension is on the column.

3. Alternatively, you can perform ad hoc analysis on existing forms with these options:
  - To create an ad hoc grid from a stand-alone form, open the form, click **Actions**, and then **Analyze**. Ad hoc functionality is now available, and your initial grid is based on the form's layout.
  - For forms in Dashboard 1.0 dashboards, maximize the dashboard form so that it fills the workspace, click **Actions**, and then **Analyze**, or if Redwood Experience is enabled, you can right-click the cell you want to analyze, and then select **Analyze on Cell**.
  - For forms in Dashboard 2.0 dashboards, right-click the cell you want to analyze, and then select **Analyze on Cell**.
4. Save the ad hoc grid by selecting **Save Grid Definition**. See [Submitting Ad Hoc Data and Saving the Grid Definition](#).

You can now use ad hoc functionality to focus and analyze data. See [Get Started Performing Ad Hoc](#).

 **Tip:**

To see high-level information about the grid, click **Property Panel**



. On the **General** tab, you can set how to display member names and select an alias table. See [Setting Properties for Ad Hoc Grids](#).

## Submitting Ad Hoc Data and Saving the Grid Definition

You can update data in the cube by submitting changed data from ad hoc grids.

 **Note:**

Formatting isn't supported in Web ad hoc and formatting within saved ad hoc grids from Oracle Smart View for Office native mode may not be persisted if opened in Web ad hoc.

Submit data options include:

- **Submit Data Only:** Submits the data for the cells you've explicitly modified (made dirty) but not the grid design.
- **Submit Data Without Refresh:** Submits all data cells that you have explicitly modified (made dirty) and those that were not modified. All data cells are marked dirty and submitted. After the submit operation is completed, the entire grid will be refreshed.
- **Submit Data Range:** Submits only the cell data from selected cells. If there are dirty cells on the grid outside the range of the selected cells, the modified values aren't submitted and those cells will revert back to the value that was last stored.

To save the ad hoc grid, click **Save Grid Definition**.

## Performing Calculations Without Having to Submit Your Changes (Calc on the Fly)

Use calc on the fly to change data values and see calculated changes instantly without submitting the updated values.

When working with Forms 2.0, or during ad hoc analysis, you can perform calc on the fly without having to submit changes to the database and refresh. This capability saves you time and enables you to do multiple changes to the grid at once.

For Forms 2.0, this option is available if your administrator enabled this feature for the form. When this feature is enabled, in a 2.0 version of a form, when you hover over a cell with a member formula attached, you see the member formula associated with the cell and you can perform calc on the fly.

For ad hoc analysis, your administrator might have enabled this feature for you. Or, you can set a display preference for calc on the fly by selecting **Yes** for **Enable User Formulas in Ad Hoc** on the **Display** tab in **User Preferences**. When this setting is enabled, in an ad hoc grid, when you hover over a cell with a member formula attached, you see the member formula associated with the cell and you can perform calc on the fly.

To perform calc on the fly:

1. Open a 2.0 version of a form or an ad hoc grid, and hover over cells to see members with formulas attached, for both member formulas and consolidation operators.  
In this example, you can see the formula for **Sales** for **Jan**.

	Trips	Trips	Trips	Trips
	Jan	Feb	Mar	Q1
International Sales	20	20	20	60
Sales East	30	30	30	90
Sales NorthEast	25	25	25	75
Sales Mid-Atlantic	20	20	20	60
Sales SouthEast	15	15	15	45
Sales South	12	12	12	36
Sales Central	10	10	10	30
Sales West	12	12	12	36
Sales	144	144	144	432

Row Sales Column BaseData Trips Jan member( 403 ):  
 410 +420 +421 +422 +423 +430 +440 +450 +66  
 grid math:  
 = EssSum( essMissing(1/0) , B4, B5, B6, B7, B8, B9, B10, B11 )

There must be enter-able cells (level zero members) in the form or ad hoc grid in order for formulas to appear.

2. Perform calculations as needed, and then move the cursor from the cell:

- Modify values that contribute to a calculated cell. The calculated cell value is updated.
- Modify a calculated value. The cells that are on the form or ad hoc grid that contribute to the calculated cell are updated.  
 For formula spreading to work correctly, all source cells for the calculated value must be visible on the form or ad hoc grid.

A color change indicates a modified cell. Cells refresh immediately to display the newly calculated values, without submitting the changes to the database.

In this example of modifying values that contribute to a calculated cell, modify the value of **Sales West** for **Jan**:

	Trips	Trips	Trips	Trips
	Jan	Feb	Mar	Q1
International Sales	20	20	20	60
Sales East	30	30	30	90
Sales NorthEast	25	25	25	75
Sales Mid-Atlantic	20	20	20	60
Sales SouthEast	15	15	15	45
Sales South	12	12	12	36
Sales Central	10	10	10	30
Sales West	15	12	12	36
Sales	144	144	144	432

When you press Tab, calc on the fly calculates updated values for **Sales** for **Jan**, **Q1** for **Sales West**, and **Q1** for **Sales**. Note the color change for the newly calculated values.

	Trips	Trips	Trips	Trips
	Jan	Feb	Mar	Q1
International Sales	20	20	20	60
Sales East	30	30	30	90
Sales NorthEast	25	25	25	75
Sales Mid-Atlantic	20	20	20	60
Sales SouthEast	15	15	15	45
Sales South	12	12	12	36
Sales Central	10	10	10	30
Sales West	15	12	12	39
Sales	147	144	144	435

In this example of modifying a calculated value, modify the calculated value **Sales** for **Feb**:

	Trips	Trips	Trips	Trips
	Jan	Feb	Mar	Q1
International Sales	20	20	20	60
Sales East	30	30	30	90
Sales NorthEast	25	25	25	75
Sales Mid-Atlantic	20	20	20	60
Sales SouthEast	15	15	15	45
Sales South	12	12	12	36
Sales Central	10	10	10	30
Sales West	12	12	12	36
Sales	144	288	144	432

When you press Tab, the values that contribute to the calculated cell are updated. Note the color change for the newly calculated values.

	Trips	Trips	Trips	Trips
	Jan	Feb	Mar	Q1
International Sales	20	40	20	80
Sales East	30	60	30	120
Sales NorthEast	25	50	25	100
Sales Mid-Atlantic	20	40	20	80
Sales SouthEast	15	30	15	60
Sales South	12	24	12	48
Sales Central	10	20	10	40
Sales West	12	24	12	48
Sales	144	288	144	576

- When you've completed all of your modifications and are satisfied with the calculations, you can submit the modified values to the server, or you can discard your changes without submitting them.

You can also perform calc on the fly in Oracle Smart View for Office in 2.0 versions of forms or in ad hoc grids. See *Performing Calculations Without Having to Submit Your Changes* in *Working with Oracle Smart View for Office*.


Review the supported formula functions and operators. See *Supported Functions and Operators for Calc on the Fly* in *Working with Oracle Smart View for Office*.

Not all formula functions support calc on the fly. See *Unsupported Functions and Formulas for Calc on the Fly* in *Working with Oracle Smart View for Office*.

For additional considerations when performing calc on the fly, see *Guidelines and Considerations* in *Working with Oracle Smart View for Office*.

**Tutorials**

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
In this tutorial, you learn how to perform calc on the fly during ad hoc analysis using member formulas. You can work with calc on the fly either in the web or with Smart View.	 <a href="#">Performing Calc on the Fly in Cloud EPM</a>


## Accessing an Ad Hoc Grid

Open an ad hoc grid to personalize your view of and analyze data in a form.

You can access ad hoc from a stand-alone form or from a form within a dashboard. If Redwood Experience is enabled, ad hoc opened from a dashboard or a form opens in a dynamic tab.

To access a saved ad hoc grid:

1. On the Home page, click **Data**.

Ad hoc grids on the **Data Entry** listing page display the ad hoc grid icon .

2. Click the name of the ad hoc grid.

To perform ad hoc on a stand-alone form, open the form, click **Actions**, and then click **Analyze**.

To perform ad hoc on a form within a dashboard:

- For forms in Dashboard 1.0 dashboards, maximize the dashboard form so that it fills the workspace, click **Actions**, and then click **Analyze**, or if Redwood Experience is enabled, you can right-click the cell you want to analyze, and then select **Analyze on Cell** to open ad hoc in a dynamic tab.
- For forms in Dashboard 2.0 dashboards, right-click the cell you want to analyze, and then select **Analyze on Cell** to open ad hoc in a dynamic tab.

## Designing Ad Hoc Grids

Customize your ad hoc grids so that you can quickly access the relevant data.

Easy-to-use features enable you to design and refine your focused data slices.

**Table 18-2 Customize Your Ad Hoc Grid with These Features**

Your Goal	See this Topic
Refining the data to work with	<a href="#">Opening the Member Selector in Ad Hoc Grids</a>
Moving dimensions from one axis to another	<a href="#">Pivoting Dimensions</a>
Setting options such as how member hierarchy levels are indented	<a href="#">Setting Properties for Ad Hoc Grids</a>
Defining logic to calculate cell data	<a href="#">About Using Line Item Details</a>

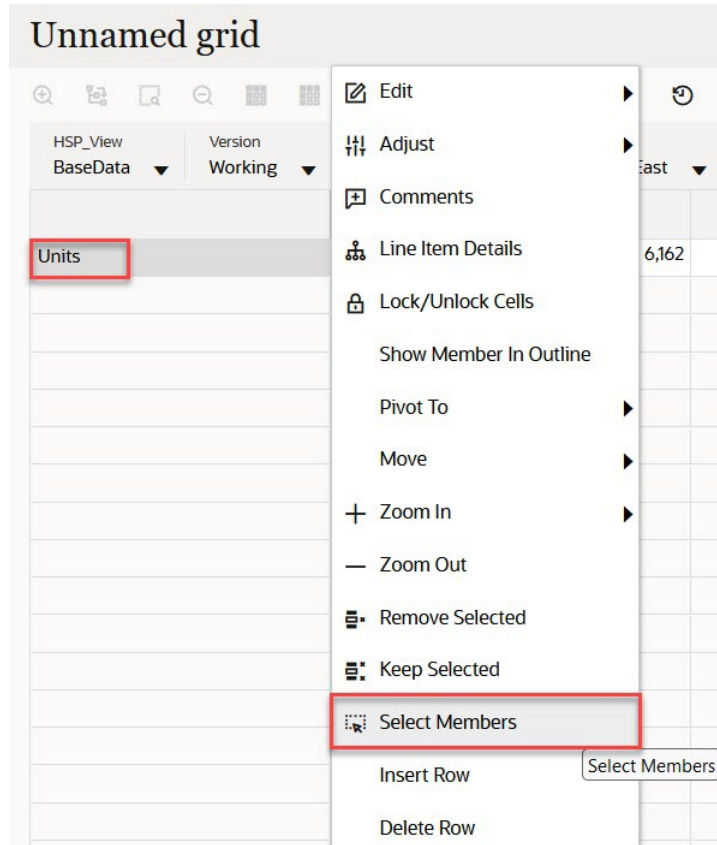
## Opening the Member Selector in Ad Hoc Grids

As you analyze data, you may want to manipulate the data you're working with. Selecting members for the POV, rows, and columns enables you to quickly set up and change the data you're analyzing. To select members in ad hoc grids, use the member selector.

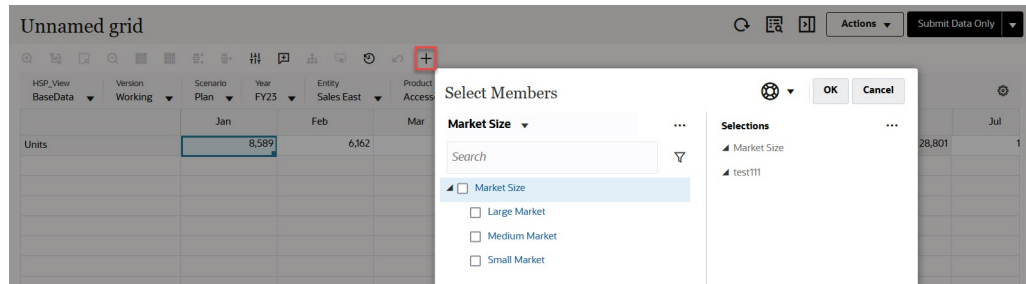
The member selector enables you to set the user variables, substitution variables, and attributes in the ad hoc grid definition. To open the member selector from an ad hoc grid:


Right-click a member, and then select **Select Members**.





If attributes are available, click **Insert Attributes** icon on the toolbar.




You can also click  (POV Settings) and then select **Member Selector**.

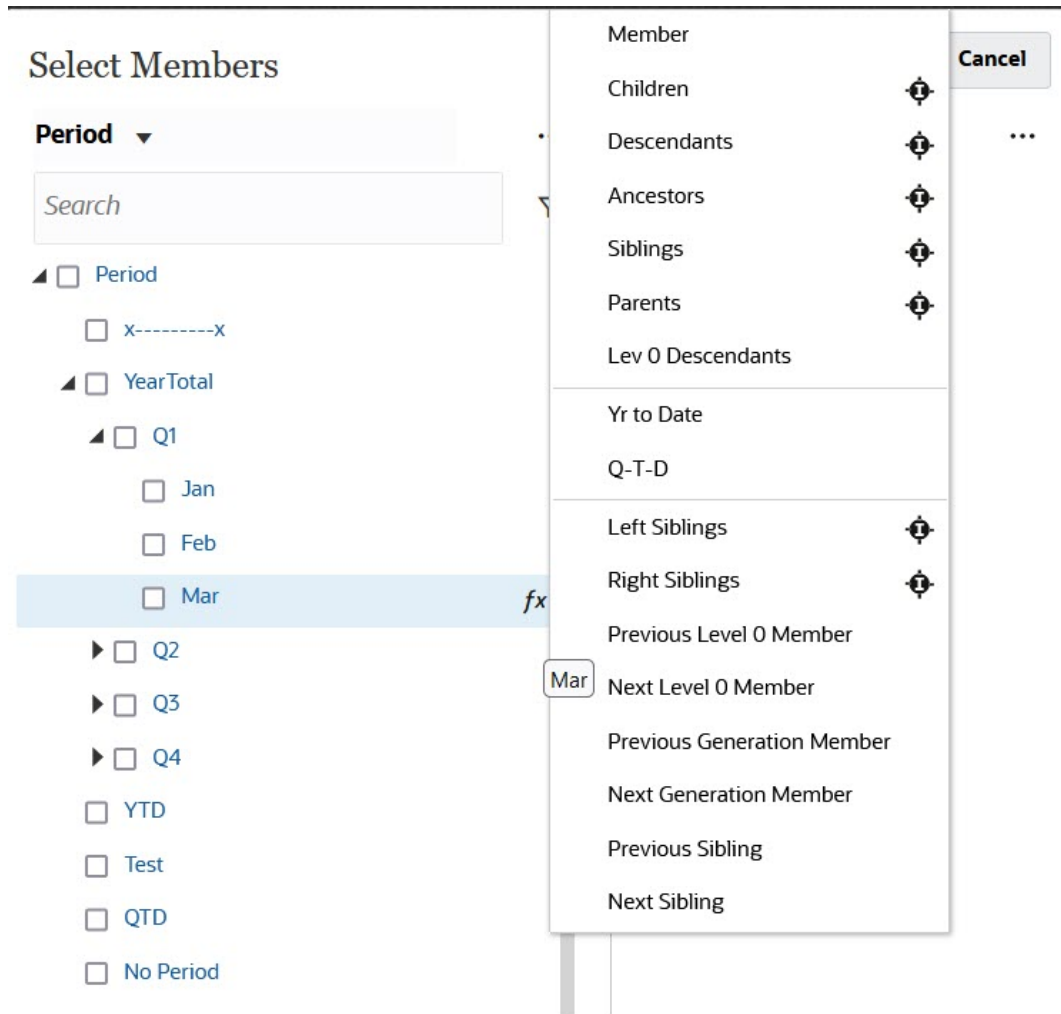
For more information about using the member selector, see [Using the Member Selector](#).

## Selecting Period-to-Date Members

If the administrator set up Dynamic Time Series members for the Period dimension, you can select members that show period-to-date data. For example, to show data for year-to-date expenses, you could select a Dynamic Time Series member that includes data for January through August.

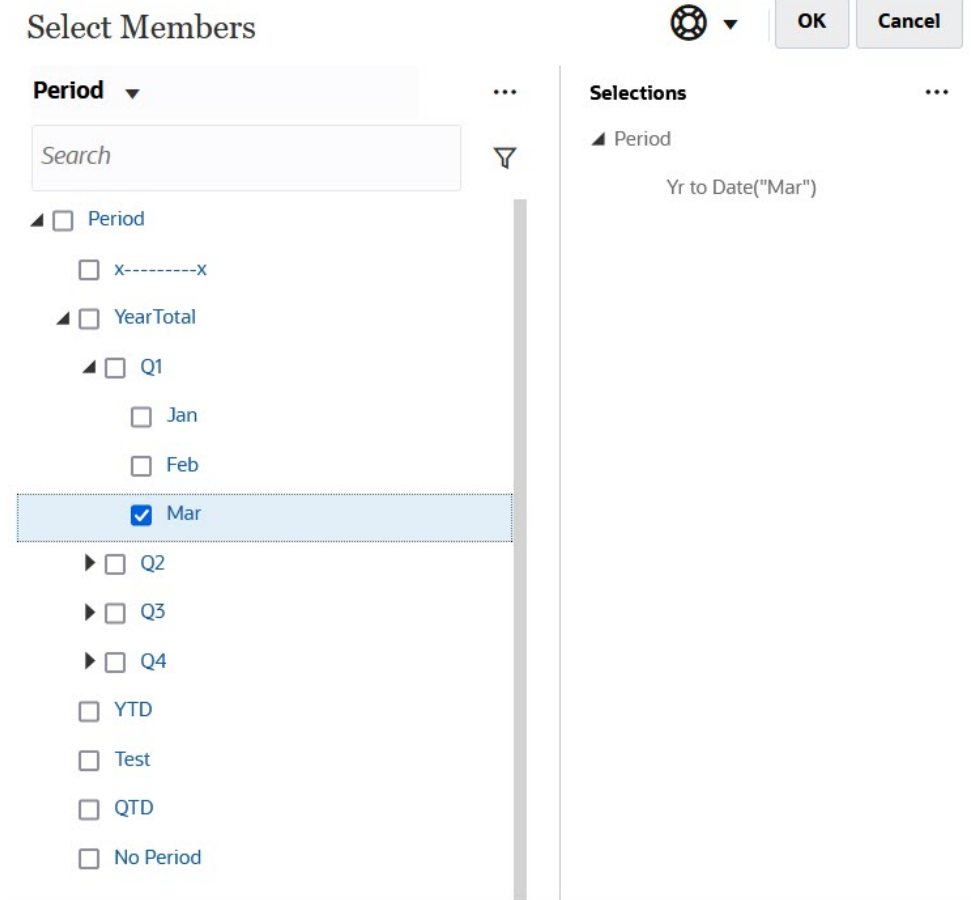
To select a Dynamic Time Series member:

1. Right-click the Period dimension on the ad hoc grid, and select **Member Selector**.
2. Click  next to a member to display available time series members; for example, Q-T-D.



The screenshot shows the 'Select Members' dialog box. On the left, the 'Period' dimension is expanded, and 'Mar' is selected. A search box is present above the list. On the right, a list of time series members is displayed, including 'Yr to Date', 'Q-T-D', 'Left Siblings', 'Right Siblings', 'Previous Level 0 Member', 'Next Level 0 Member', 'Previous Generation Member', 'Next Generation Member', 'Previous Sibling', and 'Next Sibling'. The 'fx' icon is visible next to 'Mar' in the list. A 'Cancel' button is located at the top right of the dialog.

3. Select a time series member from the list. In this example, with **March** selected, if you select **Yr to Date**, then **Yr to Date("Mar")** is added to the **Selections** pane.

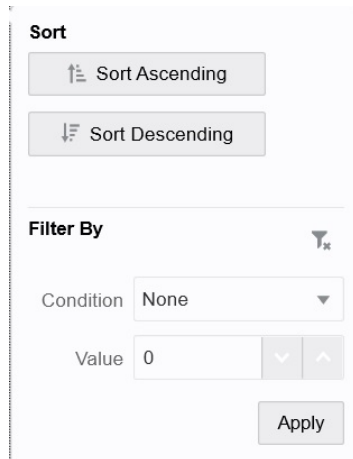


4. Click **OK**.

For more information about the member selector, see [Using the Member Selector](#).

## Filtering Column Members

Robust filter options enable you to control the display of column members in the ad hoc grid. Hover over the column name, click the funnel to the right of the column name, and then select an action.



The screenshot shows a control panel with two sections. The top section, titled "Sort", contains two buttons: "Sort Ascending" with an upward-pointing arrow icon and "Sort Descending" with a downward-pointing arrow icon. The bottom section, titled "Filter By", features a funnel icon and a "Condition" dropdown menu currently set to "None". Below this is a "Value" input field containing the number "0", with small up and down arrow buttons to its right. An "Apply" button is located at the bottom right of the "Filter By" section.

**Sort** options enable you to sort by ascending or descending order and ignore the member hierarchy. **Filter By** options enable you to filter by **Condition** (such as Greater Than or Less Than) or by a **Value**. To remove sort and filter options, click



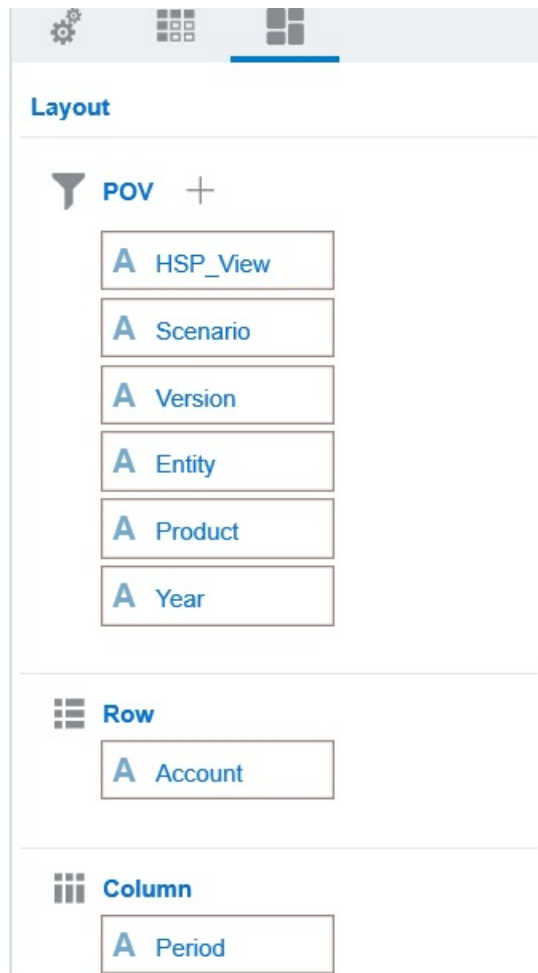
## Pivoting Dimensions

Pivoting a dimension changes the orientation of data on the grid so you can view data from another angle, or slice and dice information.

You pivot a dimension by dragging it from one axis to another.

For example, you can:

- Drag a dimension from a row to a column or from a column to a row.
- Drag a dimension between the POV and a row or column.
- Reorder members by dragging them on the same axis.
- Drag dimensions to and from the **Layout** tab on the **Property Panel**:



A single dimension must exist on the row and column axis. You can't pivot the last remaining dimension in a row or column.

## About Shared Members

A shared member shares storage space with another member of the same name, preventing duplicate calculation of members that occur multiple times in a cube. Shared members are available for Entity, Account, and user-defined custom dimensions.

Sharing members allow alternate rollup structures within an application. A base member must exist before an administrator can create a shared member. Administrators can create multiple shared members for the base member. A base member must display before its shared members in position from top to bottom.

You can drill on shared members in an ad hoc grid, but an administrator must first enable a system setting called **Allow drill down on shared members in ad hoc**.

Shared members are displayed similarly to base members in the dimension hierarchy for member selection in Oracle Smart View for Office.

## Zooming in on Shared Members

Shared members are supported in ad hoc grids and the system recognizes whether a member is a base member or a shared member. If your administrator enables the application setting, **Allow drill down on shared members in ad hoc**, then zooming in on shared members is supported. In this case, zooming in on shared members is effectively the same as zooming in on the corresponding base members. You can zoom in on shared members one level at a time.

If your administrator enables the application setting, **Drill to All Levels in Base**, you can zoom in beyond just the shared members into all levels or only the bottom levels within the base hierarchy using the Zoom In options, **All Levels** and **Bottom Level**.

### Example Shared Member Zoom In

This example describes the results you will see when **Allow drill down on shared members in ad hoc** is set to **Yes** and **Drill to All Levels in Base** is enabled.

[Figure 1](#) shows three hierarchies under the Entity dimension. In the `entity_10` hierarchy, all members descend from `entity_10`. In the `entity_12` hierarchy, all members descend from `entity_12`. In the `entity_14` hierarchy, there are descendent members of `entity_14` as well as the shared members, `entity_10` and `entity_12`. The shared members include their descendents.

**Figure 18-1 Entity Dimension Showing Its Hierarchies**

Name
Entity
entity_10
entity_10.1
entity_10.2
entity_10.3
entity_10.4
entity_12
entity_12.1
entity_12.1.1
entity_12.1.2
entity_12.1.3
entity_12.2
entity_12.3
entity_14
entity_14.1
entity_14.1.1
entity_14.1.2
entity_10(Shared)
entity_12(Shared)

[Figure 2](#) shows the difference between zooming in on `entity_14`:

- Using the Zoom In to All Levels command
- Using the Zoom In to Bottom Levels command

In both cases, in Oracle Smart View for Office, **Member Options, Ancestor Position** is set to **Top**.

**Figure 18-2 Results of Zooming in on entity\_14, with Ancestor Position=Top**

Zoom In “entity\_14” to **All Levels**

```
entity_14
  entity_14.1
    entity_14.1.1
    entity_14.1.2
  entity_10 (shared member)
  entity_10.1
  entity_10.2
  entity_10.3
  entity_10.4
  entity_12 (shared member)
  entity_12.1
    entity_12.1.1
    entity_12.1.2
    entity_12.1.3
  entity_12.2
  entity_12.3
```

Zoom In “entity\_14” to **Bottom Levels**

```
entity_14
  entity_14.1.1
  entity_14.1.2
  entity_10 (shared member)
  entity_10.1
  entity_10.2
  entity_10.3
  entity_10.4
  entity_12 (shared member)
  entity_12.1.1
  entity_12.1.2
  entity_12.1.3
  entity_12.2
  entity_12.3
```

#### Note:

In a Native mode application, you can achieve the results shown in the Zoom In to All Levels example, if **Allow drill down on shared members in ad hoc** set to **Yes**, and **Drill to All Levels in Base** disabled; however, you will need to zoom in one level at a time on the shared members till you reach the bottom level of each hierarchy. You will not be able to zoom in directly to the bottom level of the shared members.

## Setting Properties for Ad Hoc Grids

You can control the display and behavior of ad hoc grids by setting your preferences using the **Property Panel**.

### Setting General Ad Hoc Properties

To set general ad hoc options:

1. In an ad hoc grid, click the **Property Panel** icon



, and then click **General**.


2. Under **Grid**, set these options:

- **Name**
- **Description**

- **Cube**
- For **Display Member Label**, choose from the following options:
  - **Distinct Member Name Only**
  - **Member Name Or Alias**
- **Alias Table**

### Setting Ad Hoc User Options

To set ad hoc user options:

1. In an ad hoc grid, click the **Property Panel** icon , and then click **Adhoc Options**.
2. Under **Grid**, set how members are displayed:
  - **Member Inclusion:**
    - **Include Selection:** Select **Yes** to display both the selected member and the members retrieved as a result of the operation. For example, zooming in on the selected member Qtr1 displays data for Qtr1, Jan, Feb, and Mar.
    - **Within Selected Group:** Select **Yes** to perform an operation such as Zoom only on the selected group of members, leaving unselected cells as is. This setting is meaningful only when there are two or more dimensions down the grid as rows or across the grid as columns. This option pertains to **Zoom**, **Keep Only**, and **Remove Only**.
  - **Zoom in:** Select the level at which to zoom in:
    - **Next Level:** Get data for the children of the selected members.
    - **All Levels:** Get data for all descendants of the selected members.
    - **Bottom Level :** Get data for the lowest level of members in a dimension.
  - **Ancestor Position:** Set how to display ancestors in the hierarchy:
    - **Top:** Display member hierarchies from highest to lowest level.
    - **Bottom:** Display member hierarchies from lowest to highest level.
  - **Indentation:** Set how member hierarchy levels are indented:
    - **None:** Do not indent members.
    - **Subitems:** Indent descendants. Ancestors are left-justified in the column.
    - **Totals:** Indent ancestors. Descendants are left-justified in the column.
  - **Navigate without refreshing data:** Selecting **No** improves performance as you navigate around the grid, for example pivoting and zooming. Just click **Refresh** when you want to update the data. (If you select **Yes** for this option, data is refreshed as you work in ad hoc.)
3. Under **Suppression**, to simplify your view of the data, select options to suppress elements of the grid. For example, you can hide rows or columns with zero values.
  - **Zero Values:**
    - **None:** Select to display rows and columns that contain only zeros.
    - **Row:** Select to hide rows containing only zeros.



- **Column:** Select to hide columns containing only zeros.
- **Row and Column:** Select to hide rows and columns containing only zeros.
- **Repeated Members:** Select **Yes** to hide rows that contain repeated member names, regardless of the grid orientation.
- **Missing Data:** Select to hide rows or columns with zeros or that have no data:
  - **None:** Display rows and columns with zeros or that have no data.
  - **Row:** Hide rows with zeros or that have no data.
  - **Column:** Hide columns with zeros or that have no data.
  - **Row & Column:** Hide rows and columns with zeros or that have no data.
- **Missing Blocks on Rows:** Select **Yes** to hide blocks of cells in rows that have no data.
- **No Access:** Select to hide rows or columns that you don't have access to:
  - **None:** Display rows and columns that you don't have access to.
  - **Row:** Hide rows that you don't have access to.
  - **Column:** Hide columns that you don't have access to.
  - **Row & Column:** Hide rows and columns that you don't have access to.

 **Note:**

When trying to open an ad hoc grid, if you see the "Ad hoc grid cannot be opened as there are no valid rows of data" error, clear the **Suppression** options.

4. Under **Precision Values**, set the minimum and maximum number of decimal positions to display in a cell for the **Currency** values, **Non-currency** values, and **Percentage** values. For example, if the cell value is 100, and you select the **Minimum** precision "2", the value displays as "100.00". If you select a Maximum precision of "3 " and the cell value is 100.12345, the value displays as "100.123". Select **Use Currency member precision** to apply the precision setting of the **Currency** member.
5. Under **Replacement**, set labels to display for cells that are missing data, cells that you don't have access permission to view, or cells that have invalid data:
  - **No Data:** Enter the text that you want displayed for cells that have #Missing or #NoData as their value.
  - **No Access:** Enter the text that you want displayed for cells that you don't have access to.
  - **Submit Zeros:** Select **Yes** if you specified #NumericZero as the text for the **No Data** or **No Access** replacement option and you want to submit zeros to the application.
6. Click **Refresh**.

## Setting Layout Options

You can use the **Layout** tab to remove attributes that are used within the ad hoc grid. This is the only place where attributes can be removed from the grid.

To set layout options for ad hoc grids:

1. In an ad hoc grid, click the **Property Panel** icon



, and then **Layout**.

2. See [Pivoting Dimensions](#).

# Ad Hoc Grid Keyboard Shortcuts and Quick Data Entry Commands

## Keyboard Shortcuts

You can quickly move around an ad hoc grid with these shortcut keys:

Key or Key Combination	Result
Tab	Moves to the next cell in the row. When focus is on the last cell of a row, Tab moves to the first cell of the next row.
Shift+Tab	Moves to the previous cell in the row. When focus is on the first cell of a row, Shift+Tab moves to the last cell of the previous row.
Up Arrow, Down Arrow	Moves up or down within the same column to the previous or next row.
Right Arrow, Left Arrow	Moves to the next cell or previous cell in the row.
Ctrl+Home	Moves to the first cell in the grid.
Shift+End	Moves to the last cell of the first row of the grid.
Ctrl+End	Moves to the last cell in the grid.
Ctrl+Right Arrow	Moves to the last cell in the current row.
Ctrl+Left Arrow	Moves to the first cell in the current row.
Shift+Space	Selects the row.
Ctrl+Space	Selects the column.
Ctrl+Up Arrow	Moves to the top row of the column.
Ctrl+Down Arrow	Moves to the bottom row of the column.
Ctrl+Shift+Up Arrow	Selects the cells in the column starting from the current cell to the top row of the column.
Ctrl+Shift+Down Arrow	Selects the cells in the column starting from the current cell to the bottom row of the column.
Shift+Left Arrow	Selects a cell to the left of the current cell in the row each time Left Arrow is pressed until it reaches the start of the row.
Shift+Right Arrow	Selects a cell to the right of the current cell in the row each time Right Arrow is pressed until it reaches the end of the row.
Shift+Up Arrow	Selects a cell above the current cell in the column each time Up Arrow is pressed until it reaches the top of the column.
Shift+Down Arrow	Selects a cell below the current cell in the column each time Down Arrow is pressed until it reaches the bottom of the column.
Shift+Click	Selects multiple cells by holding the Shift key and then using the mouse to select cells from different columns or rows in the grid.

### Commands for Quickly Entering Data


You can use these shortcuts to quickly enter data in ad hoc grids. Enter the keys or symbols, and then press Enter or Tab.

Keys or Symbol	Result	Example
K	Enters the value in thousands.	Enter 5K for 5,000.
M	Enters the value in millions.	Enter 5M for 5,000,000.
Add or +	Adds a number to the cell value.	If the cell value is 100, entering Add10 after 100 results in 110.
/	Divides the cell value by a number.	If the cell value is 100, entering /2 after 100 results in 50.
Sub or ~	Subtracts a number from the cell value.	If the cell value is 100, entering Sub10 after 100 results in 90.
Percent or per	Multiplies the cell value by the percentage you enter.	If the cell value is 100, entering per10 after 100 results in 10% of the current cell value, or 10.
Increase or inc	Increases the cell value by the percentage you enter.	If the cell value is 200, entering inc10 after 200 increases the cell value by 10% of 200 (20), to 220.
Decrease or dec	Decreases the cell value by the percentage you enter.	If the cell value is 200, entering dec10 after 200 decreases the cell value by 10% of 200 (20), to 180.
Power or pow	Changes the cell value to the number, added as an exponent.	If the cell value is 100, entering pow2 after 100 multiplies the cell value by an exponent of 2, to 10,000.
gr	Grows a cell by a percentage.	If the cell value is 200, entering gr50 after 200 increases the cell value by 100, to 300.

## Applying Rules to Ad Hoc Grids

After you submit new or changed data, you can run business rules that will calculate the data.

To apply a rule:

1. Open an ad hoc grid.
2. Click **Rules** .
3. If presented with a runtime prompt, enter or select the required information, and then click **Launch**.

If the rule runs successfully, a message displays and data is updated.

## Adding Comments and Attachments

To explain data or provide background, you can add comments and attachments to a cell.

Valid attachment file types are:

- Image types permitted: .jpg, .gif, .png, .7z
- Non-image file types permitted: .csv, .xls, .xlsx, .txt, .zip, .jlf, .doc, .docx, .ppt, .pptx, .rtf, .pdf, .gdoc, .gsheet, .gslides, .msg

To add a comment or attachment:

1. Click in a cell, then select



2. Enter your comment. To attach a file, click



and browse to the file.

3. Click **Post**.

A blue triangle in the upper right of the cell indicates it has a comment or attachment. To read a comment or view an attachment, perform Step 1.



#### Note:

Forms 2.0 does not support adding comments or attachments to formula cells.

## Adjusting Values

You can quickly adjust cell values in an ad hoc grid.

To adjust a cell's value:

1. Click in the cell.
2. Click **Adjust**



3. In **Adjust By**, enter a positive, negative, or percentage value, and then click **OK**.

## About Using Line Item Details

To build logic into how a cell value is calculated, you can use the application's built-in calculator, called Line Item Details.



#### Note:

Line Item Details is replacing Supporting Detail and they are functionally the same. Detail can be added at the cell level or across multiple cells in the same row.

Line Item Details enables you to develop a cell value and save your assumptions behind the value. For example, you can add Line Item Details for Pens: ballpoint, fountain, marker, and so on. The Pen member can then display the total for all pen types. Or say you want to plan for a travel expense for an upcoming quarter using your own logic. This example shows how you can use line item details to plan travel expenses. The details are displayed below the grid:

	Jan
<b>acc2</b>	2850
▼ Air Fare ⊕	2,400.00
Customer Visits ⊕	2.00
Average Rate ⊗	1,200.00
▼ Hotel ⊕	450.00
Number of Nights ⊕	3.00
Rate per Night ⊗	150.00

To create line item details, click a row header, then click



. Click the Down Arrow in the top middle of the Line Item Details grid to collapse it.

About Line Item Details:

- You can include text, numbers, and operators that define how data is calculated.
- Hover over a cell to see if it has Line Item Details.
- Line Item Details don't add members to the ad hoc grid or change its organization.
- You must have write permission to cells that you create Line Item Details for.
- To protect the Line Item Details, the aggregate values in cells having Line Item Details are read-only.
- You can add Line Item Details only to base time periods (level-0 members). You can't add Line Item Details to Summary Time Periods, such as Quarters.
- Number and precision formatting is not reflected in the **Line Item Details** window.
- The sequence of operators follows the same logic as is used to process multiple operators in a complex calculation. See [Order of Line Item Details](#).

## Adding Line Item Details

Use Line Item Details to set how detail items aggregate to cell values.

For an introduction to Line Item Details, see [About Using Line Item Details](#).

To work with Line Item Details:

1. Click a row header, and then click




2. A new grid displays below the ad hoc grid. In this grid, add rows that reflect the structure you want.


For example, click





, and then click **Add Child** to add a row directly below the selected row. See [Working with the Structure of Line Item Details](#).

3. In the text box, you can enter a description of up to 1,500 characters.
4. Click the default plus sign by each row, and then select the operator to set the mathematical relationships among the rows. Select from these operators:

 Approx

 Add

 Subtract

 Multiply

 Divide

5. When you've created the Line Item Details structure, enter the data to set or calculate.  
Enter numbers using the same scaling that was set up for the form. You can copy and paste data into Line Item Details.
6. Click **Apply**.

The values are dynamically calculated and aggregated before the data is saved.

For more information, see [Working with the Structure of Line Item Details](#).

## Working with the Structure of Line Item Details

Learn how to work with the elements in Line Item Details.

To create or change the structure of Line Item Details:

1. Select the row for which you want to add Line Item Details and click



.








2. Click



and then click **Add Child**. Click **Untitled** and provide a name.

3. Add rows that reflect the structure you want. For example, click **Add Sibling** or **Duplicate**. Use these options from the toolbar before the **Line Item Details** grid:

**Table 18-3 Options for Line Item Details**

Option	Result
	Refreshes the Line Item Details grid. Click <b>Yes</b> to discard unsaved data, otherwise click <b>No</b> .
	Adds a child or sibling one level below the selected cell. You can add unlimited children, but consider the potential performance impact.
	Moves the selected row to the next-higher level.
	Moves the selected row to the next-lower level.
	Moves the selected row before its sibling predecessor.
	Moves the selected row after its sibling successor.
	Enables you to select a delete action: <ul style="list-style-type: none"> <li>• <b>Delete Row</b> removes the selected row.</li> <li>• <b>Delete All Rows</b> removes all rows.</li> </ul>

4. Click **Apply**.

## Order of Line Item Details

The order of Line Item Details affects the resulting value that is saved.

Understanding the calculation order helps you correctly enter Line Item Details. Line Item Details leverage the calculation order of + (addition), - (subtraction), \* (multiplication), and / (division). A simple Unit times Rates example demonstrates how to correctly enter Line Item Details.

See [Incorrectly Entering Line Item Details](#) and [Correctly Entering Line Item Details](#).

## Incorrectly Entering Line Item Details

This example shows the order of rows in Line Item Details that generate incorrect data.

In the following table, Rate is set to the unary operator +. Hence, the calculation order first adds the Rate and then multiplies by the Unit, resulting in incorrect data for Feb and Mar.

	Jan	Feb	Mar
Rate +	250	250	250
Unit *	10		
Total:	2500	250	250

## Correctly Entering Line Item Details

This example shows the order of Line Item Details generating correct values.

In the following table, the calculation order is Units multiplied by Rates, resulting in correct values.

When you add Line Item Details, verify the order of the rows to ensure that correct values are calculated and saved.

	Jan	Feb	Mar
Unit+	10		
Rate *	250	250	250
Total:	2500		

## Totaling When Line Item Details Cells are Blank

If a cell in Line Item Details is blank, it's ignored when values are aggregated (instead of assuming that a blank cell means zero).

For example, you might define Line Item Details to calculate the daily rate of hiring an instructor (\$250) times the number of days per month for which you plan to hire an instructor (4 in January, but none in February). The Instructor total for Feb is 250, even though you don't intend to hire an instructor in Feb.

	Jan	Feb
Instructor	1000	250
Rate +	250	250
Days	4	

To correctly total values that are aggregated by the \* multiplier when some cells are blank, you can leave the Rate cell blank, or enter a zero in the Days cell, instead of leaving it blank. This causes the rate (250) to be multiplied by 0 (zero), resulting in a value of zero for Feb.

	Jan	Feb
Instructor	1000	0
Rate +	250	250
Days	4	0



## Printing Ad Hoc Grids

If you require printing, you can print ad hoc grids using the browser's print feature or the Excel Print feature in Oracle Smart View for Office.

To work with an ad hoc form in Smart View, open a form, click **Actions**, and then select **Open in Smart View**.

See Opening Forms and Ad Hoc Grids from Web Applications in *Smart View for Office User's Guide 23.100*.

## Using Free-Form Ad Hoc

If you are familiar with the dimensions and members of your database, you can use free-form ad hoc by typing dimension and member names directly into cells of an ad hoc grid.

You can still use the POV, member selection, and other ad hoc operations in free-form grids.

### Free-Form Ad Hoc Guidelines

Consider these guidelines when working in free-form ad hoc.

- A grid must have at least one row dimension and one column dimension.
- Each row dimension can contain members of only one dimension. Each column dimension can contain members of only one dimension.
- Members of one dimension can be entered only in *one* of the following regions:
  - In the same row
  - In the same column
- Precede member names that contain spaces between words with a single quotation mark.
- Aliases from the current alias table are permitted in free-form grids, but aliases from other alias tables are treated as comments.

# 19

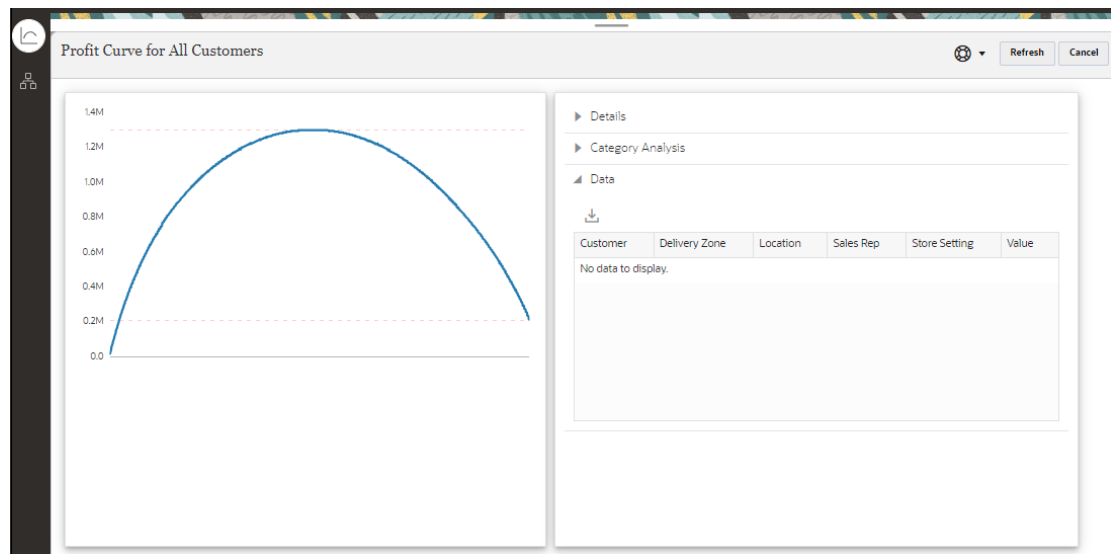
## Working with Profit Curves

### Related Topics

- [About Profit Curves](#)
- [Designing Data Forms for Profit Curves](#)
- [Creating a Profit Curve](#)
- [Managing Profit Curves](#)
- [Generating Profit Curves](#)

### About Profit Curves

Profit curves are graphical representation of data, which show the extent to which a population dimension (such as customers or products) contributes to or detracts from overall profitability.



Profit curves are used for profitability analysis. They enable a simplified visualization of a large amount of data. You can select a portion of the profit curve and perform a category analysis for a selected attribute. You can also download the snippet of data pertaining to that category analysis. For more information, see [Generating Profit Curves](#).

For example, a population dimension (such as Customers or Products) displays along the x-axis of the profit curve in descending order by profit yields.

With customers, the most profitable customer is at the far left and the least profitable at the far right. The y-axis shows cumulative values for the account dimension, such as net profit. The most profitable customer's profit is the first y plot. The second y plot is the second customer's profit added to the first, and so on.

The first part of the curve is the steepest and shows the largest gains in profit. As less profitable customers are added to the curve, it flattens. If profitability goes negative for the least profitable customers, the curve moves downward.

 **Note:**

As with other Enterprise Profitability and Cost Management analytics features, virtually all users can generate and view profit curves, but only administrators and others with sufficient security provisioning can define them.

## Designing Data Forms for Profit Curves

When designing a data form for a profit curve, you need a dimension member of the population (for example, customers) and a metric (for example, net income). This generates a profit curve with the corresponding values plotted on it.

You can change the point of view dimensions (Period, Year, Scenario, and Version) in a data form. If required, narrow it down to a product group or some other segmentation to generate multiple profit curves (for example, profit curves for bikes and accessories by region). You can have multiple types of profit curves based on such segmentations.

 **Note:**

For information on creating data forms, see [Creating Forms](#).

For example, in the data form below, population is the row dimension, and net income is the column dimension.

Period	Years	Scenario	Version	Entity	PCM_Balance	PCM_Rule	Activity	Driver	Product
Jan	FY21	Actual	Working	Entity	Net Balance	PCM_Rule	Activity	Driver	Product

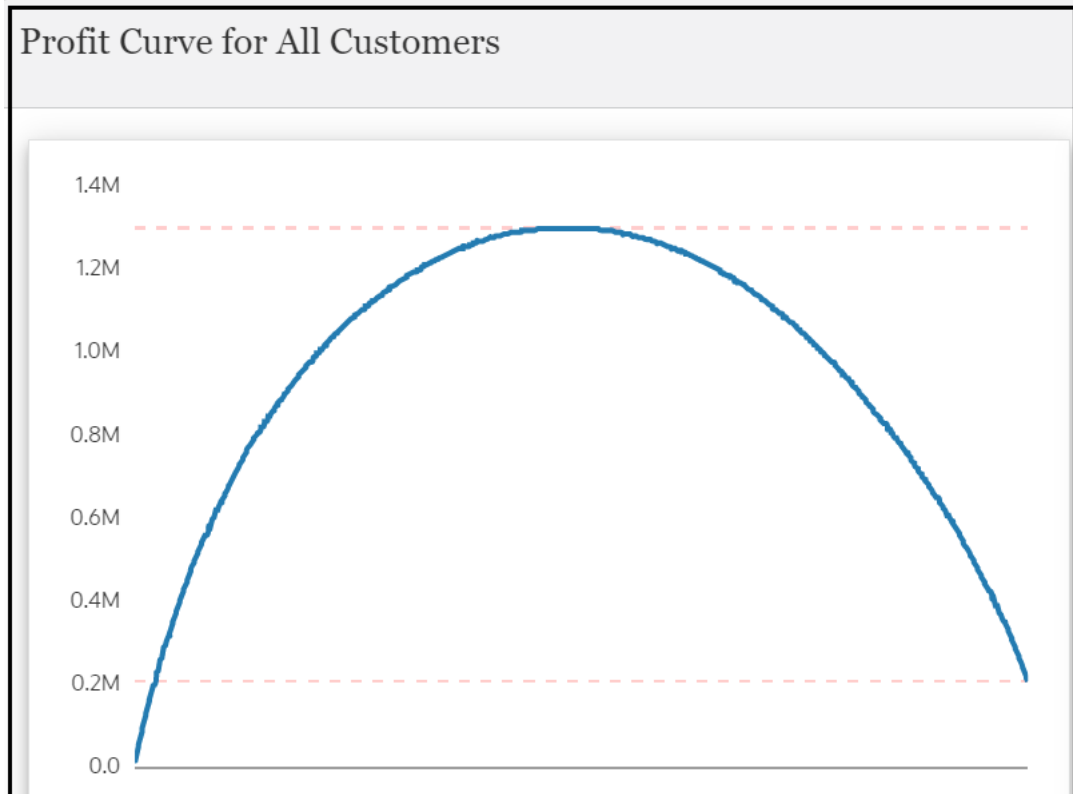
	Net Income								
BB100-001	504.67								
BB100-002	-1,589.71								
BB100-003	-1,554.96								
BB100-004	917.36								
BB100-005	-888.14								
BB100-006	-2,484.52								
BB100-007	-1,458.62								
BB100-008	324.74								
BB100-009	-124.26								
BB100-010	1,122.53								
BB100-011	-705.92								

In this example, the profit curve sorts the data by the net income value with the highest number in the first row (plotted on the leftmost part of the profit curve). Here, the data form generates a calculated column, cumulating the net income values. This cumulative values are the values plotted on the profit curve.

If you sort the net income column with the largest value first, the first cumulated value is same as the Net Income value in the first row. The second row in the cumulated value column is the summation of the first row and the second row of the net income value column. The third row is the first three rows of net income added together and so on.

As long as the net income values are positive, the cumulative values will be growing. If you sort it from the largest to smallest, eventually you will be getting negative net income values. So, the cumulative values start decreasing and the curve starts sloping downward.

The following profit curve is generated from the data form above:



The profit curve above is created with **Account** selected as the **Measure Dimension**, **Net Income** selected as the **Measure Member**, and **Customer** selected as the **Row Dimension**.



**Tip:**

As a best practice, it is recommended to design your data form as simple as possible.

## Creating a Profit Curve

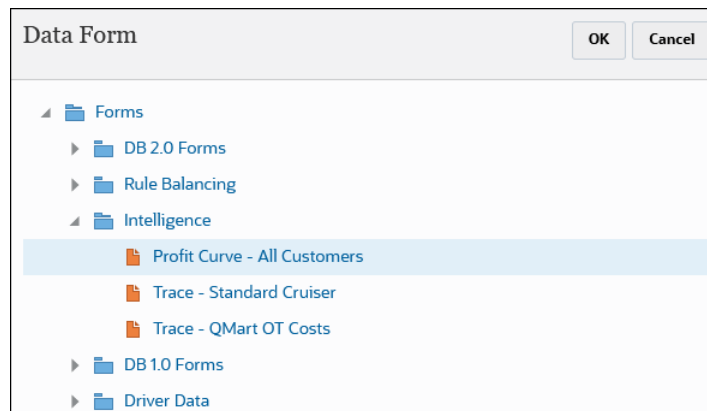
To create a profit curve:

1. From the Home page, select **Intelligence**.
2. On the **Profit Curves** page, click **Create (+)**.
3. In the **Create Profit Curve** dialog box, enter the following information:
  - **Name:** The name of the profit curve.
  - **Description (Optional):** A note that describes the profit curve.
  - **Enabled:** If selected, it allows you to generate a profit curve.
  - **Cube:** Stores data and metadata. Select either the **PCM\_CLC** calculation cube or the **PCM\_REP** reporting cube. The profit curve pulls data from the cube you select. For more information on cubes, see [Managing Cubes](#).
  - **Data Form:** The data form used to generated the profit curve.

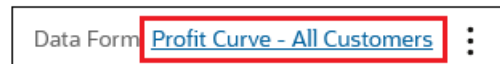
To select a data form:

- Click the **Select Data Form** link.

- In the **Data Form** dialog box, navigate to the desired form, select the form, and then click **OK**.



The form you selected is displayed.



After you select a data form, you can click  $\text{⋮}$ , next to the form to analyze or edit the form.





- **Measure Dimension:** A dimension in the data form. The profit curve pulls value from this dimension you select.
  - **Measure Member:** A member in the data form from which the profit curve pulls value.
  - **Row Dimension:** The row dimension in the data form from which the profit curve pulls value.
  - **X Axis Label (Optional):** A name for the horizontal axis (for example, customers, products, and so on.)
  - **Y Axis Label (Optional):** A name for the vertical axis (for example, profits, revenue, and so on).
4. Click **Save and Close**.

## Managing Profit Curves

From the **Profit Curves** page, you can edit, delete, and copy profit curves. You can also refresh the profit curves displayed on this page.

To manage profit curves:

1. From the Home page, select **Intelligence**.  
By default, the **Profit Curves** page is displayed.
2. **Optional:** To search or sort profit curves, perform an action:
  - Enter text in the **Search** field, and then press **Enter** or click **Search** (🔍).
  - Click the drop-down to select any of the following to sort profit curves:
    - Name
    - Cube

- Created By
  - Creation Date
  - Modified By
  - Modified Date
- To sort profit curves in ascending order, click **Sort by Ascending** (▲).
  - To sort profit curves in descending order, click **Sort by Descending** (▼).
3. Complete a step:
- To edit a profit curve, select the desired profit curve, and click .
  - To delete a profit curve, select the desired profit curve, and click .
  - To copy a profit curve, select the desired profit curve, and click .
  - To refresh the profit curves list, click .

## Generating Profit Curves

To generate a profit curve:

1. From the Home page, select **Intelligence**.
2. On the **Profit Curves** page, click the name of the profit curve you want to generate.

The profit curve is generated and displayed on the left panel of the page. Click **Refresh** to display the latest data. In the right panel of the page, you can click the expansion nodes to view the following information:

- **Details:** Display the distribution of values associated with the profit curve.
- **Category Analysis:** If the row dimension has attributes, you can select a portion of the curve (by dragging the mouse cursor), and analyze the corresponding breakdown of member contributions for a selected attribute category.

For example, in the figure below, the rightmost part of the curve (the least performing customers) is selected, and the attribute category selected is **Region**. The Category Analysis chart shows that 26.6% of the least performing customers are in the region USA E SE.



- **Data:** Displays a snippet of data allocations on the selected attribute category. You can also download data by clicking **Download** (📄)



# Tracing Allocations

## Related Topics

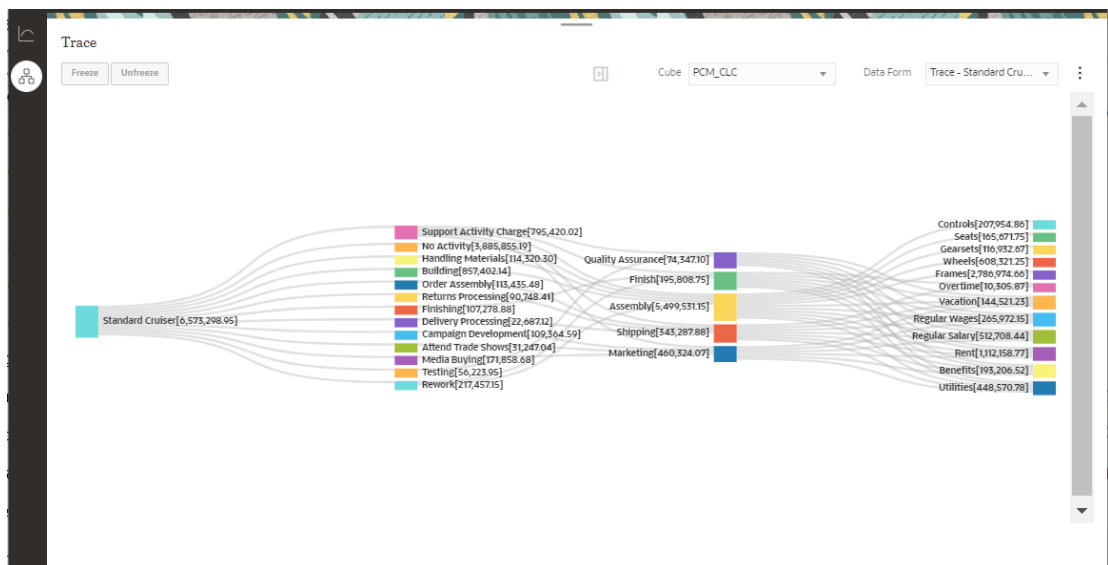
- [About Trace](#)
- [Designing Data Forms for Trace](#)
- [Viewing Allocation Trace Results](#)

## About Trace

The Trace is a diagrammatic representation of data forms. It enables:

- Visualizing relationship of data in forms using sankey diagrams.
- Tracing allocation amounts flowing through a model. For example, where money is spent, how you spent it, and how much is consumed by each segments involved in production.
- Re-aligning expenses from where they were spent, through which department, function, and which utilities have consumed those functions.
- Evaluation and validation of the flow of expenses against profits.

The following diagram shows an example from the BKsML50 sample application provided with Enterprise Profitability and Cost Management. (See [Creating the Sample Application](#).) The right-most nodes of the diagram show things the company pays for. Costs on these things (for example, seats, gearsets, wheels) get associated with the product bike through the departments (for example, Assembly, Shipping, Marketing), which purchase these things. The departments use these things in some of the functions they perform (for example, handling materials, building, testing, and rework). The diagram shows how costs are aligned to the product.



## Designing Data Forms for Trace

A Trace data form contains the dimension values that you want to trace using the sankey diagram. In a Trace data form, the first dimension in the row is your starting point in the trace diagram, and the subsequent dimensions are additional ones you can trace the amounts through. Here, the money flows from the rightmost dimension to the leftmost dimension.

Period	Years	Scenario	Version	PCM_Rule	Customer	Driver	Allocation In
Jan	FY21	Actual	Working	PCM_Rule	No Customer	Driver	
Standard Cruiser		Support Activity Charge	Assembly			Regular Salary	197,748.69
Standard Cruiser		Support Activity Charge	Assembly			Regular Wages	50,641.97
Standard Cruiser		Support Activity Charge	Assembly			Vacation	48,148.09
Standard Cruiser		Support Activity Charge	Assembly			Benefits	61,630.8
Standard Cruiser		Support Activity Charge	Assembly			Rent	80,026.22
Standard Cruiser		Support Activity Charge	Assembly			Utilities	32,277.26
Standard Cruiser		Support Activity Charge	Finish			Regular Salary	20,767.01
Standard Cruiser		Support Activity Charge	Finish			Regular Wages	4,210.32
Standard Cruiser		Support Activity Charge	Finish			Vacation	7,488.82
Standard Cruiser		Support Activity Charge	Finish			Benefits	6,197.38

**Allocation In** (the column dimension in the last cell) is where you track the movement of money. The money flows from the rightmost dimension to the leftmost dimension. You can narrow down the data tracing by making selections in the point of view dimensions (for example, in the figure above, **No customer** is selected for the **Customer** point of view dimension). This enables tracking the flow of money before it's pushed out to the customers.

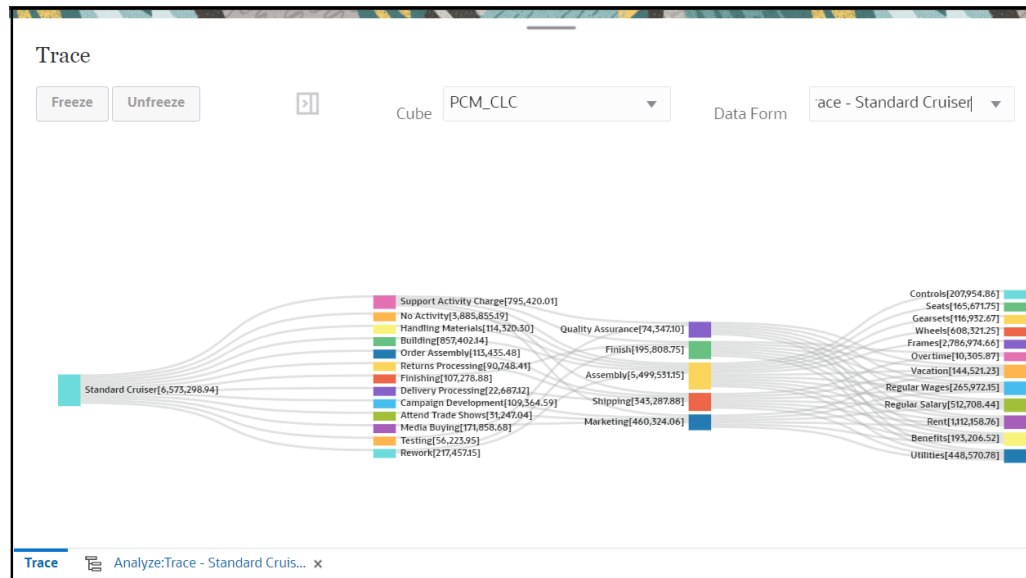
In the data form designer below, **PCM\_Allocation In** is the default member. **PCM\_Allocation In** is a member in the PCM\_Balance dimension in which you track amounts posted by the allocation rule. **Allocation In** is an inward flow of amounts. Here, you can track the PCM\_Allocation In member and decide across which dimensions you want to track. In a Trace data form, those dimensions are displayed in rows.

In this example, for the first row dimension, a specific product **B1001** (Standard Cruiser) is selected. This is your starting point in the Trace diagram. As a best practice, select a specific value for the first row dimension, so that the Trace diagram generated will not be huge and complex.

For functions (in the Activity dimension) that are performed for the product, **ILvI0Descendants (Activity)** is selected. **ILvI0Descendants (Entity)** is selected for departments or cost centers in the Entity dimension which perform those functions. **ILvI0Descendants (NetIncome)** is selected for actual funds traced.

As a best practice, you can design a data form in such a way that it limits the number of points (nodes) in the diagram. This enables generating a simplified trace diagram. You can do this by selecting a narrow range of dimensions. For example, select level 0 descendents of all activities (row dimension displayed in the second column of the data form), or select dimensions with limited members, or select dimensions where you can limit the number of level 0 rows you see. It allows scaling the results of the data form, enabling a more realistic visualization. For more information on selecting members, see [Using the Member Selector](#).


The following diagram is generated from the data form designed above:



In this example, B1001 in the data form is the Standard Cruiser product, and it's displayed as the starting point in the diagram. Values pertaining to each node in the diagram come from the values in the data form you designed. The rightmost dimension (Actual amount) in the data form is where the money flow started, and the leftmost dimension (the product Standard Cruiser) is where the money ended.

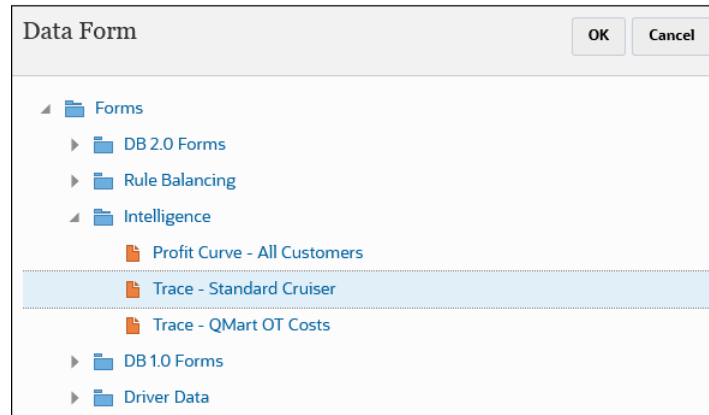
## Viewing Allocation Trace Results

To view allocation trace results:

1. From the Home page, select **Intelligence**.
2. On the left navigation bar, select **Trace** (  ).
3. On the **Trace** page, click the drop-down and select a **Cube**.
4. Select the data form that will be used to generate the trace results.
  - Click the **Select Data Form** link.



- In the **Data Form** dialog box, navigate to the desired form, select the form, and then click **OK**.



The form you selected is displayed on the **Trace** page.



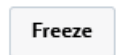
5. Select a point of view for which to display the data. To do this, select members for the **Years**, **Period**, **Scenario**, and **Version** dimensions. (See [Understanding Points of View.](#))



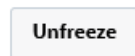
You must select a point of view that has already been defined on the **Calculation Control** page. If you select a point of view that has not already been defined, you will get an error message to "Select a valid Point of View" when you click **Refresh**. (See [Creating a Point of View.](#))

Note that the point of view you select overrides the fields selected in the data form definition. (See [Designing Data Forms for Trace.](#))

6. Click **Refresh** to display the trace results.
7. **Optional:** To do more with the diagram, perform an action:
  - a. To isolate a node and view it's allocation flow, click the desired node, and then click



- b. To restore all the nodes, click



- c. To analyze or edit the data form, click  $\vdots$ , and select an option:
      - **Analyze Data Form:** Displays the data form that generated the trace diagram.
      - **Edit Data Form:** Allows you to edit the data form.

 **Note:**

For more information on data forms, see [Creating Forms](#).

After selection, a tab appears at the left-bottom corner of the page for each selected action.

- To switch back from the **Analyze Data Form** or **Edit Data Form** page to the **Trace** diagram page, click the **Trace** tab. On the **Trace** page, select a **Data Form**.

# Using Smart View to Import and Edit Application Metadata

## Related Topics

- [About Using Smart View to Work with Application Metadata](#)
- [Using Smart View Grids to Import and Edit Application Metadata](#)
- [Importing Dimensions in Smart View](#)
- [Editing Members in Smart View](#)
- [Adding Application Members in Smart View](#)
- [Moving Members in Smart View](#)
- [Working with Attribute Dimensions](#)
- [Designating Shared Members in Smart View](#)
- [Refreshing Databases](#)
- [Planning Admin Extension and Office AutoCorrect](#)

## About Using Smart View to Work with Application Metadata

**Applies to:** Enterprise Profitability and Cost Management, Financial Consolidation and Close, FreeFormPlanning, Planning Modules, Tax Reporting

Service Administrators can use the Planning Admin Extension with Oracle Smart View for Office to quickly import and edit dimension and member metadata.



### Note:

All procedures described in this appendix are performed within Smart View using the Planning Admin Extension.

- To use the Windows client-based version of Smart View, see *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators* for instructions on installing the extension.
- To use the Mac- or browser-based version of Oracle Smart View for Office (Mac and Browser), see the *Deploying and Administering Oracle Smart View for Office (Mac and Browser)* for instructions on deploying the extension.

## Using Smart View Grids to Import and Edit Application Metadata

The Smart View grid allows you to rapidly add, edit, and move the members of a dimension.

- [About the Smart View Grid](#)

- [The Smart View Grid and Ribbon Display](#)
- [Guidelines for Using the Smart View Grid](#)
- [Default Metadata Dimension Member Properties](#)

## About the Smart View Grid

In Oracle Smart View for Office and in Oracle Smart View for Office (Mac and Browser), the grid consists of two dimensions:

- An Oracle Enterprise Performance Management Cloud dimension on one axis (Planning, Financial Consolidation and Close, Tax Reporting)
- A metadata dimension on another axis

A metadata dimension represents a flat list of metadata members. For each dimension, a predefined set of metadata members is presented by default. Each metadata member corresponds to a specific member property valid for the dimension that was imported onto the grid. Instead of containing numeric values, the metadata grid data cells hold the specific property values. To add metadata dimension member properties that are not on the grid by default, use the **Member Selection** dialog in Smart View.

## The Smart View Grid and Ribbon Display

The Smart View grid displays the dimension with member names in rows and member properties in columns. When you first import a dimension for editing, a predefined set of member properties is displayed by default in the grid.

### Dimension Grid in Smart View

In [Figure 1](#), you can see an example of the default member properties for the Vision Account dimension in Oracle Smart View for Office.

**Figure 21-1 Dimension Imported into Smart View for Office Grid with the Planning Ad Hoc Ribbon Displayed**

	A	B	C	D	E	F	G	H	I	J	K	L
1		Parent Member	Default Data Storage	Data Type	Plan1 Consol op.	Plan2 Consol op.	Plan3 Consol op.	VisASO Consol op.	VisIASO Consol op.	Account Type	Variance Reporting	Time Balance
2	Account	Never Share	Currency	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore			
3												

Note that in [Figure 1](#), the Planning Ad Hoc ribbon is displayed. Depending on the data source to which you are connected, the provider ad hoc ribbon for that data source is displayed. For example, if you are connected to an Enterprise Profitability and Cost Management data source, then the EPCM Ad Hoc ribbon is displayed.

The ad hoc ribbon that is displayed is the same as the provider ad hoc ribbon displayed for a conventional Smart View ad hoc grid, only with fewer options enabled.

For all dimensions, including attribute dimensions, these are the valid options in the provider ad hoc ribbon:



- Zoom In
- Zoom Out
- Keep Only
- Remove Only
- Member Selection
- Refresh
- Submit Data

The following options may appear enabled, but are not valid for metadata grids: Preserve Format, Cascade, Insert Attributes, POV, and Adjust.

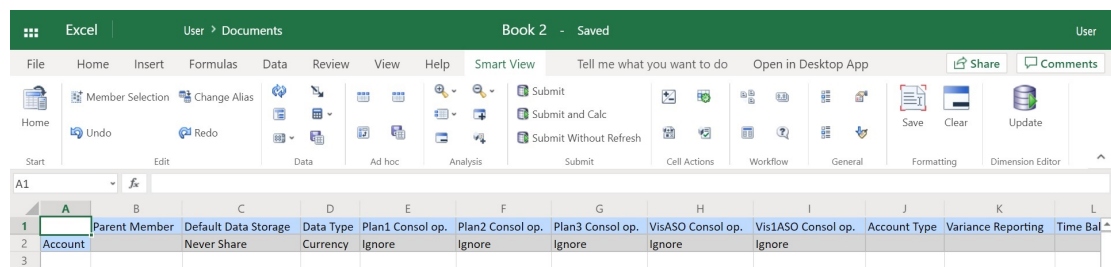
You can add metadata dimension member properties using the **Member Selection** dialog box, accessed from the ribbon, or accessed by right-clicking a property in the grid, then selecting **Smart View**, and then **Member Selection**.

For information on using the **Member Selection** dialog box in Smart View, see *Selecting Members from the Member Selector* in *Working with Oracle Smart View for Office 22.100*.

### Dimension Grid in Smart View (Mac and Browser)

In [Figure 2](#), you can see an example of the default member properties for the Vision Account dimension in Oracle Smart View for Office (Mac and Browser), running in the Chrome browser.

**Figure 21-2 Dimension Imported into Smart View (Mac and Browser) Grid with the Smart View Ribbon Displayed**



Note that in [Figure 2](#), the Smart View ribbon is displayed. This is the default ribbon name for an Oracle Smart View for Office (Mac and Browser) deployment. You may specify a different name for the ribbon. When importing a dimension on to a grid, all ribbon options appear enabled, but only a subset are applicable to a dimension grid.

For all dimensions, including attribute dimensions, these are the valid options in the ribbon:

- Zoom In
- Zoom Out
- Keep Only
- Remove Only
- Member Selection
- Refresh

- Update

You can add metadata dimension member properties using the **Member Selection** dialog box, accessed from the ribbon.

For information on using the **Member Selection** dialog box in Oracle Smart View for Office (Mac and Browser) to add metadata member properties to the grid, see *Selecting Members from the Member Selector in Working with Oracle Smart View for Office (Mac and Browser)*.

## Guidelines for Using the Smart View Grid

The following guidelines will assist you in using the Smart View grid to edit dimension metadata:

- Use the Planning Admin Extension to add dimension members, and to edit and update dimension and member properties.
- The Planning Admin Extension cannot be used to:
  - Delete or remove dimensions (that is, the dimension root member) or members.
  - Edit dimension or member names.
- Data cell values can be textual or enumeration or numerical.
- The Parent Member is used to specify or modify the parent/child relationship.
- The position of a member in a grid doesn't necessarily represent the actual position of siblings in the outline.
- Each metadata grid must be linked to a corresponding dimension.
- Columns for each dimension are based on the corresponding set of member properties available in the dimension editor.

When you first import a dimension, a predefined set of metadata dimension member properties is displayed. See [Default Metadata Dimension Member Properties](#) for a list of those member properties.

- After a metadata grid is opened, it can't be relinked to a different dimension.
- The corresponding valid set of metadata members is specific to each dimension.
- Dimension members are valid for corresponding dimensions only.
- For the Time Period dimension, Data Storage is the only editable property.
- The following functionality isn't available in Smart View grids with dimension metadata:
  - Pivot
  - Pivot to POV
  - Cell Text
  - Cell Notes
  - Supporting Details

## Default Metadata Dimension Member Properties

When you first import a dimension in the Planning Admin Extension, a predefined set of dimension metadata member properties is displayed by default. Use the Member Selection dialog box to add other metadata member properties to the grid.

The sections below list the default member properties for the Planning dimensions.

For information on using the Member Selection dialog box in Oracle Smart View for Office to add other member properties to the grid, see "Selecting Members from the Member Selector" in *Oracle Smart View for Office User's Guide*.

### Account Dimension

- Parent Member
- Default Data Storage
- Data Type
- Consol op. for all Cubes
- Account Type
- Variance Reporting
- Time Balance
- Default Alias Table
- Default Formula

### Entity Dimension

- Parent Member
- Default Data Storage
- Data Type
- Consol op. for all Cubes
- Base Currency
- Default Alias Table

### Custom Dimensions

- Parent Member
- Default Data Storage
- Data Type
- Consol op. for all Cubes
- Default Alias Table

### Scenario Dimension

- Parent Member
- Default Data Storage
- Data Type

- Consol op. for all Cubes
- Start Yr.
- End Yr.
- Start Period
- End Period
- Default Alias Table
- Default Formula

#### **Version Dimension**

- Parent Member
- Default Data Storage
- Data Type
- Consol op. for all Cubes
- Type
- Default Alias Table
- Default Formula

#### **Period and Years Dimensions**

- Leave as is or limit to Parent Member
- Default Data Storage – Note that for the Time Period dimension, Data Storage is the only editable property
- Data Type
- Default Alias Table

#### **Currency Dimension**

- Parent Member
- Default Data Storage
- Data Type
- Symbol
- Predefined Symbol
- Scale
- Precision
- Triangulation Currency
- Reporting Currency
- Thousands Separator
- Decimal Separator
- Negative Sign
- Negative Color
- Default Alias Table

- Default Formula

#### HSP\_View Dimensions (Sandbox dimensions)

- Parent Member
- Default Data Storage
- Data Type
- Consol op. for all Cubes
- Default Alias Table

## Importing Dimensions in Smart View

Importing dimensions into the Smart View grid refers to placing the dimension and its members, and their respective properties, on the grid in preparation for editing.

By importing a dimension into Oracle Smart View for Office or Oracle Smart View for Office (Mac and Browser), you can rapidly add, edit, and move the members of the dimension.



#### Note:

You must have Service Administrator privileges to import dimensions in Smart View.

See:

- [Importing Dimensions in Smart View for Office](#)
- [Importing Dimensions in Smart View \(Mac and Browser\)](#)

## Importing Dimensions in Smart View for Office



#### Note:

You must have Service Administrator privileges to import dimensions in Oracle Smart View for Office.

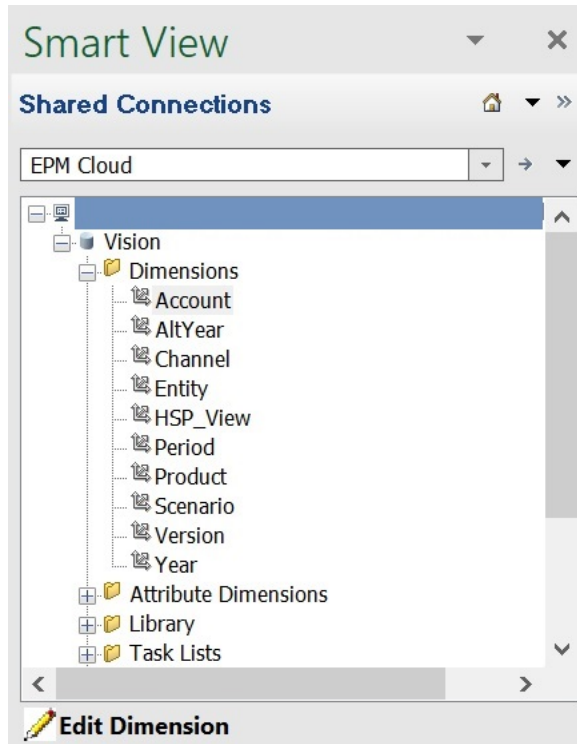
To import a dimension into a Smart View grid:

1. From the Smart View ribbon, click Panel.
2. In the Smart View Panel, click Shared Connections or Private Connections, and provide your user name, and password in the login windows.  
  
If you chose Private Connections, select the private connection in the drop-down list of connections, then provide your login credentials.
3. From the drop-down list in the Smart View Panel, select your business process (for example, **Planning**) or **EPM Cloud**.
4. In the tree in the Smart View Panel, expand the **Dimensions** folder to view the application dimensions in the folder.

If attribute dimensions are defined, they are displayed in the **Attribute Dimensions** folder.

If a Time Period dimension is defined, it's displayed in the Dimensions folder. Note that for the Time Period dimension, Data Storage is the only editable property.

In the following example, the Dimensions folder is expanded and contains 10 dimensions.



5. Right-click a dimension name and select **Edit Dimension**.

Alternatively, select a dimension and then, in the Action Panel, select **Edit Dimension**.

See [Dimension Grid in Smart View](#) for an illustration of the initial grid for the Account dimension.

## Importing Dimensions in Smart View (Mac and Browser)

Before you begin to work with dimensions in Oracle Smart View for Office (Mac and Browser), you should either sideload or deploy Smart View in your environment. Instructions are in *Deploying and Administering Oracle Smart View for Office (Mac and Browser)*:

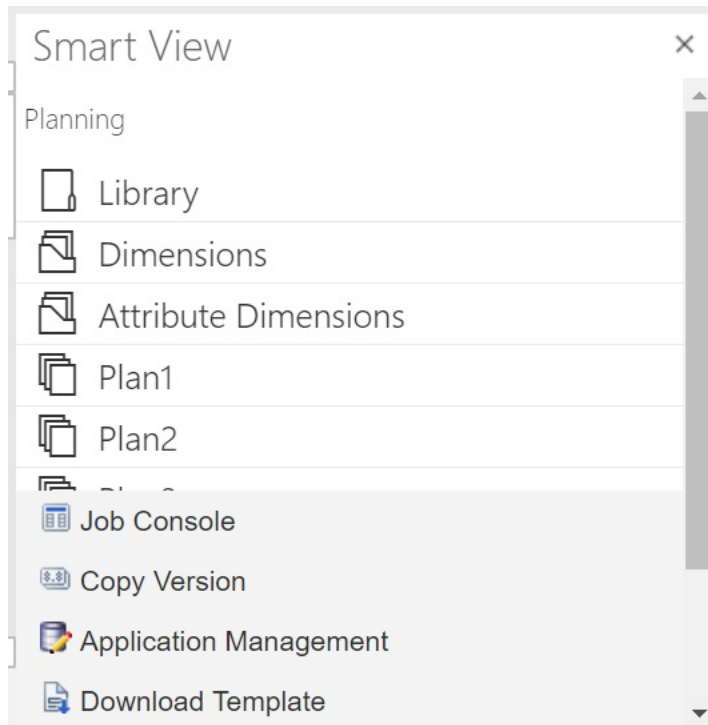
- Sideload and Logging In
- Deploying the Manifest File to Office 365 Users

To import a dimension into an Oracle Smart View for Office (Mac and Browser) grid:

1. From the Smart View ribbon, click **Home**.

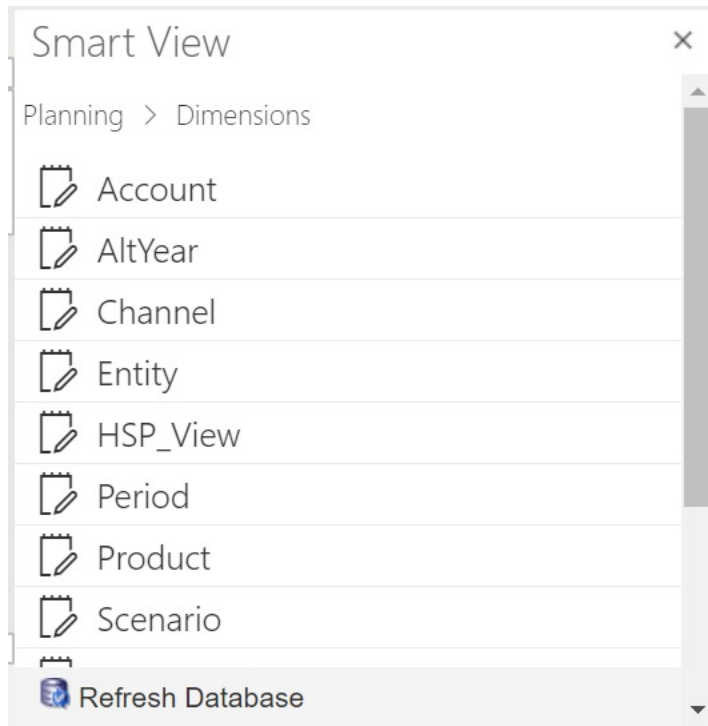
In the **Home** panel, dimensions are displayed in the **Dimensions** folder. If attribute dimensions are defined, they are displayed in the **Attribute Dimensions** folder.

If a Time Period dimension is defined, it's displayed in the Dimensions folder. Note that for the Time Period dimension, Data Storage is the only editable property.



2. In the **Smart View Home** panel, click the **Dimensions** folder to expand it and view the application dimensions in the folder.

In the following example, the Dimensions folder is expanded and shows eight of the 10 dimensions in the Vision application.



3. Click a dimension name to import the dimension on to the grid.  
See [Dimension Grid in Smart View \(Mac and Browser\)](#) for an illustration of the initial grid for the Account dimension.
4. **Optional:** Click the provider link in the path at the top of the panel to return to the main page of the Home panel  
For example, in the figure in [step 2](#), you would click **Planning** to return to the main page of the Home panel.

## Editing Members in Smart View

The Smart View grid allows you to rapidly edit the properties of members of a dimension.

To edit member properties in Smart View:

1. Within Oracle Smart View for Office or Oracle Smart View for Office (Mac and Browser), import a dimension into a Smart View grid (see [Importing Dimensions in Smart View](#)).
2. Highlight a member property in the grid.  
Note that for the Time Period dimension, Data Storage is the only editable property.
3. In the drop-down menu, select a value.



 **Note:**

Modified cells are displayed in a different color.

4. To save the grid, perform a task:
  - Oracle Smart View for Office: In the Planning Ad Hoc ribbon, click **Submit Data**.
  - In Oracle Smart View for Office (Mac and Browser), in the Smart View ribbon, click **Update**.

 **Note:**




You can save changes to multiple members and properties in the same **Submit Data** or **Update** operation. If the operation fails for one member, the application server will stop the operation and not save any changes.

## Adding Application Members in Smart View

The Smart View grid allows you to rapidly add members to a dimension.

- [Adding Members in Smart View](#)
- [Guidelines for Adding Members in Smart View](#)

### Videos

Your Goal	Watch This Video
Learn about adding Entity dimension members in Oracle Smart View for Office.	 <a href="#">Managing Entity dimension members in Oracle® Smart View for Office</a>
Learn about adding Account dimension members in Smart View.	 <a href="#">Managing Account dimension members in Oracle® Smart View for Office</a>
Learn about adding Scenario dimension members in Smart View.	 <a href="#">Managing Scenario dimension members in Oracle® Smart View for Office</a>

## Adding Members in Smart View

The Smart View grid allows you to rapidly add members to a dimension.

To add members in Smart View:

1. Within Oracle Smart View for Office or Oracle Smart View for Office (Mac and Browser), import a dimension into a Smart View grid (see [Importing Dimensions in Smart View](#)).  
Note that Oracle Smart View for Office does not support adding members to the Time Period dimension.
2. Enter the name of a new member in the name column.

 **Note:**

To add a member with a numeric name, place a single quote (') in front of the numeric member name to inform the system that the number is a member name and not data. For example, to add a member named 123, enter '123.

3. From the ribbon, click **Refresh**.

New members are marked by an asterisk (\*) in the grid after you perform the Refresh. A default set of properties is automatically applied to the new member. The default Parent Member is the root member of the dimension.

4. **Optional:** To change any property from the default value (the root member), highlight the appropriate cell in the grid, and then from the drop-down menu, select another value. (See [Editing Members in Smart View](#).)

 **Note:**

Perform a Refresh *before* you modify any properties in your new member. The Refresh operation will replace any changed values with default values from the server.

5. To save the grid, perform a task:

- Oracle Smart View for Office: In the Planning Ad Hoc ribbon, click **Submit Data**.
- In Oracle Smart View for Office (Mac and Browser), in the Smart View ribbon, click **Update**.

 **Note:**

- To modify the properties of the new member, see [Editing Members in Smart View](#).
- In Oracle Smart View for Office, member properties, including member names, can be localized based on the particular Locale set by in the Smart View add-in.
- You can save changes to multiple members and properties in the same **Submit Data** or **Update** operation. If the operation fails for one member, the application server will stop the operation and not save any changes.

## Guidelines for Adding Members in Smart View

- A new member is added as the last sibling under the specified parent.
- Parent-child relationships are determined by the Parent Name column property.
- The relative position of a new member in the grid is insignificant.

- The relative position of a new member in the grid will not be changed after performing the **Submit Data** or **Update** operation. To see the actual position of a new member in the outline reflected in the ad hoc grid, perform **Zoom Out**, then **Zoom In**.
- A full validity check of a new member name, including a check for invalid characters and a check for duplicate names, is performed during the **Submit Data** or **Update** operation.
- Default properties are automatically applied by the application to a new member. The specific default properties are based upon those of the dimension.
- When adding new currency members to a Currency dimension in a simplified application, the parent member for the new currency defaults to the "Currency" dimension member. It should default to the "Input Currencies" member. You can correct this by doing the following:
  1. Replace "Currency" with "Input Currencies" in the Parent Member column for each new currency member that you added.
  2. Perform a **Submit Data** or **Update**.
  3. Click **Refresh**.
  4. Verify that for each new currency you added, the entry for the Parent Member column is "Input Currencies."

## Moving Members in Smart View

The Smart View grid allows you to rapidly move members from one parent to another within a dimension.

To move a member in Oracle Smart View for Office:

1. Within Smart View or Oracle Smart View for Office (Mac and Browser), import a dimension into a Smart View grid (see [Importing Dimensions in Smart View for Office](#).)
2. Highlight the member in the **Parent Member** column in the grid.

### Note:

An empty Parent Member property causes the value of the Parent Member to default to the root member.

3. Enter a parent name at the intersection of the **member name** and **Parent** column.
4. Click **Submit Data** to save the grid.

### Note:

You can save moves of multiple members or subtrees in the same **Submit Data** operation. If the **Submit Data** operation fails for one member, the application server stops the operation and doesn't save changes.

## Guidelines for Moving Members in Smart View

- An empty Parent Member in the grid denotes a root member in the dimension.

- The value of a Parent Member follows the rules applicable to the corresponding value in the metadata load file used by Smart View.

## Working with Attribute Dimensions

### Related Topics

- [Adding Attribute Dimension Members in Smart View](#)

## Adding Attribute Dimension Members in Smart View

You create attribute dimensions in the web interface. You can then add members to attribute dimensions using the Admin Extension in Oracle Smart View for Office or Oracle Smart View for Office (Mac and Browser).

- [Adding Attribute Dimension Members in Smart View for Office](#)
- [Adding Attribute Dimension Members in Smart View \(Mac and Browser\)](#)

## Adding Attribute Dimension Members in Smart View for Office

You create attribute dimensions in the web interface. You can then add members to attribute dimensions using the Admin Extension in Oracle Smart View for Office.

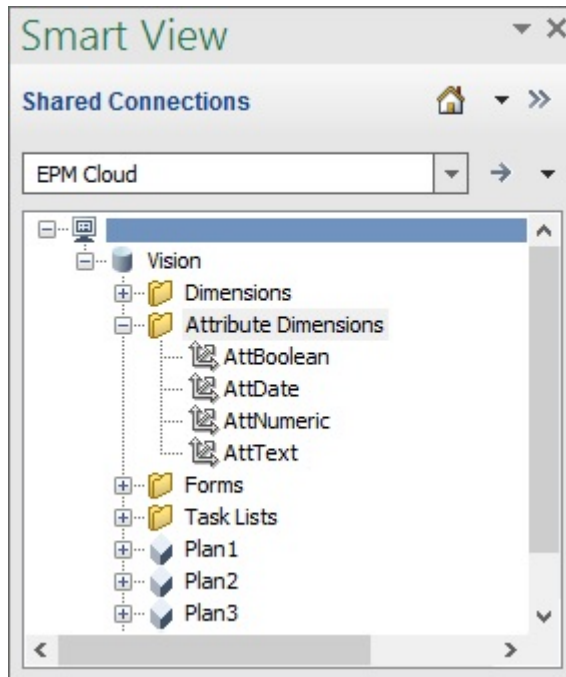
To add members to attribute dimension members:

1. From the Smart View ribbon, click Panel.
2. In the Smart View Panel, click Shared Connections or Private Connections, and provide your user name, and password in the login windows.

If you chose Private Connections, select the private connection in the drop-down list of connections, then provide your login credentials.

3. From the Smart View Panel, select EPM Cloud.
4. In the tree in the Smart View Panel, expand the Attribute Dimensions node.

In the following example, the Attribute Dimensions node contains four attribute dimensions, one for each attribute type: text, date, Boolean, and numeric.



5. Select an attribute dimension, and then select **Edit Dimension**.

To illustrate, we selected the AttText attribute dimension to edit. An example of the initial grid for the attribute dimension is shown. This dimension has no members yet, and just two properties, Parent member and Default Alias Table.

	A	B	C
1		Parent Member	Default Alias Table
2	AttText		

6. Type the attribute member names to add; for example:

	A	B	C
1		Parent Member	Default Alias Table
2	AttText		
3	Gold		
4	Silver		
5	Platinum		

7. From the Smart View ribbon, click **Submit**.

The attribute members are submitted to the application.

	A	B	C
1		Parent Member	Default Alias Table
2	AttText		
3	Gold	AttText	
4	Silver	AttText	
5	Platinum	AttText	

8. **Optional:** Continue editing the attribute members, entering data for other properties by typing directly in the grid, and then submit your changes.

## Adding Attribute Dimension Members in Smart View (Mac and Browser)

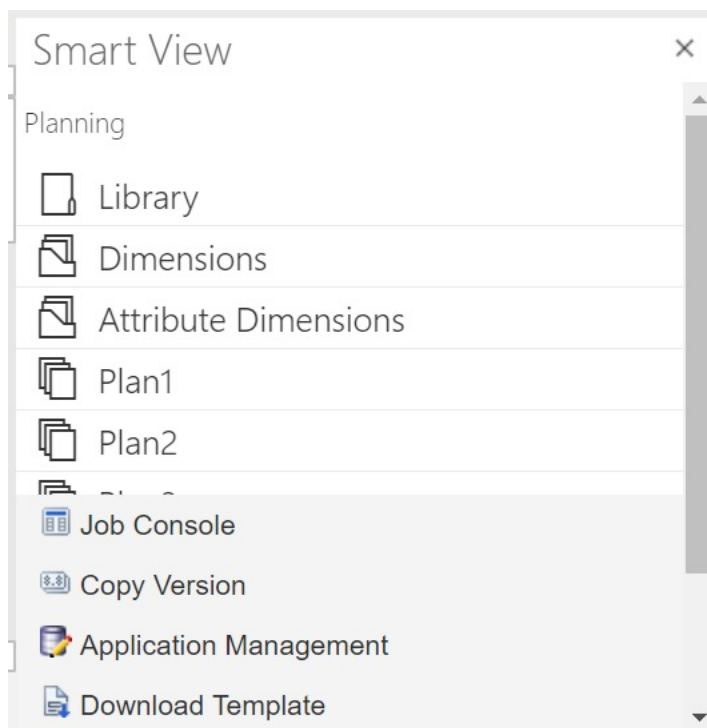
Before you begin adding attribute dimension members in Oracle Smart View for Office (Mac and Browser), you should either sideload or deploy Smart View in your environment. Instructions are in *Deploying and Administering Oracle Smart View for Office (Mac and Browser)*:

- Sideload and Logging In
- Deploying the Manifest File to Office 365 Users

To add a member to an attribute dimension in a Oracle Smart View for Office (Mac and Browser) grid:

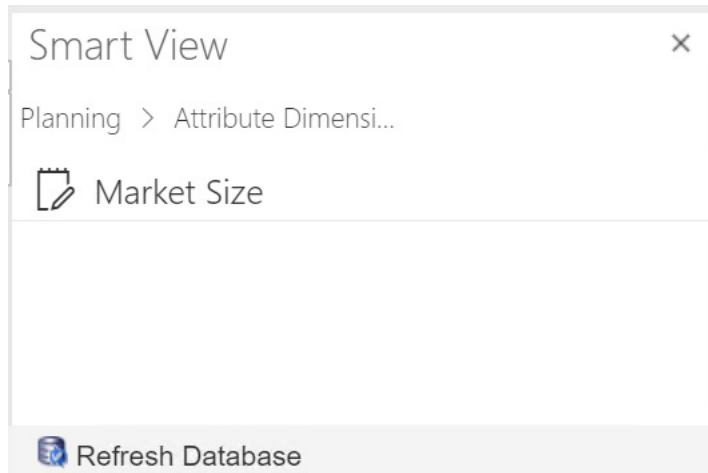
1. From the Smart View ribbon, click **Home**.

In the **Home** panel, dimensions are displayed in the **Dimensions** folder. If attribute dimensions are defined, they are displayed in the **Attribute Dimensions** folder.



- In the **Smart View Home** panel, click the **Attribute Dimensions** folder to expand it and view the attribute dimensions in the folder.

In the following example, the Attribute Dimensions folder is expanded and shows one attribute dimension, Market Size, in the Vision application.



- Select an attribute dimension to import it onto the grid.

To illustrate, we selected the Market Size attribute dimension to edit. An example of the initial grid for the attribute dimension is shown. This dimension has no members yet, and just two properties, Parent member and Default Alias Table.

	A	B	C
1		Parent Member	Default Alias Table
2	Market Size		

- In the attribute name column, under the attribute name, type the attribute member names to add.

	A	B	C
1		Parent Member	Default Alias Table
2	Market Size		
3	Large		
4	Medium		
5	Small		

- From the Smart View ribbon, click **Submit**.

The attribute members are submitted to the application.

	A	B	C
1		Parent Member	Default Alias Table
2	Market Size		
3	Large	Market Size	
4	Medium	Market Size	
5	Small	Market Size	

- Optional:** Continue editing the attribute members, entering data for other properties by typing directly in the grid, and then submit your changes.

## Designating Shared Members in Smart View

The Smart View grid allows you to rapidly designate members for sharing within a dimension.

### Note:

In Smart View, the Shared data storage option isn't available for members of the Currency dimension or any attribute dimensions.

To designate a shared member in Oracle Smart View for Office:

- Verify that the base member exists.
- Highlight the base member in the **Parent Member** column in the grid.
- Change the parent name value for the base member.
- Highlight the base member in the **Data Storage** column.
- In the drop-down menu, select **Shared**.
- Click **Submit Data** (Windows) or **Submit** (Mac and Browser) to save the grid.

The submit operation will refresh the base member with its original Parent Member and Data Storage properties. The shared member will be added under the specified parent on the server. You must zoom in on the parent to see the newly added shared member.

### Note:

The new shared member will *not* be automatically added to the Smart View grid. The list of members displayed in the grid remains unchanged.

## Refreshing Databases

### Related Topics

- [Refreshing Databases in Smart View for Office](#)



- [Refreshing Databases in Smart View \(Mac and Browser\)](#)

## Refreshing Databases in Smart View for Office

The Oracle Smart View for Office grid allows you to quickly refresh a database.

To refresh a database in Smart View:

1. From the Smart View ribbon, click **Panel**.
2. From the Smart View Panel, select **Planning**.
3. Expand the **Dimensions** folder to view the application dimensions in the folder.  
If attribute dimensions are defined, they are displayed in the **Attributes** folder.
4. Right-click the *root* **Dimension** or **Attributes** folder and select **Refresh Database**.

The Smart View **Refresh Database** dialog box is displayed.

### **Tip:**

The database refresh cannot be completed while a rule type job is running or in progress. Check the Job Console, either in the web or in Oracle Smart View for Office (Mac and Browser), for any jobs running against the database. When all jobs are complete, then perform the database refresh.


5. Click **Refresh**.

A progress bar is displayed, indicating the percentage of steps completed for the refresh or create operation.

## Refreshing Databases in Smart View (Mac and Browser)

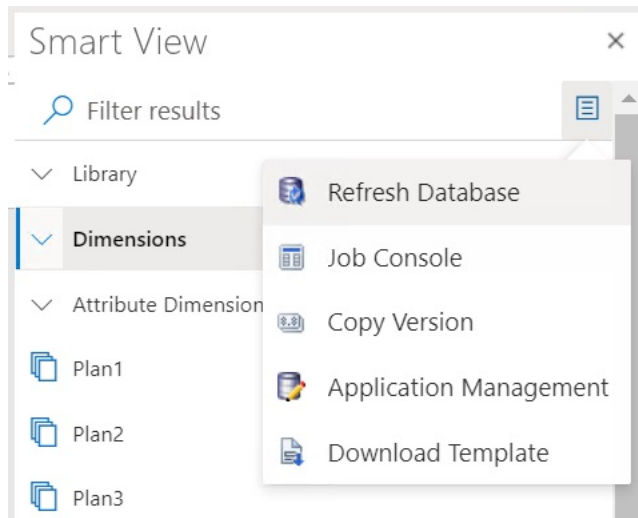
The Smart View grid allows you to quickly refresh a database or create a new one.

To refresh a database in Oracle Smart View for Office (Mac and Browser):

1. From the Smart View ribbon, click **Home**.
2. From the Smart View Home panel, navigate to the root application **Dimensions** folder.  
If attributes are defined in the application, to refresh attribute dimensions, navigate to the **Attribute Dimensions** folder.
3. Select the *root* **Dimension** or **Attribute Dimensions** folder, click the **Actions** button, , and then select **Refresh Database** from the drop-down menu.

The **Refresh Database** dialog box is displayed.

In the following example, the **Dimensions** folder is selected, and in the **Actions** drop-down menu, **Refresh Database** is selected.



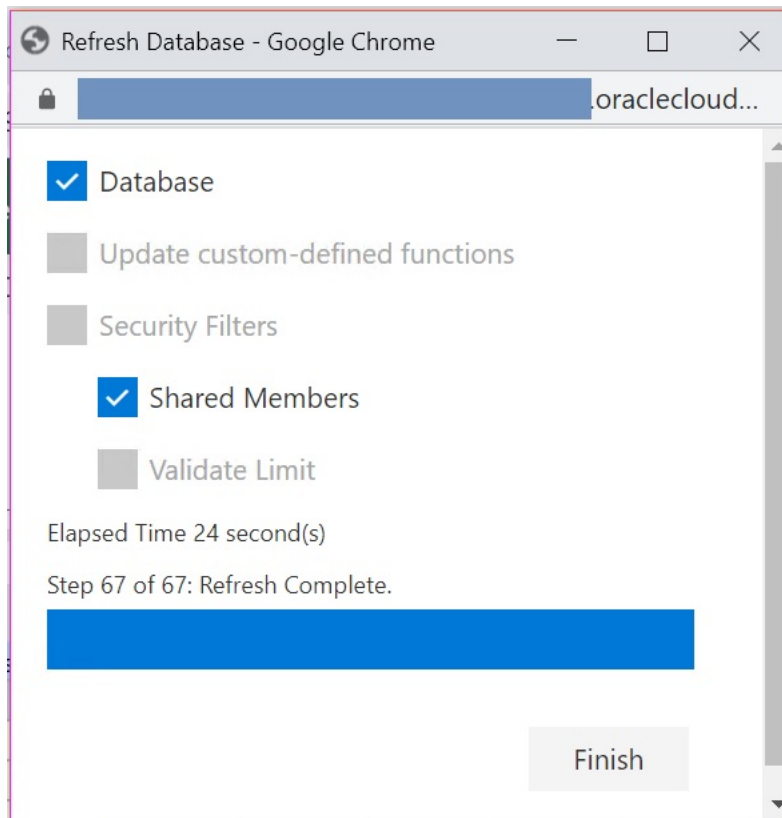
 **Tip:**

The database refresh cannot be completed while a rule type job is running or in progress. Check the Job Console, either in the web or in Oracle Smart View for Office (Mac and Browser), for any jobs running against the database. When all jobs are complete, then perform the database refresh.

4. Select the **Database** check box, and then click **Refresh**.

In the following illustration, the **Database** and **Shared Members** check boxes are selected. Other options that can be selected for refresh are:

- Update custom-defined functions
- Security filters
- Validate limits



A progress bar is displayed, indicating the percentage of steps completed for the refresh or create operation.

5. Click **Finish** to close the dialog.

## Planning Admin Extension and Office AutoCorrect

### Note:

The information in this topic applies to the Planning Admin Extension on the Windows-based version of Oracle Smart View for Office; this information does not apply to the Planning Admin Extension in Oracle Smart View for Office (Mac and Browser).

In the Planning Admin Extension on Windows-based versions of Excel, Office AutoCorrect can affect member editing in Smart View.

When editing member properties, such as member names, member descriptions, aliases, or member formulas of the data type Text, you may have names that begin with two initial capital letters; for example

DGreen

Excel will autocorrect this name to one initial capital; for example:

Dgreen

In Excel, you can set an AutoCorrect option to retain two initial capital letters in a name.

To retain two initial capital letters in a name:

1. In Excel, access the **Excel Options** dialog.
2. Select **Proofing**, and then click the **AutoCorrect Options** button.
3. In the **AutoCorrect** dialog, clear the **Correct Two Initial Capitals** check box.
4. Click **OK** to close the **AutoCorrect** dialog, and then click **OK** to close the **Excel Options** dialog.

The change takes effect immediately. There is no need to restart Excel.

# Part V

## Using Tools

### Related Topics

- [Customizing Your Display](#)
- [Working with Variables](#)
- [Announcing Upcoming Events](#)
- [Managing Access Control](#)
- [Setting the Daily Maintenance Process Time](#)
- [Using Migration](#)
- [Cloning Your Environment](#)
- [Auditing Tasks and Data](#)
- [Setting User Preferences](#)

## Customizing Your Display

To customize your Enterprise Profitability and Cost Management display:

1. From the Home page, select **Tools**, and then **Appearance**.
2. Choose from the following customization options:
  - **Logo Image:** You can replace the default Oracle logo with your own image. Select **File** to choose a locally-stored custom image file, or select **URL** to choose a custom image URL. Only secured URLs are supported. The URL must begin with "https" rather than "http." Supported graphic formats are .jpg, .png, or .gif, and the file upload is limited to 5MB. To avoid distortion, the logo image must be 113px by 32px or an equivalent ratio. Select **Predefined** to use the default Oracle logo.
  - **Background Image:** You can replace the default watermark with appears in the background with your own image. Select **File** to choose a locally stored custom image file, or select **URL** to choose a custom image URL. Only secured URLs are supported. The URL must begin with "https" rather than "http." Supported graphic formats are .jpg, .png, or .gif, and the file upload is limited to 5MB. Select **Predefined** to use the default background image.

The default size for the background image is 1024x768. You can use a larger background image; however, the image is scaled to fit the resolution setting of your display and the image is centered horizontally. If you want your background image to fit both a browser and a mobile device, Oracle recommends that you size the image so that it fits your biggest screen (or highest resolution device).

- **Display Business Process Name:** By default, **Enterprise Profitability and Cost Management** is displayed next to the logo on the Home page and on the tab when a browser tab is opened. If No is selected, the business process name is hidden on the Home page and Oracle Applications is displayed on browser tabs.

3. Click **Save** to save your selections.

# Working with Variables

## Related Topics

- [Working with Substitution Variables](#)
- [Working with User Variables](#)

## Working with Substitution Variables

### Related Topics

- [About Substitution Variables](#)
- [Creating and Assigning Values to Substitution Variables](#)
- [Deleting Substitution Variables](#)

## About Substitution Variables

Substitution variables act as global placeholders for information that changes regularly. For example, you could set the current month member to the substitution variable `CurMnth` so that when the month changes, you need not update the month value manually in the form or the report script. You create and assign values to substitution variables within the application. These substitution variables are then available in the application when you select members for a form.



### Note:

If you migrated an application that uses Global variables, you can view, but not edit, them in the application.

## Creating and Assigning Values to Substitution Variables

To create a substitution variable and assign values to it:

1. From the Home page, select **Tools**, and then **Variables**.
2. Select the **Substitution Variables** tab.
3. Click **+**.  
A new variable is added to the bottom of the list.
4. Scroll to the bottom of the list, click the down arrow next to the **Cube** name for the newly added variable, and then select the cube.
5. For **Name**, enter the name of the substitution variable (up to 80 characters).
6. For **Value**, enter a value for the substitution variable (up to 255 characters).

 **Note:**

- You can specify a range of values when defining substitution variables; for example, FY16:FY18.


You can define a substitution variable range for base members and parent members. For base members, you can use a single colon (:) or a double colon (::) as delimiters; for example, SunEnT 110::111. However for parent members, you can only use a single colon (:).

- If the substitution variable will be used in data export job definitions for block storage cubes and the member name is numeric only, the member name must be placed in double quotation marks in the **Value** field; for example, "1100" or "000". The double quotation marks aren't necessary for alphanumeric member names; for example, a1110. However if this variable will be selected in data export job definitions for aggregate storage cubes, you can't place the member name in double quotation marks in the **Value** field. Therefore if you need to use the same member name in substitution variables for data export jobs defined for both types of cubes, you must define two different substitution variables; one with quotes and one without

7. Click **Save**.

## Deleting Substitution Variables

To delete substitution variables:

1. From the Home page, select **Tools**, and then click **Variables**.
2. Select the **Substitution Variables** tab.
3. Next to the substitution variable you want to delete, click .
4. To confirm deletion, click **Yes**.

## Working with User Variables

### Related Topics

- [About User Variables](#)
- [Creating User Variables](#)
- [Managing User Variables](#)
- [Setting Limits for User Variables on Forms](#)
- [Deleting User Variables](#)

## About User Variables

User variables act as filters in forms, enabling users to focus only on certain members, such as a department. Before you can associate a user variable with a form, you must create the user variable. When you create forms with user variables, users must first select values in preferences for the variable before opening forms. Afterward, users can change the variable

on the form only if it's a dynamic user variable. Otherwise, they must continue to set the variable in preferences. For example, if you create a user variable called Division, users must select a division before working in the form.



 **Tip:**

Attributes are another way to filter forms. But instead of explicitly filtering by an attribute (like Red), you can create a user variable for the attribute dimension, and then use the user variable as the filter. Then you can enable the user variable as a dynamic user variable which allows users to change the value of the filter at runtime. This is a useful technique that allows for dynamic filtering.

The first time users select a variable for a form, they must do so in preferences. After that, they can update the variable in preferences or in the form.

## Creating User Variables

To create user variables:

1. From the Home page, select **Tools**, and then **Variables**.
2. Select the **User Variables** tab.
3. Click  .  
A new variable is added to the bottom of the list.
4. Scroll to the bottom of the list and click the down arrow next to the **Dimension** name for the newly added variable. For **Select Dimension**, select the dimension for which to create a user variable (including attribute dimensions).
5. In the **User Variable Name** column, enter the name of the user variable.
6. Click  to select dimension members.

 **Note:**

The **Use Context** setting means the value can't be chosen by the user from user preferences. Instead, the value is passed from another form based on its Point of View context and the value will change dynamically based on the context of the form. However if the user variable is used elsewhere, such as in rows and columns, you must create a different user variable so the user can set its own value for it because it won't be set dynamically.

7. Click **OK**.

You can now associate the user variable with a form, and you can also set limits for user variables on forms. See [Setting Limits for User Variables on Forms](#). Afterward, users can select members for the user variable.



## Managing User Variables

You can set user variables to limit the number of members displayed on a form, helping users focus on certain members. For example, if you create a user variable called Division for the Entity dimension, users can select a member for their own division. You can create any number of user variables for each dimension (including attribute dimensions), and select user variables for any axis in the form.

The typical sequence of steps:


1. If necessary, create the appropriate parent-level members in the dimension outline.
2. Define user variables for each dimension you want users to be able to filter (including attribute dimensions).
3. When designing the form, associate the user variable with the form.
4. Instruct users to select a member for the user variable associated with the form.

Before users can open forms that have user variables, they must select a member for User Variable Options in preferences. After selecting an initial value, they can change it in the form or in preferences.

## Setting Limits for User Variables on Forms

You can limit which members users can see or select on individual forms by limiting their member selections for a user variable. The user variable limit applies the restriction to all users at the form level, regardless of their access permissions. In addition to setting the limits by members, Service Administrators can select limits by function (for example, "IChildren(Existing Employees)").

To set up user variable limits:

1. During form design, select **Enable Dynamic User Variables** to allow dynamic user variables in the form.
2. Create a user variable.  
See [Creating User Variables](#).
3. In the **User Variable Definition** field on the **Variables** page under the **User Variables** tab, click , and add or remove members to set limits.

To select members by function, click  and select from the available options.


4. In the form designer, assign the user variable to the page axis.

## Deleting User Variables

You can delete user variables if they are not associated with a form. If you attempt to delete a user variable that is used in a form, you'll see an error message saying it cannot be deleted. The message will also provide the names of the forms where the user variable is used.

To delete user variables not associated with forms:



1. From the Home page, select **Tools**, and then **Variables**.
2. Select the **User Variables** tab.

3. Next to the user variable you want to delete, click .
4. To confirm deletion, click **Yes**.

## Announcing Upcoming Events

Create and send announcements to alert users about upcoming events, such as system maintenance or the running of jobs. Announcements are displayed in the Announcements area on the Enterprise Profitability and Cost Management Home page.

To create an announcement:

1. From the Home page, select **Tools**, and then **Announcements**.
2. Click **Create**, and enter the following information:
  - A subject that summarizes the purpose of the announcement.
  - The start date (when to send the announcement). The end date is optional.
  - The content. You may need to select an editing mode (  Rich Text or  Source Code) first.
3. Click **Save and Close**.

## Managing Access Control

Assign application-specific roles to groups and users.

To open Access Control:

1. From the Home page, select **Tools**, and then **Access Control**.
2. In **Manage Groups**, click **Create**.
3. In **Create Group**, complete these steps:
  - a. In **Name**, enter a unique group name (maximum 256 characters).

Group names are not case-sensitive. Oracle Enterprise Performance Management Cloud does not allow you to create groups with names identical to predefined role names (Service Administrator, Power User, User or Planner, and Viewer).
  - b. **Optional**: Enter a group description.
4. **Optional**: Add groups to create a nested group.
  - a. In **Available Groups**, search for groups.

Groups that match the search criterion are listed under **Available Groups**.
  - b. From **Available Groups**, select the member groups for the new group.
  - c. Click **Move**.

The selected groups are listed under **Assigned Groups**. To remove assigned groups, from **Assigned Groups**, select the group to remove, and then click **Remove**.

5. **Optional:** Add EPM Cloud users as members of the group. Only users who are assigned to a predefined role can be added as group members.
  - a. Click **Users**.
  - b. In **Available Users**, search for users
  - c. From **Available Users**, select the users to add to the group.
  - d. Click **Move**.
6. Click **Save**, and then click **OK**.



**Note:**

See [Overview of Access Control](#) in *Administering Access Control for Oracle Enterprise Performance Management Cloud*.

## Designing Custom Navigation Flows

Customize the business process interface using navigation flows. Navigation flows enable designers to control how roles or groups interact with the business process.

### Related Topics

- [Understanding Navigation Flows](#)
- [Viewing and Working with Navigation Flows](#)

## Understanding Navigation Flows

Navigation flows give business process designers control over how various roles, or groups, interact with the business process. The Navigation Flow Designer enables you to customize the business process interface. For example, you can change the names of the cards and clusters that display on the Home page and the order in which they are displayed. You can hide cards, create new cards, and group cards into clusters. You can also customize the vertical and horizontal tabs that display on a card.

### Videos

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#### Your Goal

View the highlights of customizing workflows for connected environments.

#### Watch This Video



[Overview: Configure Navigation Flows to Integrate EPM Cloud Business Processes](#)

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### Related Topics

- [What Can Be Customized in the Business Process Interface?](#)
- [Navigation Flow Customization Categories](#)
- [Navigation Flow Permissions](#)
- [Predefined Navigation Flows](#)

- [Viewing and Working with Navigation Flows](#)

## What Can Be Customized in the Business Process Interface?

Navigation flows are made up of cards. Each card contains content with information that is displayed as one or more tabbed pages. The content included on cards can be URLs or artifacts such as forms, dashboards, reports. Cards can be grouped into clusters.

### Note:

If Dashboard 2.0 and Forms 2.0 are enabled in your business process:

- Navigation flows support the features included in Dashboard 2.0 and Forms 2.0, including the ability to edit a form from within the runtime dashboard, and editing it with or without data. Dashboard 2.0 component actions such as **Open Form** and **Edit Form** also work directly within the navigation flow.
- If a dashboard contains multiple components, when you edit a dashboard from within a navigation flow, the focus will be set to the last component in the dashboard.

Navigation flows can be customized in the following ways:

- Labels for cards or tabs
- Icons that are used for cards or tabs
- Hide and unhide cards and tabs
- Display order of cards and tabs
- Add new cards
- Add existing cards
- Add new horizontal or vertical tabs
- Remove navigation flows, cards, and tabs
- Group cards into clusters
- Add existing clusters

See [Viewing and Working with Navigation Flows](#).

## Navigation Flow Customization Categories

Navigation flows are categorized as follows for customization:

1. **Global:** Navigation flows are seen by all users
2. **Role:** Navigation flows are seen only by users in a specific role; for example, Service Administrator or Power User
3. **Group:** Navigation flows are seen only by users belonging to a specific group; for example, Sales

Navigation flows can be defined at any of these levels. In cases where navigation flows exist at multiple levels, updates are applied in the order of highest (global) to lowest (groups).

For example, if you create a navigation flow that displays an icon on the Home page named "My Tasks", and then another Service Administrator duplicates the navigation flow, makes the following changes to the card, and then associates the navigation flow with a group:

- At the global level, they rename "My Tasks" to "Company Tasks"
- At the group level, for a group named Sales, they rename "My Tasks" to "Sales Tasks"

Users who belong to the group called Sales will see the label "Sales Tasks" in the navigation flow instead of "My Tasks," and all other users will see the label "Company Tasks".

## Navigation Flow Permissions

The business process offers three levels of permissions for navigation flows:

- Role-based: Permissions are granted to users or groups assigned to a specific role; for example, a User will see different cards displayed on the Home page than a Service Administrator
- Artifact-based: Permissions are granted to users or groups who can see certain artifacts; for example, a User will see only the forms to which they have been assigned permission
- Global: Permissions are granted to all users

## Predefined Navigation Flows

The business process comes with one predefined navigation flow, called Default. The Default navigation flow is read only; therefore, you can't make any modifications to it.

These are the operations you can and cannot perform on the Default navigation flow:

- Name: You can't modify the name.
- Delete: You can't delete the navigation flow.
- Edit: You can view the navigation flow details, but you can't change anything.
- Activate or Deactivate: You can activate or deactivate the navigation flow.
- Duplicate: You can make a copy of the navigation flow.

## Understanding Navigation Flow Status after Import

When you import a snapshot containing an active navigation flow into an environment containing an active navigation flow of the same category (role, group, or global), then the new navigation flow being imported is deactivated.

For example, the following navigation flows are currently active on your system:

- NF Sales Q2 (Sales group)
- NF Administrator (Service Administrator role)
- NF Custom Default (global)

Let's say you import a navigation flow called NF Sales Q3, which uses the same Sales group as NF Sales Q2. The NF Sales Q3 navigation flow will be imported as inactive and the existing NF Sales Q2 will remain active for the Sales group. If you want the new NF Sales Q3 to be active, you must manually activate it (which will inactivate the old NF Sales Q2). We

deactivate the imported Q3 navigation flow because the import might occur ahead of the Q3 start date, and we want to ensure the Q3 navigation flow isn't activated before the Q3 start date.

If a new application is created from a Migration snapshot that includes an active custom global navigation flow (for example, NF Custom), the NF Custom global navigation flow will become inactive after Migration import. The same is true if the application is cloned. The Default global navigation flow will become the active global navigation flow and you'll need to ensure you activate the global NF Custom navigation flow after the new application is created. If all users are using the NF Custom global navigation flow, they might experience a service interruption until the NF Custom navigation flow is activated.

When designing navigation flows:

- Create navigation flows for specific groups or classes of users. Then associate the navigation flow to corresponding user groups.
- Avoid creating one global navigation flow for all users.

## Viewing and Working with Navigation Flows

Users assigned the Service Administrator role can view all navigation flows, including the predefined navigation flow, on the Navigation Flows page. Users assigned to other roles and groups will only see the navigation flows to which they have access.

The Navigation Flow page lists each navigation flow by name, indicates the role or the group that has access to the navigation flow (if assigned), and provides a description of the navigation flow (if provided). The listing also indicates whether the navigation flow is active or not.


### Viewing Navigation Flows

To view the Navigation Flow page:

1. On the Home page, click **Tools**.
2. Click **Navigation Flows**.

### Working with Navigation Flows

To work with a navigation flow, perform an action:

- For design best practices and considerations, see [Navigation Flow Design Best Practices and Naming Considerations](#).
- To create and duplicate navigation flows, see [Creating and Duplicating Navigation Flows](#).
- To edit a navigation flow, see [Editing a Navigation Flow](#).
- To activate or deactivate a navigation flow, see [Activating and Deactivating Navigation Flows](#).
- To validate navigation flows and to learn how to find and resolve navigation flow elements with missing artifacts, see [Using Validate to Find Missing Artifacts in Navigation Flows](#).
- To resolve a navigation flow in the listing that is displaying a warning icon , see [Resolving Navigation Flows that Display a Warning Icon](#).

- To rename cards and tabs, see [Customizing Labels for Cards, Tabs, and Clusters](#).
- To customize the graphics used for cards and tabs, see [Customizing Icons for Cards and Vertical Tabs](#).
- To hide and unhide cards and tabs, see [Hiding and Unhiding Clusters, Cards, and Tabs](#).
- To change the display order of cards on the Home page, see [Changing the Display Order of Cards on the Home Page](#).
- To add cards, see [Adding Cards](#).
- To add tabs, see [Adding Tabs to a Tabular Page](#).
- To remove navigation flows, cards, and tabs, see [Removing Navigation Flows, Cards, and Tabs](#).
- To group cards into clusters, see [Grouping Cards into Clusters](#).

### Troubleshooting

For help with resolving navigation flow issues, see *Handling Issues with Navigation Flows in Oracle Enterprise Performance Management Cloud Operations Guide*.

## Navigation Flow Design Best Practices and Naming Considerations

### Design Best Practices

To provide an optimal user experience and to avoid excessive scrolling on the Home page and within cards and tabs, you must adhere to the following guidelines when designing navigation flows:

- Keep the top level items (cards and clusters) to no more than 16 visible items.
- Add no more than 16 visible cards to a cluster.
- Add no more than 10 visible vertical tabs within a card.
- Add no more than 20 visible sub tabs (horizontal tabs) within a vertical tab.
- Label names on sub tabs (horizontal tabs) display only the first 30 characters at runtime. Hovering your cursor over the tab reveals the entire label.



#### Note:

If you attempt to exceed the visibility limits, you will see a warning message telling you that you've exceeded the limit.

### Naming Considerations

There are naming restrictions for navigation flows, cards, clusters, tabs, and infolets (if your business process uses infolets) in navigation flows. You cannot use these special characters:


- ampersand ( & )
- less than sign ( < )
- greater than sign ( > )
- quotation mark ( " )

- backslash ( \ )
- plus sign ( + )

## Creating and Duplicating Navigation Flows

To create a navigation flow, you must first select an existing navigation flow and make a copy of it. Then edit the duplicate navigation flow details and save them.

To create and duplicate a navigation flow:

1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. In the upper right-hand corner of the page, click , and then select **Create Copy**.
3. Enter a name for the navigation flow, and then click **OK**.

### Note:

Ensure that you adhere to the navigation flow naming restrictions outlined in [Navigation Flow Design Best Practices and Naming Considerations](#).

4. Edit details for the navigation flow. See [Editing a Navigation Flow](#).

### Note:

New flows are marked **Inactive** until they are activated by the Service Administrator. To activate a navigation flow, see [Activating and Deactivating Navigation Flows](#).

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

## Editing a Navigation Flow

To edit a navigation flow:


1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. Click the name of the navigation flow you want to edit.

### Note:

The predefined navigation flow isn't editable. However, you can create a copy of a predefined navigation flow and edit the copy. See [Predefined Navigation Flows](#).



You'll see a page listing the cards and clusters in the navigation flow. On this page you can edit the role or group assignment, designate which clusters and cards are visible on the Home page, change the order in which the navigation flow clusters and cards are displayed, add cards to clusters or remove them, and remove clusters and cards from the navigation flow.

- **Assign To:** Click  to assign the navigation flow to a group of users or to a role.
- **Visible:** Edit the visibility of the navigation flow clusters and cards on the Home page by selecting or deselecting them in the **Visible** column.

 **Note:**

Ensure that you adhere to the navigation flow guidelines for visibility outlined in [Navigation Flow Design Best Practices and Naming Considerations](#).

- **Order:** Clusters and cards are listed in the order in which they are displayed on the Home page, if visible. Selecting an up or down arrow option repositions the clusters and cards in the listing and changes the display order of the clusters and cards on the Home page. Selecting the right arrow moves a card into a cluster.
  - **Remove:** Removes the cluster or card from the navigation flow.
3. Click a cluster or card to edit details. For descriptions of card details, see the following topics:
- [Adding Cards](#)
  - [Adding Tabs to a Tabular Page](#)

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

## Activating and Deactivating Navigation Flows

You can create multiple navigation flows for each category (global, role, or group), but only one navigation flow can be active in each category. Whenever you make a navigation flow active, the other navigation flows in the same category will become inactive.

 **Note:**

Each business process requires one active global navigation flow. To make a different global navigation flow active, select another global navigation flow and activate it.

For information about categories, see [Navigation Flow Customization Categories](#).

These are the operations users can and cannot perform on an active navigation flow:


- Name: Users can't modify the name.
- Delete: Users can't delete the navigation flow.
- Edit:

- Users can view the navigation flow definition, but they can't change anything.
- If the business process is in administration mode, then users can save any modifications.
- **Activate or Deactivate:** Users can activate or deactivate a navigation flow.
- **Duplicate:** Users can make a copy of a navigation flow.


To activate or deactivate a navigation flow:

1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. In the **Active** column, click **Active** or **Inactive**. An active flow will be marked inactive. Conversely, an inactive flow will be marked active.




## Using Validate to Find Missing Artifacts in Navigation Flows

While viewing the Navigation Flow listing, you might see navigation flow nodes or artifacts displaying an error icon . This error occurs because artifacts that were associated with the navigation flow were either renamed or removed and they are now considered missing. You'll need to edit the navigation flow to associate it with either a renamed artifact or with a different artifact before you can activate the navigation flow. You might not realize that artifacts are considered missing, so it's recommended that you validate your navigation flows before setting them to Active status.

### **Note:**

To resolve a navigation flow displaying a warning icon , see [Resolving Navigation Flows that Display a Warning Icon](#).


To validate navigation flows to find missing artifacts and reassociate them:

1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. If they aren't already deactivated, set the navigation flows you want to validate to **Inactive** status. See [Activating and Deactivating Navigation Flows](#).
3. Highlight the row or rows of the navigation flows you want to validate.
4. Click , and then select **Validate**.  
If artifacts are missing, you'll see an error message indicating which navigation flows are referencing artifacts that cannot be found.
5. Click the name of each navigation flow with the error, and then expand the nodes which display the error icon  until you reach the Manage page which displays the missing artifact.
6. For **Artifact**, click  to select the renamed artifact or a different artifact in the Artifact Library.
7. Click **Save and Close**.


8. Repeat the validation on your navigation flows and drill down to make corrections, as needed, until you see a message indicating the navigation flows are valid.
9. Activate the navigation flows. See [Activating and Deactivating Navigation Flows](#).

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).



## Resolving Navigation Flows that Display a Warning Icon

While viewing the Navigation Flow listing, you might see a navigation flow displaying a warning icon . This occurs because the group that was associated with the navigation flow was deleted. You'll need to edit the navigation flow to associate it with a group or role before you can activate the navigation flow.

### Note:

To resolve navigation flows displaying an error icon , see [Using Validate to Find Missing Artifacts in Navigation Flows](#).

To resolve the navigation flow:

1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. Click the name of the navigation flow displaying the warning icon .
3. For **Assign To**, click  to assign the navigation flow to a group of users or to a role, then click **Save and Close**.
4. Activate the navigation flow. See [Activating and Deactivating Navigation Flows](#).

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

## Customizing Labels for Cards, Tabs, and Clusters

You can customize the labels for cards (the icons that display on the Home page), tabs, and clusters. Labels are limited to 25 characters or less. For vertical tabs, there is no character limitation since the label for vertical tabs displays as hover text.

### Note:

Do not update the labels for cards, tabs, or clusters against the Default navigation flow. Only customize labels for custom navigation flows.

To customize labels for cards, tabs, and clusters:

1. Open the **Navigation Flow** page and click the name of the navigation flow you want to edit. See [Viewing and Working with Navigation Flows](#).
2. If customizing the label for a card or cluster:
  - a. Click the name of the card or cluster you want to edit.



- The **Tools** cluster and these icons in the **Tools** cluster:
  - **Access Control**
  - **Navigation Flows**
  - **Daily Maintenance**
  - **Migration**

Ensure that you adhere to the navigation flow guidelines for visibility outlined in [Navigation Flow Design Best Practices and Naming Considerations](#).

To hide and unhide clusters, cards, and tabs:

1. Click the **Navigation Flow** icon and click the name of the navigation flow you want to edit. See [Viewing and Working with Navigation Flows](#).
2. Edit the Home page visibility of the navigation flow clusters and cards by selecting or deselecting them in the **Visible** column.
3. If hiding or un hiding a tab:
  - a. Click the name of the card you want to edit.
  - b. In the tab listing on the **Manage Tab** page, select or deselect the check box in the **Visible** column.

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

## Changing the Display Order of Cards on the Home Page

You can change the display order of cards in the Navigation Flow Designer. Cards display on the Home page in the order they appear within the listing

To change the display order of the cards on the Home page:

1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. In the listing, use the up and down arrows in the **Order** column to move cards up or down in the navigation flow order.

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).


## Adding Cards


The icons you see on the Home page represent cards. Cards are specific to each functional area of the business process. Each card navigates users to the corresponding area, where other information is displayed as one or more tabbed pages. You can create single page or multiple page (tabular) cards.

To ensure an optimal user experience, review the navigation flow design best practices. See [Navigation Flow Design Best Practices and Naming Considerations](#).

You can also group cards into clusters. See [Grouping Cards into Clusters](#).

To add cards to a navigation flow:

1. Open the **Navigation Flow** page and click the name of the navigation flow you want to edit. See [Viewing and Working with Navigation Flows](#).
2. To add an existing card to the navigation flow, right-click a card or cluster in the list (or click ) , click **Add Existing Card/Cluster**, and then select a card. If there is an existing

card you want to add from another environment, right-click a card or cluster in the list (or click ) , click **Add Existing Card/Cluster**, select the target environment under **My Connections**, and then choose the card you want to add to your navigation flow.

Note the following:

- Cards can't be directly selected from Narrative Reporting and Profitability and Cost Management using the **Add Existing Card/Cluster** option.
- Cards that are added from another navigation flow or from another environment will display the localized labels that were defined in the source navigation flow. To update the card labels in your navigation flow, on the Home page, click **Tools**, and then click **Artifact Labels**.


See Specifying Artifact Labels.

- A reference card is a card that is already referenced from another navigation flow. References to already referenced cards are not supported in navigation flows and will not be available for selection in the Object Library when adding an existing card; for example:
  - A card referring to a remote artifact or remote tab will not be available from the Object Library when adding an existing card.
  - A card referring to a tab from another navigation flow will not be available from the Object Library when adding an existing card.

A card is added to the list as a sibling under the card or cluster that is currently selected. To add a card to a cluster, see [Grouping Cards into Clusters](#).

 **Note:**


Cards that are added without first selecting a card or cluster are added to the end of the list.

3. To add a new card to the navigation flow, right-click a node in the list (or click ) , click **Add Card**, and then select details for the new card:

**Table 1 New Card Details**

Label	Description
<b>Name</b>	Enter a label for the card. Ensure that you adhere to the naming restrictions outlined in <a href="#">Navigation Flow Design Best Practices and Naming Considerations</a> .
<b>Visible</b>	Select whether the card is visible to users on the Home page.
<b>Cluster</b>	If clusters exist, select a cluster for the card or select <b>None</b> .
<b>Icon</b>	Select the graphic that will be displayed for the card you're creating. Choose from the available graphics provided in the graphics library.
<b>Page Type</b>	Select <b>Single Page</b> or <b>Tabular Page</b> format.

**Table 1 (Cont.) New Card Details**

Label	Description
<b>Content Source</b>	<p>If you selected the <b>Single Page</b> format, select <b>Artifact</b> or <b>URL</b>:</p> <ul style="list-style-type: none"><li>For <b>Artifact</b>, click  to select an artifact in the Artifact Library; for example, if the artifact is a form, then select the specific form from the artifact listing. Available artifacts include forms, dashboards, and reports. To select an artifact from another environment, select the target environment under <b>My Connections</b>, and then choose the artifact you want to add.</li><li>For <b>URL</b>, enter a complete URL; for example, a URL to embed an Oracle Analytics Cloud dashboard in a card, then click <b>Preview</b> to validate the URL in a popup window.</li></ul> <p>Insert only external site URLs starting with the <code>https://</code> security protocol. Don't use internal or relative URLs or URLs for unconsenting third-party sites. See <a href="#">About Using URLs to Embed Third-Party Pages in EPM Cloud Applications</a>.</p>
<b>Orientation</b>	<p>If you selected the <b>Tabular Page</b> format, select <b>Vertical</b> or <b>Horizontal</b>, and then add new or existing tabs and sub tabs. See <a href="#">Adding Tabs to a Tabular Page</a>.</p>

A card is added to the list as a sibling under the card or cluster that is currently selected. To add a card to a cluster, see [Grouping Cards into Clusters](#).

 **Note:**

Cards that are added without first selecting a card or cluster are added to the end of the list.

4. Click **Save and Close**.

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

## Adding Tabs to a Tabular Page

Tabs can be horizontal or vertical. For example, the **Valid Intersections** card (under the **Application** cluster) is a tabular page with two horizontal tabs: **Setup** and **Reports**.


 **Note:**

If Redwood Experience is enabled, the **Setup** and **Reports** tabs are at the bottom of the page.

You can also create tabular pages with vertical tabs. Vertical tabs display a graphic and text appears when the cursor is hovered over the tab. Horizontal tabs display labels with text only or text with icons.

To ensure an optimal user experience, review the navigation flow design best practices. See [Navigation Flow Design Best Practices and Naming Considerations](#).

To add tabs to a tabular page:

1. Open the **Navigation Flow** page and click the name of the navigation flow you want to edit. See [Viewing and Working with Navigation Flows](#).
2. Edit an existing card by clicking the name of the card you want to edit, or add a new card by right-clicking a card (or clicking ) , and then clicking **Add Card**.
3. On the **Manage Card** page, select the following options:
  - For **Page Type**, select **Tabular Page**.
  - For **Orientation**, select **Vertical** or **Horizontal**.


A tab listing displays at the bottom of the **Manage Card** page.

4. To edit an existing tab, click a tab name from the tab listing, and edit tab details.
5. To add a new or existing tab:
  - a. To add an existing tab, right-click a tab in the listing at the bottom of the **Manage Card** page, click **Add Existing Tab** (or click the **Add Existing Tab** button), select a tab from the Object Library, and then click **OK**.

 **Note:**

A reference tab is a tab that is already referenced from another navigation flow. References to already referenced tabs are not supported in navigation flows and will not be available for selection in the Object Library when adding an existing tab; for example:

- A tab referring to a remote artifact or remote sub-tab will not be available from the Object Library when adding an existing tab.
- A tab referring to a sub tab from another navigation flow will not be available from the Object Library when adding an existing tab.

- b. To add a new tab, right-click a tab, click **Add New Tab** (or click the **Add New Tab** button), and then edit tab details.
- c. Select the content for the new tab:
  - For **Artifact**, click  to select an artifact in the Artifact Library; for example, if the artifact is a form, then select the specific form from the artifact listing. Available artifacts include forms, dashboards, and reports. To select an artifact from another environment, select the target environment under **My Connections**, and then choose the artifact you want to add.
  - For **URL**, enter a complete URL; for example, a URL to embed an Oracle Analytics Cloud dashboard in a tab, then click **Preview** to validate the URL in a popup window.




Insert only external site URLs starting with the `https://` security protocol. Don't use internal or relative URLs or URLs for unconsenting third-party sites. See [About Using URLs to Embed Third-Party Pages in EPM Cloud Applications](#).

A tab is added to the list as a sibling under the tab that is currently selected.

 **Note:**

Tabs that are added without first selecting a tab are added to the end of the list.

6. To add new or existing sub tabs to a tab:
  - a. Click the name of a tab in the in the tab listing.
  - b. For **Page Type**, select **Tabular Page**.
  - c. Right-click a tab, and click **Add New Sub Tab** or **Add Existing Sub Tab** (or click the **Add New Sub Tab** or **Add Existing Sub Tab** button), and then edit sub tab details.
  - d. Select the content for the new sub tab:
    - For **Artifact**, click  to select an artifact in the Artifact Library; for example, if the artifact is a form, then select the specific form from the artifact listing. Available artifacts include forms, dashboards, and reports. To select an artifact from another environment, select the target environment under **My Connections**, and then choose the artifact you want to add.
    - For **URL**, enter a complete URL; for example, a URL to embed an Oracle Analytics Cloud dashboard in a sub tab. Click **Preview** to validate the URL in a popup window.

Insert only external site URLs starting with the `https://` security protocol. Don't use internal or relative URLs or URLs for unconsenting third-party sites. See [About Using URLs to Embed Third-Party Pages in EPM Cloud Applications](#).

A sub tab is added to the list as a sibling under the tab that is currently selected.

 **Note:**

Sub tabs that are added without first selecting a tab are added to the end of the list.

7. Click **Save and Close**.

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

 **Note:**

- For cards with multiple tabs or sub tabs, the last tab accessed by a user will be retained the next time the user accesses the card in the same session. If the user logs out and then logs back in, the default tab will be displayed.
- Tabs or sub tabs that are added from another navigation flow or from another environment will display the localized labels that were defined in the source navigation flow. To update the tab labels in your navigation flow, on the Home page, click **Tools**, and then click **Artifact Labels**.

See Specifying Artifact Labels.

## About Using URLs to Embed Third-Party Pages in EPM Cloud Applications

Oracle Enterprise Performance Management Cloud uses IFrame to embed third-party URLs. IFrame requires that the page that is being embedded must give approval to the page that is embedding it. For example, if we want to embed a page from sharepoint.com into an EPM Cloud application, then sharepoint.com must allow oraclecloud.com to embed the page from sharepoint.com.

This can be achieved by adding oraclecloud.com in the [Content Security Policy](#) of the web application whose page you need to embed.

When embedding a third-party page you also must consider if the page is available to the public or if it requires a login. For example, pages from wikipedia.org do not need any authentication.

If you are embedding a page that requires authentication, you need to see if SSO can be enabled for the page. If not, then your page may not load inside IFrame. As a workaround, log in to that web application in another browser tab, and then if you access the same page from the EPM Cloud application, it will open.

This URL support feature allows you to embed the following types of pages:

- Other Oracle products (would need to enable SSO)
- Web applications owned by customer (would need to allow the EPM Cloud application by updating the Content Security Policy and enabling SSO, or likewise)
- Pages from the public domain (for example, wikipedia.org)

 **Note:**

Though not supported by Oracle, you can also embed links to the following resources within navigation flow cards, tabs, and sub tabs:

- Google Sheets
- Files stored in Google Drive (for example, PDF and Excel)
- Files stored in Microsoft Office 365


Use the instructions provided by the third-party sites to generate a URL which can then be used in your EPM Cloud application.

## Removing Navigation Flows, Cards, and Tabs

You can't remove the following navigation elements:



- The **Application** cluster and the **Settings** icon in the **Application** cluster.
- The **Tools** cluster and these icons in the **Tools** cluster:
  - **Access Control**
  - **Navigation Flows**
  - **Daily Maintenance**
  - **Migration**

To remove navigation flows, cards, and tabs:

1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. If removing a navigation flow:
  - a. Select the navigation flow you want to remove.
  - b. In the upper right-hand corner of the page, click , and then select **Delete**.

 **Note:**

You can't delete the predefined navigation flow, called Default.

3. If removing a card:
  - a. Click the name of the navigation flow you want to edit.
  - b. In the **Remove** column for the card you want to remove, click .
4. If removing a tab:
  - a. Click the name of the navigation flow you want to edit.
  - b. Click the name of the card you want to edit.
  - c. In the tab listing at the bottom of the **Manage Tab** page, in the **Remove** column for the tab you want to remove, click .


To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

## Grouping Cards into Clusters

A cluster is a grouping of cards. You must first create a cluster and then you can assign cards to it. You can also add existing clusters to navigation flows.

To ensure an optimal user experience, review the navigation flow design best practices. See [Navigation Flow Design Best Practices and Naming Considerations](#).

To assign cards to clusters:

1. Create a new cluster or add an existing cluster:
  - a. Open the **Navigation Flow** page and click the name of the navigation flow in which you want to add a cluster. See [Viewing and Working with Navigation Flows](#).
  - b. To create a new cluster, right-click a card or cluster in the list (or click ) , click **Add Cluster**, enter or select the cluster details, and then choose a graphic for the cluster.



 **Note:**

Ensure that you adhere to the visibility and naming restrictions outlined in [Navigation Flow Design Best Practices and Naming Considerations](#).

A cluster is added to the list as a sibling under the cluster that is currently selected.

 **Note:**

Clusters that are added without first selecting a card or cluster are added to the end of the list.

- c. To add an existing cluster, right-click a card or cluster in the list (or click ) , click **Add Existing Card/Cluster**. If there is an existing cluster you want to add from another environment, right-click a card or cluster in the list (or click ) , click **Add Existing Card/Cluster**, select the target environment under **My Connections**, and then choose the cluster you want to add to your navigation flow.



 **Note:**

- Clusters can't be directly selected from Narrative Reporting and Profitability and Cost Management using the **Add Existing Card/Cluster** option.
- Clusters that are added from another navigation flow or from another environment will display the localized labels that were defined in the source navigation flow. To update the cluster labels in your navigation flow, on the Home page, click **Tools**, and then click **Artifact Labels**.  
See Specifying Artifact Labels.
- A reference cluster is a cluster that is already referenced from another navigation flow. References to already referenced clusters are not supported in navigation flows and will not be available for selection in the Object Library when adding an existing cluster.

A cluster is added to the list as a sibling under the card or cluster that is currently selected.

 **Note:**

Clusters that are added without first selecting a card or cluster are added to the end of the list.

- d. Click **Save and Close**.
2. Select the cards to include in the cluster using one of these options:
  - a. Navigate to the card you want to add. If the card is within another environment, first select the environment under **My Connections**, and then navigate to the card in that environment. Assign the card to a cluster using one of these options:
    - To the right of the card in the **Order** column, click  , select the cluster, and then click **OK**.
    - Click the name of the card to view the card details, then for **Cluster** select a cluster for the card, and then click **OK**.
  - b. Navigate to the cluster in which you want to add a card, then right-click the cluster (or click  ), click **Add Card In Cluster**, and then select an option:
    - Select **Add Existing Card**, to select an existing card or to add existing cards from another cluster to the selected cluster.
    - Select **Add Card**, and then enter card details to add a new card to the selected cluster.

 **Note:**

You cannot add a card to a cluster if the card or the cluster is already referenced from another navigation flow.

c. Click **Save and Close**.

The cards will appear in the listing as children of the cluster. Use the up and down arrows next to the cards to reorder the cards within the cluster, if needed.

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

## Reloading a Navigation Flow

To display design changes while you're working with a navigation flow, you can reload the navigation flow.

To reload a navigation flow after making design changes:

1. From the Home page, click the down arrow next to the user name (upper right corner of the screen).
2. On the **Settings and Actions** menu, click **Reload Navigation Flow**.


## Switching Navigation Flows at Runtime

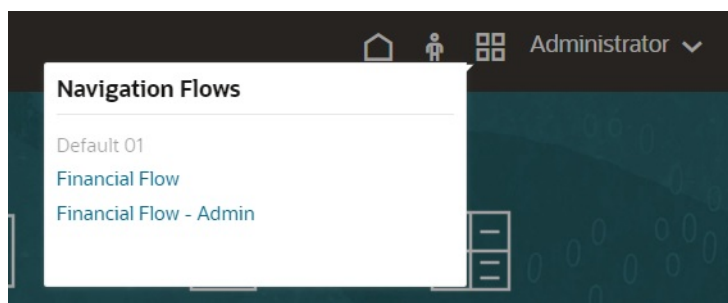
If you belong to multiple groups or if a navigation flow is assigned to a role, you might have access to more than one navigation flow.

 **Note:**

Users assigned the Service Administrator role can access all navigation flows.

To switch navigation flows at runtime:

1. From the Home page, click .
2. Select the navigation flow you want to view.



# Sharing the Current Page URL for Cards, Tabs, and Sub Tabs

Copy the URL for the currently displayed card, tab, or sub tab and share it with other users who have access.

Use the **Share Current Page URL** option on the **Settings and Actions** menu to copy the URL for the currently displayed card, tab, or sub tab in your Oracle Enterprise Performance Management Cloud business process.

URLs can be copied and then shared with other users in an email, Slack, or any other messaging application. Also, copied URLs can be used in a slide show presentation such as PowerPoint. Note that users can only access cards, tabs, or sub tabs if they are authorized to access them.

When the copied URL is launched the page will be rendered with the full header, meaning they will be able to navigate to all of the pages to which they have access within the navigation flow. If the user launching the URL is not logged in, they will be redirected to a login page, then after login the URL page will open.

To copy a URL for sharing:

1. Navigate to the page (card, tab, or sub tab) in your application that you want to copy.  
For example, from the Home page, click Dashboards to view the Dashboards page.
2. Click the down arrow next to your user name (upper right corner of the screen).
3. On the **Settings and Actions** menu, select **Share Current Page URL**.

## Note:

The **Share Current Page URL** menu option only displays if you're currently viewing a card, tab, or sub tab. If you're currently viewing the Home page, the **Share Current Page URL** menu option won't display on the **Settings and Actions** menu.

4. Select the displayed URL and copy it by pressing Ctrl+C.  
After pasting it into a browser, the URL will enable direct access to the current page in the application.

## Considerations

Note the following considerations when using the **Share Current Page URL** option:

- The page specified in the URL will not open if the navigation flow was deleted, modified, or made inactive. Instead, you'll be redirected to the home page of the currently active navigation flow.
- If you're using a classic environment, you cannot share URLs. URLs are not supported for classic pages.
- URLs cannot be embedded into dashboards as the content source.
- URLs cannot be embedded into navigation flows as the content source.
- URLs cannot be shared for pages with dynamic tabs. Dynamic tabs are local and limited to the current user session, and therefore cannot be shared.

- URLs cannot be shared for infolets. URLs are not supported for infolets.

# Setting the Daily Maintenance Process Time

Enterprise Profitability and Cost Management requires one hour every day to perform routine maintenance. Service Administrators can select (and change) the most convenient time to start the hour-long daily maintenance process. In addition to routine maintenance, Oracle applies required patches to the Enterprise Profitability and Cost Management instance during the maintenance process.

Because Enterprise Profitability and Cost Management is not available during the maintenance process, the Service Administer should identify a one-hour period when no one uses the business process. Any connected user will be logged off and will lose unsaved data.

The default maintenance start time is midnight Pacific Standard Time (PST). If you don't reset the default start time for your instance, Oracle resets it to a random time between 10:00 p.m. and 2:00 a.m. PST to reduce the business process maintenance duration.

If you want the maintenance time to start at midnight PST, you should select it using this procedure. In such cases, Oracle will not change your selection.

To manage the automated maintenance window:

1. From the **Home** page, select **Tools**, and then **Daily Maintenance**.
2. On the **Daily Maintenance** tab, in **Start Time** field, select the time at which the daily maintenance process should start, and select your time zone from the drop-down list.
3. On the **Content Update Setting** tab, specify how long after the scheduled maintenance you want to update the content. To automatically update the content, select the checkbox next to **In the future, automatically update the application content**.
4. Click **Save**.

## Scheduling Daily Maintenance

For information about daily maintenance operations and scheduling the maintenance start time for an environment, see *Managing Daily Maintenance in Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.



 **Note:**

There is a system setting called **Export EPM Cloud Smart List textual data during daily maintenance for incremental data import** that, depending on if this setting is enabled, could impact the duration of the export. For more information and for recommendations about using this setting, see *Exporting Smart List Textual Data During Daily Maintenance for Incremental Data Import* in *Oracle Enterprise Performance Management Cloud Operations Guide* .

To prevent automatic backup from failure due to scheduled jobs, Oracle Enterprise Performance Management Cloud disallows certain scheduled jobs to start while the daily maintenance process is running.

The following jobs are prevented from starting during the daily maintenance:

- Import Data
- Import Metadata
- Export Data
- Export Metadata
- Refresh Database
- Clear Cube
- Restructure Cube
- Compact Outline
- Merge Data Slices
- Optimize Aggregation

If the system prevents a job from starting, the reason will be stated in the Job Details. If you've enabled email notifications for the Job Console, you'll receive an email notification when a job does not start. If you have a job that is scheduled to start during the daily maintenance process, it is recommended that you reschedule your job to start outside of the daily maintenance window. See [Scheduling Jobs](#).

## Connecting Environments in EPM Cloud

### Related Topics

- [About Connecting EPM Cloud Environments](#)
- [Considerations for Migrating EPM Cloud Connections](#)
- [Creating, Editing, and Deleting Connections to Other EPM Cloud Environments](#)
- [Connecting to External Web Services](#)
- [Specifying Advanced Options for External Connections](#)
- [Navigating Across EPM Cloud Environments](#)
- [Customizing Navigation Flows to Access Other EPM Cloud Environments](#)
- [Using Direct URLs to Integrate Connected Environments](#)

# About Connecting EPM Cloud Environments

## Overview

Service Administrators can connect multiple EPM Cloud environments of the following types:

- Account Reconciliation
- Enterprise Profitability and Cost Management
- Financial Consolidation and Close
- FreeForm
- Narrative Reporting
- Planning
- Planning Modules
- Profitability and Cost Management
- Sales Planning
- Strategic Workforce Planning
- Tax Reporting

Once Service Administrators set up the connections, users who have access across EPM Cloud environments can navigate across them from a single access point with one login. Also artifacts such as forms and dashboards, from across environments can be co-mingled within a cluster or within tabs on a card in navigation flows. Artifacts in the target environment are accessible based on the user's role.



### Note:

You can also connect directly Oracle Analytics Cloud Enterprise Edition or Professional Edition 5.6 to EPM Cloud Platform, provided you have both services. When you've configured the connection, you can visualize data from EPM Cloud business processes in Oracle Analytics Cloud. You no longer have to model EPM data in a metadata repository (RPD) file to create visualizations and dashboards in Oracle Analytics Cloud. For more information, see the Oracle Analytics Cloud documentation.

Additionally, you can connect Oracle NetSuite Account Reconciliation and Oracle NetSuite Planning and Budgeting.

## Which environments can I connect?

The source environment is the environment from which you're creating the connection. The target environment is the environment to which you're connecting from the source environment.

You can connect these source environments (these environments can also be target environments):


- Enterprise Profitability and Cost Management

- FreeForm
- Financial Consolidation and Close
- Oracle NetSuite Planning and Budgeting
- Planning
- Planning Modules
- Sales Planning
- Strategic Workforce Planning
- Tax Reporting

Source environments can also connect to these target environments (these environments can't be source environments):

- Account Reconciliation
- Narrative Reporting
- Oracle NetSuite Account Reconciliation
- Profitability and Cost Management

#### What are the ways I can connect to other EPM Cloud environments?

- Toggle between the source environment and the target environment on the **Navigator**  menu. See [Navigating Across EPM Cloud Environments](#).
- Customize navigation flows in the source environment to access clusters, cards, and artifacts in other target environments from the Home page. See [Customizing Navigation Flows to Access Other EPM Cloud Environments](#).
- Use direct URLs to seamlessly integrate connected environments. See [Using Direct URLs to Integrate Connected Environments](#).

#### Considerations

- Only Service Administrators create cross-environment connections.  
Users click a navigation link to open the linked environment. Access within the linked environment is determined by the predefined role and access permissions, if any, assigned to the user.
- For cross-environment navigation to be seamless, all environment instances to which cross-environment navigation flows are setup must belong to the same identity domain.

#### Note:

If the target and source environment instances are not on the same identity domain, then you'll not be able to establish a connection between them.

- Service Administrators cannot configure cross-environment connections using corporate SSO (identity provider) credentials.


If your environments are configured for SSO, ensure that identity domain credentials are maintained for the Service Administrators who configure cross-environment connections. See [Enabling Sign In With Identity Domain Credentials](#).

- Migrating cross-environment connections between test and production environments can cause issues in certain use case scenarios. For more information, see [Considerations for Migrating EPM Cloud Connections](#).
- Vanity URLs are not supported in cross-environment connections.

### Troubleshooting

For help with information on fixing common errors while connecting environments, see *Handling Issues with Navigation Flows in Oracle Enterprise Performance Management Cloud Operations Guide*.

### Videos

Your Goal	Watch This Video
Watch this video to learn how to customize an EPM Cloud workflow.	 <a href="#">Overview: Configure Navigation Flows to Integrate EPM Cloud Business Processes</a>

## Considerations for Migrating EPM Cloud Connections

Oracle recognizes that it's common practice for Service Administrators to try out new features, such as connecting environments, on test environments and then migrate to production environments. However, in doing so, it could cause some issues after migration. Here are some use case scenarios that you need to be aware of.

In the following scenarios, assume you have environments for Financial Consolidation and Close and Planning.

### Use Case Scenario 1: Test to Production

When migrating connections from test environments to production environments, ensure that connections that were defined in the test environment are changed to point to the corresponding production environments.

For example, a Service Administrator has defined a connection between the test environments of Planning and Financial Consolidation and Close. The Service Administrator then uses this connection to build a navigation flow in Planning that refers to a card in the Financial Consolidation and Close. The snapshot that the Service Administrator creates for migrating the Planning test environment will include connections and navigation flows, including the connection to Financial Consolidation and Close test environment.

On migrating the snapshot into the Planning production environment, Planning will have an undesirable connection to the Financial Consolidation and Close test environment. You must manually change undesirable connections to point to the corresponding production environment either before or after migrating the environment.

### Use Case Scenario 2: Production to Production or Test to Test

This scenario doesn't have any caveats.

### Use Case Scenario 3: Production to Test

In this scenario, the Service Administrator might be trying to migrate a snapshot from a production environment into a test environment to resolve an issue. Because the connections created in the test environment still points to a production environment, it is important for the Service Administrator to modify connections so that they point to a test environment. Connections in test environments that point to a production environment may inadvertently tamper with the production environment.

## Creating, Editing, and Deleting Connections to Other EPM Cloud Environments

Before you can create connections to other EPM Cloud environments, you must ensure you have access to the source and target environments you're connecting. You must also have URLs for the other environments you're connecting and login details for each environment such as user ID (Service Administrator) and password.

To create, edit, duplicate, and delete connections:

1. Login to the source environment.
2. From the Home page, click **Tools**, and then click **Connections**.
3. Choose an action:
  - To add a connection:
    - a. On the **Manage Connections** page, click **Create**.
    - b. On the **Select Provider to Create Connection** page, select the target environment you want to add.
    - c. Enter the target environment connection details:
      - Click **Change Provider** to select a different target environment.
      - In **Connection Name** enter name for this navigation link; for example, Consolidation Application.
      - Enter an optional description for the link.
      - In **URL**, enter the URL of the target environment instance; for example, `http(s)://your-target-host-url.com`. This is the URL that you normally use to sign in to the target environment instance.
      - Use **Service Administrator** and **Password** to specify the credentials of a Service Administrator.

 **Note:**


- \* These credentials are used only to define and validate the navigation link. When a user logs in, their own role and access will be applied to access the target environment.
- \* Do not prefix user names with the domain name for connections to other EPM Cloud environments. However, the domain name is still needed for connections to other external Web services. See [Connecting to External Web Services](#).


- The **Domain** field is automatically populated based on the URL you enter. If there is no domain in the URL, then the **Domain** field is left blank.
- d. Click **Validate**.
- e. If the validation is successful, click **Save and Close**.
- To edit connections:
  - a. On the **Manage Connections** page, click the name of a connection.
  - b. Edit connection details.

 **Note:**

If you edit the URL to connect to a new service type, you could cause navigation flows to break. If you want to connect to a different service, Oracle recommends creating a new connection instead.

- c. Click **Validate**.
  - d. If the validation is successful, click **Save and Close**.
- To duplicate a connection:
    - a. On the **Manage Connections** page, in the **Action** column next to the connection you want to duplicate, click **⋮**.
    - b. Click **Duplicate**.
    - c. Enter a name for the duplicate connection, then click **OK**.
  - To delete a connection:
    - a. On the **Manage Connections** page, in the **Action** column next to the connection you want to delete, click **⋮**.
    - b. Click **Delete**.

When target environments are connected to an EPM Cloud source environment, they are listed in the **My Connections** pane on the **Navigator**  menu of the source

environment. The **My Connections** pane on the **Navigator**  menu is where you can navigate across environments. See [Navigating Across EPM Cloud Environments](#).

### Troubleshooting

For troubleshooting assistance, see [Handling Issues with Navigation Flows](#) in *Oracle Enterprise Performance Management Cloud Operations Guide*.

## Connecting to External Web Services

Service Administrators can also connect to external Web services for the purpose of reading data from and writing to an external Web service.

This connection can be referenced or used in a Groovy script to create a communications link between the Groovy script and the external HTTP/HTTPS resource. For more details and examples of how this connection can be used in a Groovy script, see the Java API documentation for the [Connection](#) and the [HttpRequest](#) objects in the EPM Groovy object model.

#### Note:

The **Other Web Service Provider** connection type is only available for use with those business processes that allow Groovy Rules to be created. See the [Oracle Enterprise Performance Management Cloud, Groovy Rules Java API Reference](#).

Before you can create connections to external Web services, you must ensure you have access to the Web service you're connecting. You must also have URLs for the Web service and any login details, if required.

To create a connection to an external Web service:

1. Login to the source environment.
2. From the Home page, click **Tools**, and then click **Connections**.
3. On the **Manage Connections** page, click **Create**.
4. Click **Other Web Service Provider**.
5. Enter a **Connection Name** and a **Description** for the connection.
6. Enter the **URL** for the target connection.
7. Enter optional advanced options for the URL.

#### Note:

The optional advanced options enable you to specify query or header parameters when defining an external connection. See [Specifying Advanced Options for External Connections](#).

8. Enter **User** and **Password** login credentials for the connection, if required. In some cases, such as connecting to Oracle Fusion Cloud EPM services, the domain name may need to be prefixed to the user name; for example, <Identity Domain>.<User Name>.

To understand basic authentication for EPM Cloud REST APIs and for instructions on finding your identity domain, see [Basic Authentication - for Classic and OCI in REST API for Enterprise Performance Management Cloud](#).

9. Click **Save and Close**.

## Specifying Advanced Options for External Connections



The optional advanced options enable you to specify query or header parameters when defining an external connection.

### Note:

The ability to define query parameters for an external connection is only available for use with those business processes that allow Groovy Rules to be created. See the [Oracle Enterprise Performance Management Cloud, Groovy Rules Java API Reference](#).

To specify advanced options for external connections:

1. Create an external connection or open an existing external connection.  
See [Connecting to External Web Services](#).
2. Enter connection details, and then click **Show Advanced Options**.
3. Specify query details as follows:

-  : Add query
-  : Delete query
- **Type**: Select **Header** or **Parameter**.


**Header** sets a default header that will be sent on every request made for this connection. **Parameter** sets a default query parameter that will be sent on every request made for this connection.

- **Secure**: If selected, the value entered in the **Value** field will be encrypted. Clearing the **Secure** check box for a row will remove the value.

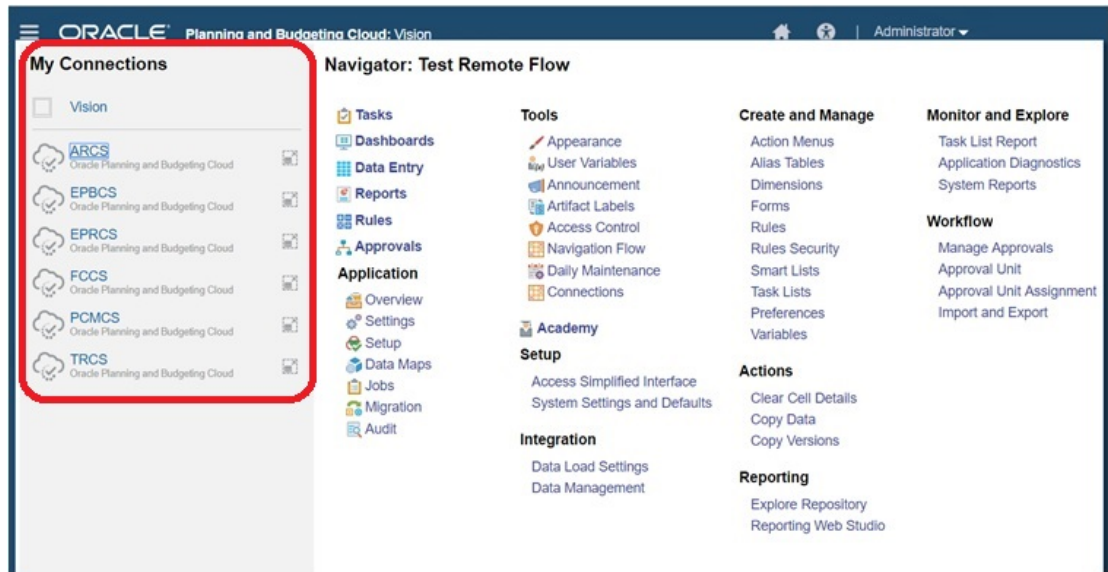
An example header that one would secure is the Bearer Token for external Web services that supports Bearer Authentication, or the API Key query parameter for external Web services that supports API keys for authentication.

- **Name**: Enter a name for the header or query parameter.
- **Value**: Enter the value for the header or query parameter.

## Navigating Across EPM Cloud Environments


Once a Service Administrator creates connections to other EPM Cloud environments, the connections are listed in the **My Connections** pane on the **Navigator**  menu.





You can toggle between the environments from this location. You must have access to the other environments in order to open them. Artifacts are accessible based on the user's role.

To open another Oracle Enterprise Performance Management Cloud environment:

1. From the Home page, click **Navigator** .
2. If environments are connected and you have access to those environments, you'll see a list of connected environments in the **My Connections** pane. Click an environment to open it.

 **Note:**

Click the icon to the right of the environment name to open the environment in a new window.

## Customizing Navigation Flows to Access Other EPM Cloud Environments

You can customize the business process interface to access other EPM Cloud environments from the Home page of a source environment. For example, you can add artifacts to the Home page, such as forms or reports, from other EPM Cloud environments. You can group these artifacts (called cards) into clusters by customizing navigation flows. Clusters and cards from target EPM Cloud environments can be directly included in the navigation flows of source EPM Cloud environments. You can also use the Navigation Flow Designer to customize cards to have tabular pages where each tab is an artifact from a different environment.

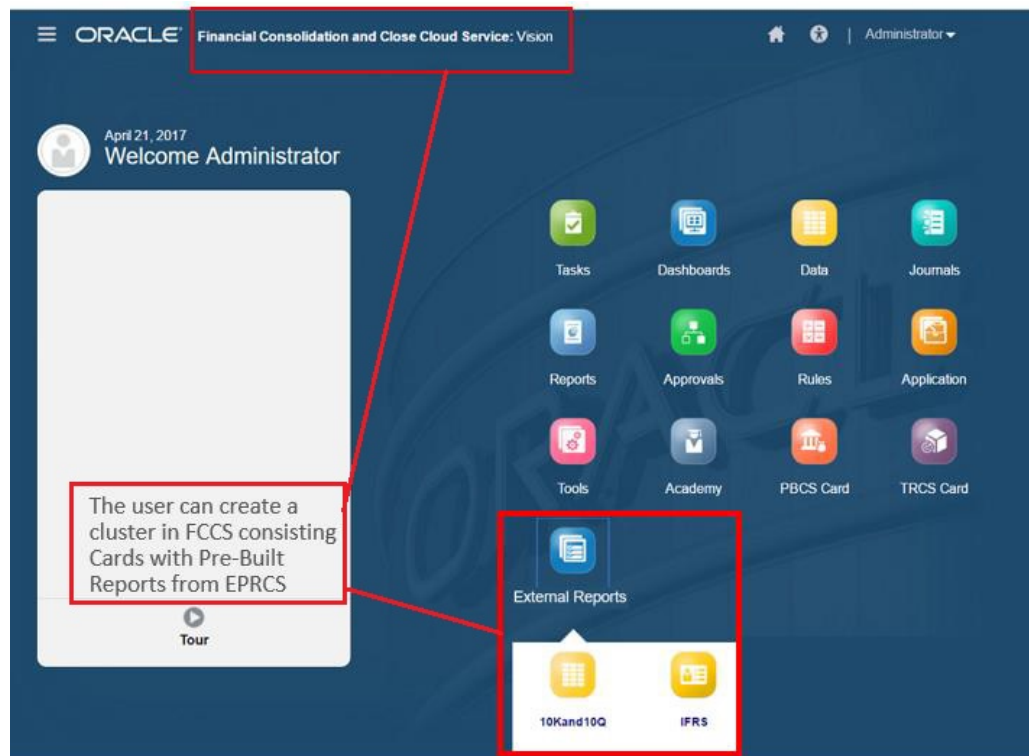
These two use cases describe in detail how to customize navigation flows to access other EPM Cloud environments:

- [Grouping Cards from Other EPM Cloud Environments into Clusters](#)
- [Configuring Cards with Tabs from Multiple EPM Cloud Environments](#)

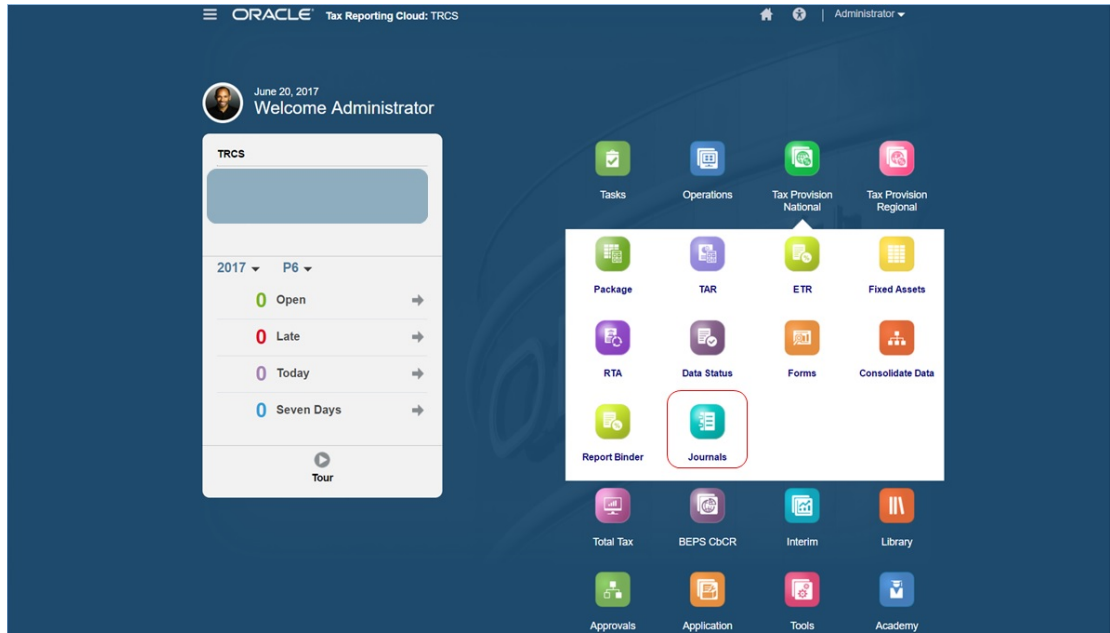
To learn more about designing navigation flows, see [Designing Custom Navigation Flows](#).

## Grouping Cards from Other EPM Cloud Environments into Clusters

You can group cards from various EPM Cloud environments into a cluster that is accessible from the Home page of a source environment. For example, you can create a cluster within Financial Consolidation and Close consisting of cards with pre-built external reports from Narrative Reporting.



Cards from multiple environments can also be included within the same cluster on a source environment. For example, a Tax Reporting user can launch a Journals icon from Financial Consolidation and Close without leaving Tax Reporting.



You create clusters and add cards to clusters by customizing navigation flows.


For general information about navigation flows, see [Designing Custom Navigation Flows](#).

To create a cluster made up of cards from other EPM Cloud environments:

1. Launch the Navigation Flow page and create a navigation flow or edit an existing navigation flow:

 **Note:**

To create a navigation flow, you must first select an existing navigation flow and make a copy of it. Then edit the duplicate navigation flow details and save them.

- a. Click **Tools**, and then click **Navigation Flows**.
- b. To create a navigation flow, select the navigation flow you want to duplicate, then in the upper right-hand corner of the page, click , and then select **Create Copy**. Enter a name for the navigation flow, and then click **OK**.


 **Note:**

New flows are marked **Inactive** until they are activated by the Service Administrator. To activate or deactivate a navigation flow, in the **Active** column, click **Active** or **Inactive**. Only one navigation flow at a time can be active.

- c. To edit an existing navigation flow, click the name of the navigation flow you want to edit.

 **Note:**



Editing is only possible if the navigation flow is inactive. If the navigation flow you want to edit is active, ensure you mark it **Inactive** before editing.

2. Create a cluster or add an existing cluster:
  - a. If it isn't already open, from the **Navigation Flow** page, click the name of the navigation flow in which you want to add a cluster.
  - b. To create a new cluster, right-click a card or cluster (or click ) , click **Add Cluster**, enter or select the cluster details, and then choose an icon for the cluster.
  - c. If there is an existing cluster you want to add from another environment, right-click a card or cluster (or click **Add Existing Card/Cluster**), select the target environment under **My Connections**, and then choose the cluster you want to add to your navigation flow.

Note the following:

- Clusters can't be directly selected from Narrative Reporting and Profitability and Cost Management using the **Add Existing Card/Cluster** option.
- Clusters that are added from another navigation flow or from another environment will display the localized labels that were defined in the source navigation flow. To update the cluster labels in your navigation flow, on the Home page, click **Tools**, and then click **Artifact Labels**.

See Specifying Artifact Labels.

3. Select the cards to include in the cluster using one of these options:
  - Navigate to the card you want to add to the cluster. If the card is within another environment, first select the environment under **My Connections**, and then navigate to the card in that environment. Assign the card to a cluster using one of these options:
    - To the right of the card that you want to move, in the **Order** column, click  . Select the cluster, and then click **OK**.
    - Click the name of the card to view the card details, then for **Cluster** select a cluster for the card, and then click **OK**.
  - Navigate to the cluster in which you want to add the new card. If the cluster is within another environment, first select the environment under **My Connections**, and then navigate to the cluster in that environment. Right-click the cluster (or click ) , click **Add Card In Cluster**, and then select an option:
    - Select **Add Existing Card**, to select an existing card or to add existing cards from another cluster to the selected cluster.
    - Select **Add Card**, and then enter card details to add a new card to the selected cluster.

 **Note:**

You cannot add a card to a cluster if the card or the cluster is already referenced from another navigation flow.

The cards will appear in the listing as children of the cluster. Use the up and down arrows next to the cards to reorder the cards within the cluster, if needed.

4. Click **Save and Close**.

You must activate the navigation flow and reload it to view your design time changes. To reload a navigation flow, click the down arrow next to your user name. Then on the **Setting and Actions** menu, click **Reload Navigation Flow**.

## Settings and Actions

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[Reload Navigation Flow](#)

[Downloads...](#)

[Help...](#)

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[Cloud Customer Connect](#)

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[Provide Feedback...](#)

[Oracle Support...](#)

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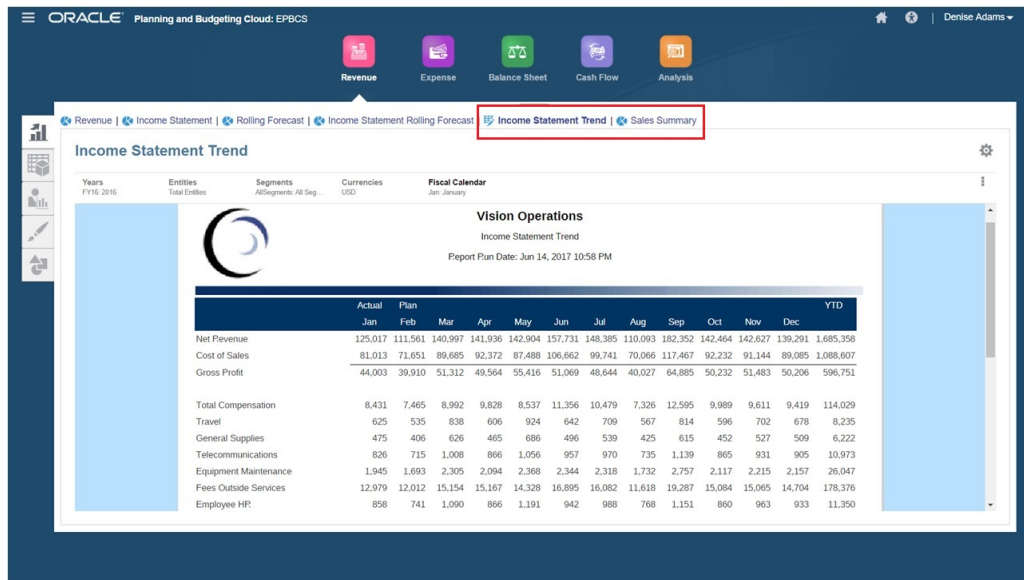
[Sign Out](#)

### Troubleshooting

If you can't see your referenced artifacts after activating and reloading the navigation flow, see Handling Issues with Navigation Flows in *Oracle Enterprise Performance Management Cloud Operations Guide*.

## Configuring Cards with Tabs from Multiple EPM Cloud Environments

You can also customize cards in navigation flows to have tabular pages where each tab is an artifact from a different environment. For example, a Planning user can click a Revenue icon which launches a card with horizontal tabs showing reports from Narrative Reporting.



You create tabular cards by customizing navigation flows.


For general information about navigation flows, see [Designing Custom Navigation Flows](#).

To configure a card made up of tabs and sub tabs from other EPM Cloud environments:

1. Launch the **Navigation Flow** page and create a navigation flow or edit an existing navigation flow:

 **Note:**

To create a navigation flow, you must first select an existing navigation flow and make a copy of it. Then edit the duplicate navigation flow details and save them.


- a. Click **Tools**, and then click **Navigation Flows**.
- b. To create a navigation flow, select the navigation flow you want to duplicate, then in the upper right-hand corner of the page, click , and then select **Create Copy**. Enter a name for the navigation flow, and then click **OK**.

 **Note:**

New flows are marked **Inactive** until they are activated by the Service Administrator. To activate or deactivate a navigation flow, in the **Active** column, click **Active** or **Inactive**. Only one navigation flow at a time can be active.

- c. To edit an existing navigation flow, click the name of the navigation flow you want to edit.


2. Add a tabular card with artifacts from various target environments:

- a. If there is an existing card you want to add from another environment, from the **Navigation Flow** page, right-click a card or cluster (or click ) , click **Add Existing Card/Cluster**, select the target environment under **My Connections**, and then choose the card you want to add to your navigation flow.

Note the following:


- Cards can't be directly selected from Narrative Reporting and Profitability and Cost Management using the **Add Existing Card/Cluster** option.
- Cards that are added from another navigation flow or from another environment will display the localized labels that were defined in the source navigation flow. To update the card labels in your navigation flow, on the Home page, click **Tools**, and then click **Artifact Labels**.

See Specifying Artifact Labels.

- b. To add a new tabular card to the navigation flow, from the **Navigation Flow** page, right-click a card or cluster (or click ) , click **Add Card**, and then select details for the card:

- **Name:** Enter a label for the card.
- **Visible:** Select whether the card is visible to users on the Home page.
- **Cluster:** If clusters exist, select a cluster for the card or select **None**.
- **Icon:** Select the icon that will be displayed for the card you're creating. Choose from the available icons provided in the icon library.
- **Content:** Select from the following options:
  - **Page Type:** Select a multiple page (tabular) format.
  - **Orientation:** Select **Vertical** or **Horizontal**.

3. Add tabs and sub tabs to the tabular card:

- a. To add an existing tab, right-click a tab, click **Add Existing Tab** (or click the **Add Existing Tab** button), and then select a tab from the Object Library.
- b. To add a new tab, right-click a tab, click **Add New Tab** (or click the **Add New Tab** button), and then edit tab details.
- c. Right-click a tab, click **Add New Sub Tab** or **Add Existing Sub Tab** (or click the **Add New Sub Tab** or **Add Existing Sub Tab** buttons), and then choose a sub tab from the Object Library or edit sub tab details.
- d. For **Artifact**, click  to select an artifact in the Artifact Library; for example, if the artifact is a form, then select the specific form from the artifact listing. Available artifacts include forms, dashboards, and reports. To select an artifact from another environment, select the target environment under **My Connections**, and then choose the artifact you want to add to your sub tab.
- e. Repeat adding tabs and sub tabs until the card is complete.

4. Click **Save and Close**.

 **Note:**

- For cards with multiple tabs or sub tabs, the last tab accessed by a user will be retained the next time the user accesses the card in the same session. If the user logs out and then logs back in, the default tab will be displayed.
- Tabs or sub tabs that are added from another navigation flow or from another environment will display the localized labels that were defined in the source navigation flow. To update the tab labels in your navigation flow, on the Home page, click **Tools**, and then click **Artifact Labels**.  
See Specifying Artifact Labels.

You must reload the navigation flow to view your design time changes. To reload a navigation flow, click the down arrow next to your user name. Then on the **Setting and Actions** menu, click **Reload Navigation Flow**.

## Settings and Actions

---

[Reload Navigation Flow](#)

[Downloads...](#)

[Help...](#)

---

[Cloud Customer Connect](#)

---

[Provide Feedback...](#)

[Oracle Support...](#)

[About...](#)

---

[Sign Out](#)

If you can't see your referenced artifacts after reloading the navigation flow, see *Handling Issues with Navigation Flows in Oracle Enterprise Performance Management Cloud Operations Guide*.

## Using Direct URLs to Integrate Connected Environments

Other source systems like Oracle ERP Cloud can embed URLs to directly link to artifacts contained in cards, tabs, and sub-tabs within connected Oracle Enterprise Performance Management Cloud environments.


Other Cloud environments like Oracle ERP Cloud use direct URL links to open connected EPM Cloud content like forms, dashboards, infolets, and reports. To make the integration between EPM Cloud and other systems seamless, you can copy the unique URLs for the artifacts within a connected EPM Cloud business process. You can copy the unique URLs in one of two ways:

- Copy the individual URL for an artifact in the business process. See [Copying Direct URLs for Artifacts](#).



- Export all of the URLs in the business process to a CSV file, then find and copy the unique URLs. See [Exporting All URLs to a CSV File](#).

## Videos

Your Goal	Watch This Video
Learn how to use direct links to embed EPM Cloud content in other systems such as ERP Cloud and NetSuite.	 <a href="#">Overview: Embed Content Using Direct Links</a>

## Copying Direct URLs for Artifacts

Use the **Copy URL** option on the artifact listing page to copy the unique URL for an artifact (dashboards, forms, infolets, and reports) in your Oracle Enterprise Performance Management Cloud business process.



### Note:

**Copy URL** is available to all users so that direct URLs to artifacts can be shared. However, only users with access to the targeted artifact can perform actions on it.

To copy the unique URL for an artifact:

1. From the Home page, open the listing page for the artifact.  
For example, click **Dashboards**, **Data**, **Infolets**, or **Reports**.
2. From the listing page, click **...** next to the artifact, and then select **Copy URL**.
3. The **Copy URL** dialog displays the unique URL for the artifact. Copy the URL.

Copied URLs can, at times, become invalid. Possible reasons for invalid URLs include:

- The artifact is deleted.
- User access for the artifact is revoked.
- The artifact is renamed, which breaks the URL.
- The artifact is moved to a new folder, resulting in a new URL, which breaks the URL.

## Exporting All URLs to a CSV File

Use the **Export URLs** option to create a CSV file that provides the unique URLs for each card, tab, or sub-tab within a connected Oracle Enterprise Performance Management Cloud business process. URLs are grouped by navigation flow and cluster, so the URLs are easier to find within the CSV file. You can open the CSV file with a text editor or Microsoft Excel and embed the relevant URL within the source system pages to serve as a launch point into EPM Cloud.

To export EPM Cloud URLs to a CSV file:

1. Log into an EPM Cloud environment.
2. From the Home page, click the down arrow next to the user name (upper right corner of the screen).

- On the **Settings and Actions** menu, click **Export URLs**, and then click **Save**.

The system saves a CSV file to the default download folder on your local machine, and the filename is automatically generated with the current date and time of the server; for example, `19_Feb_2021_13_15_38_Navigation_Flow_URLs.csv`. Find the file in your download folder, and open it with a text editor or with Microsoft Excel.

### Viewing the Exported URLs File

The CSV file lists all of the URLs in the business process. Each card, tab (vertical tab), and sub-tab (horizontal tab) has a unique URL. When viewed in a text editor like Notepad or in Microsoft Excel, it identifies the unique URL for each card, tab, and sub-tab, so the URLs for each artifact can be more easily found. URLs are grouped by navigation flow and by cluster.



#### Note:

Only cards, tabs, and sub-tabs have URLs. Navigation flows and clusters don't have URLs.

**Table 2 Direct URLs Export File Headers**

Header	Description
Navigation Flow Name	The name of the navigation flow; for example, Default or Financial Flow.
Status	Status of the navigation flow; for example, Active or Inactive.
Type	Type of entry; for example, cluster, card, tab, or sub tab
Name	The cluster, card, tab or sub-tab name where the artifact is contained. This entry will be empty for clusters or cards which do not contain an artifact directly.
Artifact Type	The type of artifact; for example, Form, Dashboards, Financial Reports, and URL type artifacts.
Artifact Name	The name of the artifact or, in the case of an URL type artifact, the direct URL of the target page.
	<div style="border-left: 2px solid orange; padding-left: 10px;"> <p><b>▲ Caution:</b></p> <p>If a direct URL is displayed, do not confuse this URL with the unique URL you'll use to integrate the connected environments.</p> </div>
URL	This is the unique URL you will use to integrate connected environments.
Visible	Indicates whether the artifact in the navigation flow is visible on the Home page to users or groups; for example, Y or N.
Role/Group	The role or group who can view the navigation flow. If a navigation flow is Global, then it can be seen by all users.

**Table 2 (Cont.) Direct URLs Export File Headers**

Header	Description
Description	The description of the navigation flow, if provided.

The URLs export file provides the information separated by a vertical bar or pipe ( | ) delimiter character. See the following example direct URLs export file as viewed in Notepad:

```

Navigation Flow Name|Status|Type|Name|Artifact Type|Visible|Role/Group|Description
2 Dashboard 2.0 Test Inactive cluster Strategic Modeling |||Global|Default Navigation Flow
3 Dashboard 2.0 Test Inactive card Model View |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151|Global|Default Navigation Flow
4 Dashboard 2.0 Test Inactive card Consolidation View |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_161|Global|Default Navigation Flow
5 Dashboard 2.0 Test Inactive card Templates |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_6-EPH_CA_401|Global|Default Navigation Flow
6 Dashboard 2.0 Test Inactive card Dashboards |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111|Global|Default Navigation Flow
7 Dashboard 2.0 Test Inactive card Infolets |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111|Global|Default Navigation Flow
8 Dashboard 2.0 Test Inactive card Reports |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_411|Global|Default Navigation Flow
9 Dashboard 2.0 Test Inactive card Reports |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_411|Global|Default Navigation Flow
10 Dashboard 2.0 Test Inactive card Reports |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_411|Global|Default Navigation Flow
11 Dashboard 2.0 Test Inactive tab Reports |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_6-EPH_CA_401|Global|Default Navigation Flow
12 Dashboard 2.0 Test Inactive tab Financial Reports |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_6-EPH_CA_401|Global|Default Navigation Flow
13 Dashboard 2.0 Test Inactive tab Documents |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_6-EPH_CA_401|Global|Default Navigation Flow
14 Dashboard 2.0 Test Inactive card Rules |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111|Global|Default Navigation Flow
15 Dashboard 2.0 Test Inactive card Approvals |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111|Global|Default Navigation Flow
16 Dashboard 2.0 Test Inactive cluster Application |||Global|Default Navigation Flow
17 Dashboard 2.0 Test Inactive card Overview |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111|Global|Default Navigation Flow
18 Dashboard 2.0 Test Inactive card Intersections |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111|Global|Default Navigation Flow
19 Dashboard 2.0 Test Inactive card Valid Intersections |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111|Global|Default Navigation Flow
20 Dashboard 2.0 Test Inactive sub tab Setup |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151|Global|Default Navigation Flow
21 Dashboard 2.0 Test Inactive sub tab Reports |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151|Global|Default Navigation Flow
22 Dashboard 2.0 Test Inactive card Data Exchange |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151|Global|Default Navigation Flow
23 Dashboard 2.0 Test Inactive sub tab Data Integration |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151|Global|Default Navigation Flow
24 Dashboard 2.0 Test Inactive sub tab Data Maps |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151|Global|Default Navigation Flow
25 Dashboard 2.0 Test Inactive card Jobs |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151|Global|Default Navigation Flow
26 Dashboard 2.0 Test Inactive card Cell Level Security |||https://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151|Global|Default Navigation Flow
    
```

To view the URLs export file in Microsoft Excel:

1. Open Excel, and then click the **Data** menu.
2. Click **New Query**, then **From File**, and then click **From CSV**.
3. Find and select the CSV file you exported, and then click **Import**. A new window displays the data in the CSV file.
4. To make the first row of the CSV file the header row, click **Edit**, click **Use First Row as Headers**, and then click **Close and Load**.

The resulting Excel file will look like the following example:

	A	B	C	D	E	F	G	H	I	J
	Navigation Flow Name	Status	Type	Name	Artifact Type	Artifact Name	URL	Visible	Role/Group	Description
1	Dashboard 2.0 Test	Inactive	cluster	Strategic Modeling				Y	Global	Default Navigation Flow
2	Dashboard 2.0 Test	Inactive	card	Model View			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151	Y	Global	Default Navigation Flow
3	Dashboard 2.0 Test	Inactive	card	Consolidation View			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_161	Y	Global	Default Navigation Flow
4	Dashboard 2.0 Test	Inactive	card	Templates			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_6-EPH_CA_401	Y	Global	Default Navigation Flow
5	Dashboard 2.0 Test	Inactive	card	Tasks			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111	Y	Global	Default Navigation Flow
6	Dashboard 2.0 Test	Inactive	card	Dashboards			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111	Y	Global	Default Navigation Flow
7	Dashboard 2.0 Test	Inactive	card	Infolets			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111	Y	Global	Default Navigation Flow
8	Dashboard 2.0 Test	Inactive	card	Data			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151	Y	Global	Default Navigation Flow
9	Dashboard 2.0 Test	Inactive	card	Reports			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_411	Y	Global	Default Navigation Flow
10	Dashboard 2.0 Test	Inactive	card	Reports			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_411	Y	Global	Default Navigation Flow
11	Dashboard 2.0 Test	Inactive	tab	Reports			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_6-EPH_CA_401	Y	Global	Default Navigation Flow
12	Dashboard 2.0 Test	Inactive	tab	Financial Reports			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_6-EPH_CA_401	Y	Global	Default Navigation Flow
13	Dashboard 2.0 Test	Inactive	tab	Documents			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_6-EPH_CA_401	Y	Global	Default Navigation Flow
14	Dashboard 2.0 Test	Inactive	card	Rules			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111	Y	Global	Default Navigation Flow
15	Dashboard 2.0 Test	Inactive	card	Approvals			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111	Y	Global	Default Navigation Flow
16	Dashboard 2.0 Test	Inactive	cluster	Application				Y	Global	Default Navigation Flow
17	Dashboard 2.0 Test	Inactive	card	Overview			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111	Y	Global	Default Navigation Flow
18	Dashboard 2.0 Test	Inactive	card	Settings			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111	Y	Global	Default Navigation Flow
19	Dashboard 2.0 Test	Inactive	card	Valid Intersections			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_111	Y	Global	Default Navigation Flow
20	Dashboard 2.0 Test	Inactive	sub tab	Setup			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151	Y	Global	Default Navigation Flow
21	Dashboard 2.0 Test	Inactive	sub tab	Reports			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151	Y	Global	Default Navigation Flow
22	Dashboard 2.0 Test	Inactive	card	Data Exchange			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151	Y	Global	Default Navigation Flow
23	Dashboard 2.0 Test	Inactive	sub tab	Data Integration			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151	Y	Global	Default Navigation Flow
24	Dashboard 2.0 Test	Inactive	sub tab	Data Maps			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151	Y	Global	Default Navigation Flow
25	Dashboard 2.0 Test	Inactive	card	Jobs			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151	Y	Global	Default Navigation Flow
26	Dashboard 2.0 Test	Inactive	card	Cell Level Security			http://slcar261.usdsv1.oraclecloud.com:10151/HyperionPlanning?C_M_VisC_MF=Dashboard2.0Test&C_PAGE_ID=EPH_CA_30-EPH_CA_151	Y	Global	Default Navigation Flow

Find and copy the unique URL (found in the URL column) for the card, tab, or sub-tab that you wish to have integrated into the other connected environment. Only the URL target will open and users with access to the targeted artifact can perform the same actions as if they're working within the target business process.

# Using Migration

You export artifacts to create backups that can be used to restore the service or to migrate applications across environments; for example, from a test environment to a production

environment or to help set up a new service instance. You can export or import all the artifacts in the service or a combination of the artifacts.

## Videos

Your Goal	Watch This Video
Learn about migration.	 <a href="#">Migrating Artifacts</a>

See [Using Migration for EPM Cloud Services](#) in *Administering Migration for Oracle Enterprise Performance Management Cloud* for more information,

# Cloning Your Environment

The Clone Environment feature is a screen-based way to clone an environment and, optionally, identity domain artifacts (users and predefined role assignments), and contents of the inbox, outbox, and stored snapshots.

This feature is an alternative to using the [Clone Environment](#) EPM Automate command.

To clone your Enterprise Profitability and Cost Management environment:

1. Sign in to Enterprise Profitability and Cost Management as a Service Administrator or as a Service Administrator, who also has the Identity Domain Administrator predefined role.
2. From the Home page, select **Tools**, and then **Clone Environment**.
3. In **Target URL**, enter the URL of the environment that will become the cloned environment; for example, `https://testExample-idDomain.pbcs.us1.oraclecloud.com`.
4. In **Username**, enter the user name of a Service Administrator who may also have the Identity Domain Administrator predefined role. For Oracle Cloud Classic to OCI cloning, you must enter the user name of a user who has Service Administrator and Identity Domain Administrator predefined roles in the target environment. This user must be able to log into the target environment using identity domain credentials.
5. In **Password**, enter the identity domain password of the user specified in Username.
6. **Optional:** Deselect the **Data Management** check box if you do not want to clone Data Management records. Cloning of Data Management records may take a long time if the staging tables contain a very large number of records.
7. **Optional:** Select the **Stored Snapshots and Files** check box if you want to clone the contents of inbox and outbox, and stored snapshots. This process may take a long time depending on the number and size of stored snapshots and files in inbox and outbox.
8. Click **Clone** to initiate the process.

For more information, see [Cloning EPM Cloud Environments](#) in *Administering Migration for Oracle Enterprise Performance Management Cloud*.

# Auditing Tasks and Data

## Related Topics

- [Auditing Overview](#)
- [Enabling Audit Tracking](#)
- [Viewing Audit Details](#)

## Auditing Overview

Use the Audit feature to view tasks performed by users. You can filter audited tasks by audit type (for example, Data or Clear Cell Details), date range (for example, Yesterday or Last 60 Days), and user name.

You must be a Service Administrator to enable audit tracking, and to view and export audit information.

These are the types of user activities the system can log in the task audit:

**Table 3 Tasks That Can be Audited**

Audit Types	Tracked Changes
<b>Dimension Administration</b>	<ul style="list-style-type: none"><li>• Dimension hierarchy: Adding a member or dimension; moving, deleting, and changing properties; renaming a member and dimension</li><li>• Performance settings: Resetting a dimension's dense or sparse setting, changing the order of dimensions</li></ul>
<b>Alias Table Administration</b>	Changes to alias tables: Creating, copying, renaming, deleting, and clearing
<b>Data</b>	<ul style="list-style-type: none"><li>• Cell values</li><li>• Supporting detail</li><li>• Account annotations</li><li>• Cell-level documents</li></ul>
<b>Launch Business Rules</b>	Updates from calculation scripts and business rules (including runtime prompts)
<b>Form Definition</b>	Forms: Creating, moving, deleting forms (The audit record doesn't record how the design changed.)
<b>Form Folder Administration</b>	Folders: Created, moved, and deleted

### Note:

The audit log only captures modifications if the data change occurs within a data form. If a modification occurs as part of, for example, a business rule calculation, a data map, or a direct data load to Oracle Essbase, it will not be captured in the audit log.

**Table 3 (Cont.) Tasks That Can be Audited**

<b>Audit Types</b>	<b>Tracked Changes</b>
<b>Security</b>	Access permissions to dimension members, forms, form folders, business rules, and task lists
<b>Users Administration</b>	Users added, changed, and deleted
<b>Groups Administration</b>	Groups added, changed, and deleted; users added and removed
<b>Copy Data</b>	Users' selections for Static Dimensions, Source Dimension, and Destination Dimension, including supporting detail, cell text, cell attachments, and data without any details
<b>Clear Cell Details</b>	Users' selections for clearing supporting details, comments, and attachments
<b>Variables</b>	Variables (substitution variables and user variables): Added, changed, and deleted
<b>EPCM Model</b>	Changes to models: <ul style="list-style-type: none"> <li>• Add, delete, and copy actions: Only the Name and Description fields are audited</li> <li>• Modify action: All fields in the corresponding pages are audited</li> </ul>
<b>EPCM Rule Set</b>	Changes to rule sets: <ul style="list-style-type: none"> <li>• Add, delete, and copy actions: Only the Name and Description fields are audited</li> <li>• Modify action: All fields in the corresponding pages are audited</li> </ul>
<b>EPCM Rule</b>	Changes to rules: <ul style="list-style-type: none"> <li>• Add, delete, and copy actions: Only the Name and Description fields are audited</li> <li>• Modify action: All fields in the corresponding pages are audited</li> </ul>
<b>EPCM Point of View</b>	Changes to the point of view: <ul style="list-style-type: none"> <li>• Add, delete, and copy actions: Only the Name and Description fields are audited</li> <li>• Modify action: All fields in the corresponding pages are audited</li> </ul>
<b>EPCM Profit Curve</b>	Changes to profit curves: <ul style="list-style-type: none"> <li>• Add, delete, and copy actions: Only the Name and Description fields are audited</li> <li>• Modify action: All fields in the corresponding pages are audited</li> </ul>

The Audit page displays the following information:

- Audit (task)
- Source
- Action
- User
- Name
- Date
- Details
- Property
- Old Value

- New Value

All columns can be sorted in ascending or descending order.

## Enabling Audit Tracking

Audit tracking isn't enabled by default. Service Administrators must enable auditing so data changes can be tracked.

To enable auditing:

1. On the Home page, click **Tools**, and then click **Audit**.
2. From the **Audit** page, click **Enable Auditing**.
3. From the **Enable Auditing** page, select an audit task or tasks, and then click **Save and Close**.


## Viewing Audit Details

You can view and export up to 180 days of audit details in the business process interface.

To view audit details:


1. On the Home page, click **Tools**, and then click **Audit**.

If auditing is enabled, by default the **Audit** page displays the audit records for **Data** tasks for the **Last 7 Days**. To enable auditing, see [Enabling Audit Tracking](#).

2. To filter, click  , and select filter criteria:
  - **Audit Types:** Select one or more, or **All**. For a list of audit types and descriptions, see [Auditing Overview](#).
  - **Date Range:** Select **Today**, **Yesterday**, **Last 7 Days**, **Last 30 Days**, **Last 60 Days**, or **Last 180 Days**.

### Note:

- You can't select a date range prior to 180 days from today. The date range you select must occur between today and 180 days prior to today (including today).
- The business process retains up to 365 days of audit details from the current system date. To export more than 180 days of audit details, you can use the EPM Automate `exportAppAudit` command or the REST API Export Audit job. See *Working with EPM Automate for Oracle Enterprise Performance Management Cloud* or *REST API for Oracle Enterprise Performance Management Cloud*.

- **User Name:** Enter a user name or click  to search for the user.
3. When you're done selecting filter criteria, click **Apply**.

The grid displays the first 200 records from the audit table that match the filter criteria. You can view a legend at the bottom of the table if the filter criteria has more than 200 records in it.

4. To export the audit information to a Microsoft Excel spreadsheet, click **Export**, and follow the download instructions.

When you select the **Export** option, the system exports all of the records matching the filter criteria to an `xlsx` file (format for Microsoft Excel versions 2007 and later).



#### Note:

If data auditing is enabled, users can see what data has changed by selecting **Actions**, and then **Change History**.

## Setting User Preferences

### Related Topics

- [About Setting User Preferences](#)
- [General Preferences](#)
- [Display Preferences](#)
- [Notifications](#)
- [Ad Hoc Options](#)
- [User Variables](#)
- [Report Preferences](#)
- [Form Printing Preferences](#)

## About Setting User Preferences

You can set preferences to control many aspects of function and display, including how reports and forms are printed.

To set user preferences:

1. From the Home page, select **Tools**, and then **User Preferences**.
2. Click the tabs on the left to set your preferences.



#### Note:

User preferences take precedence over the preferences set by administrators (see [About Managing Application and System Settings](#)). To restore administrator settings, select **Use Administrator's Settings** on any tab on the **Preferences** page.



# General Preferences

**Table 4 General Preferences**

Preference	Description
<b>Profile</b>	
<b>Time Zone</b>	Your time zone. <b>Note:</b> The default time zone for new users is (UTC) Reykjavik - Greenwich Mean Time.
<b>Language</b>	The language used to display labels and buttons. If you don't select a language, then your browser's locale is used.
<b>Profile Image</b>	You can set your profile to display on the Announcements panel of the Home page. Click <b>Profile Image</b> to select and open an image file. The image can be of type <code>.png</code> , <code>.jpg</code> , <code>.jpeg</code> , or <code>.gif</code> . If the uploaded picture exceeds 100 x 100 pixels, it will automatically be resized. <b>Note:</b> Automatic resizing only impacts new profile images that are uploaded in User Preferences. Existing profile pictures will not be resized. Your profile picture displays after you sign out and then sign back in.
<b>Alias Setting</b>	
<b>Alias Table</b>	Which alias table to use in the Enterprise Profitability and Cost Management application. An <i>alias</i> is another, often more descriptive, name for a member. Sets of aliases are stored in alias tables. For example, you may have an alias table for English member names, another alias table for German member names.
<b>Display Member Label As</b>	How you want the member name or alias displayed. If you select <b>Default</b> , then the form, grid, or dimension settings determine how member names are displayed.

# Display Preferences

**Table 5 Display Preferences**

Preference	Description
<b>Number Formatting</b>	Set how numbers are formatted. Your selections apply to all currencies, in all forms that you have access to. You cannot select the same option for the <b>Thousands Separator</b> and the <b>Decimal Separator</b> .
<b>Page Options</b>	
<b>Indentation of Members</b>	How members are indented on the page. If you select <b>Do not indent</b> , the members are displayed as a flat, sequential list.
<b>Number of Items on the Page Drop Down</b>	How many items are listed on the Page drop-down. If the Page drop-down displays so many items that you have to scroll through the list, you may want to let a lower number of items to display.
<b>Other Options</b>	
<b>Show Consolidation Operators</b>	Whether to show consolidation operators.
<b>Date Format</b>	Date format to use throughout the Enterprise Profitability and Cost Management application. <b>Automatically Detect</b> sets the date format based on your browser locale. The format you select is used throughout the user interface, including in reports.
<b>Enable User Formulas in Ad Hoc</b>	Whether to enable User Formulas in Ad Hoc. Selecting <b>Yes</b> allows you to perform calculations on the fly without having to submit changes to the database. See <a href="#">Using Ad Hoc for Data Entry and Analysis</a> .
<b>Currency Code</b>	If you have a multi-currency application, select a currency code. The selected currency determines the precision, scale, and currency symbol settings used through the Enterprise Profitability and Cost Management application. See <a href="#">Setting Up Currencies</a> .

## Notifications

**Table 6 Notifications**

Preference	Description
<b>Email Address</b>	The email address where notifications will be sent.
<b>Notifications</b>	Select which activities you want to be notified of by email when there is a change. <b>Note:</b> Approvals are not applicable in Enterprise Profitability and Cost Management.

## Ad Hoc Options

You can set preferences to control the display and behavior of ad hoc grids. See [Using Ad Hoc for Data Entry and Analysis](#) for more information on ad hoc grids.

**Table 7 Ad Hoc Options**

Preference	Description
<b>Ad Hoc Options</b>	
<b>Member Inclusion</b>	How members are displayed. <ul style="list-style-type: none"> <li>• <b>Include selection:</b> Displays both the selected member and the members retrieved as a result of the operation. For example, zooming in on the selected member Qtr1 displays data for Qtr1, Jan, Feb, Mar.</li> <li>• <b>Within selected group:</b> Performs an operation such as Zoom only on the selected group of members, leaving unselected cells as is. This setting is meaningful only when there are two or more dimensions down the grid as rows or across the grid as columns. This option pertains to Zoom, Keep Only, and Remove Only.</li> </ul>
<b>Zoom In</b>	Level at which to zoom in: <ul style="list-style-type: none"> <li>• <b>Next level:</b> Retrieve data for the children of the selected members.</li> <li>• <b>All levels:</b> Retrieve data for all descendants of the selected members.</li> <li>• <b>Bottom level:</b> Retrieve data for the lowest level of members in a dimension.</li> </ul>
<b>Ancestor Position</b>	How to display ancestors in the hierarchy: <ul style="list-style-type: none"> <li>• <b>Top:</b> Display member hierarchies in order from highest to lowest level.</li> <li>• <b>Bottom:</b> Display member hierarchies in order from lowest to highest level.</li> </ul>

Table 7 (Cont.) Ad Hoc Options

Preference	Description
<b>Display Member Label As</b>	Whether member names, aliases, or both are displayed.
<b>Alias Table</b>	Which alias table to use. An <i>alias</i> is another, often more descriptive, name for a member. Sets of aliases are stored in alias tables. For example, you may have an alias table for English member names, another alias table for German member names.
<b>Indentation</b>	How member hierarchy levels are indented: <ul style="list-style-type: none"> <li>• <b>None:</b> No indentation.</li> <li>• <b>Subitem:</b> Indent descendants. Ancestors are left-justified in the column.</li> <li>• <b>Totals:</b> Indent ancestors. Descendants are left-justified in the column.</li> </ul>
<b>Navigate without refreshing data</b>	Selecting this option improves performance as you navigate around the grid, for example pivoting and zooming. Click <b>Refresh</b> to update the data. If you don't select this option, data is refreshed as you work in ad hoc.
<b>Suppression</b>	
<b>Zeros</b>	<ul style="list-style-type: none"> <li>• <b>Row:</b> Select to hide rows containing only zeros.</li> <li>• <b>Column:</b> Select to hide columns containing only zeros.</li> </ul>
<b>Suppress</b>	<ul style="list-style-type: none"> <li>• <b>Repeat members:</b> Select to hide rows that contain repeated member names, regardless of the grid orientation.</li> <li>• <b>Missing blocks on rows:</b> Select to hide blocks of cells in rows that have no data.</li> </ul>
<b>Missing Data</b>	Select to hide rows or columns with zeros or that have no data.
<b>No Access</b>	Select to hide rows or columns that you don't have access to. <b>Note:</b> If you get an error when you try open an ad hoc grid that says "Ad hoc grid cannot be opened as there are no valid rows of data", then clear the above <b>Suppression</b> options.
<b>Precision</b>	
<b>Use Currency Member Setting</b>	Select to apply the precision setting of the Currency member. Set the minimum and maximum number of decimal positions to display in a cell for <b>Currency Values, Non-Currency Values, and Percentage Values.</b> For example, if the cell value is 100, and you set the Minimum precision to "2", then the value displays as "100.00"
<b>Replacement</b>	

Table 7 (Cont.) Ad Hoc Options

Preference	Description
<b>No Data</b>	Text to display for cells that have #Missing or #NoData as their value.
<b>No Access</b>	Text to display for cells that you don't have access permission to view.
<b>Submit Zeros</b>	Select if you specified #NumericZero as the text for the <b>No Data</b> or <b>No Access</b> replacement option, and you want to submit zeros.

## User Variables

User variables help you to focus on members that you are interested in, such as your department's expenses. For example, you can create a form with entities on the rows and a user variable called Department. You can limit the number of rows displayed on the form by selecting a member for the Department user variable, such as Sales. Later, you can select another member for Department, such as Marketing. Before you can open a form, you must set your preferences for the user variables.

The **User Variables** page lists the user variables that have been set up for each dimension and the currently selected member for each variable. To select a member for a variable, click



### Note:


The **Dimension** column honors the **Alias Setting** defined in [General Preferences](#). So if an alias name is defined for a dimension, the **Dimension** column displays that dimension's alias based on the **Alias Table** selected. If no alias is defined for the dimension, then the dimension name is displayed.

### Note:

To learn more about user variables, see [Working with User Variables](#) and [Selecting User Variables as Members](#).

# Report Preferences

**Table 8 Report Preferences**

Preference	Description
<b>Preview POV</b>	When enabled, opening or previewing a report requires you to click  to refresh data.
<b>Unit of Measurement</b>	Select <b>Inch</b> or <b>Centimeter</b> as the unit of measure to use in reports.

# Form Printing Preferences

Set preferences for how forms and their data are printed as PDF files.



**Note:**

To print to a PDF file, you must have Adobe Acrobat Reader installed.

**Table 9 Form Printing Preferences**

Preference	Description
<b>Page Settings</b>	Set preferences for paper size, layout, fit, and flow. You can also select whether to print in black and white.
<b>Options</b>	Select the options that you want to apply to your forms and data.

# Part VI

## Creating and Managing Business Rules

### Related Topics

- [About Business Rules](#)
- [Using Business Rules](#)
- [Resources for Designing Groovy Business Rules](#)

## About Business Rules

Enterprise Profitability and Cost Management supports the creation of business rules in Calculation Manager.

You can create business rules in Calculation Manager using the Groovy scripting language. Groovy scripting allows you to design sophisticated rules that solve use cases that normal business rules can't solve. For example, you could create rules to prevent users from saving data in forms if the data value is above a predefined threshold, update a global driver by returning a calc script, move and rename members, and create metadata and data with validations. See [Resources for Designing Groovy Business Rules](#).

Business rules created in Calculation Manager can be launched in Enterprise Profitability and Cost Management from any place that you can execute a calculation script; for example, from the Business Rules page, within the context of a form, in the Job Scheduler, and in dashboards. To launch business rules, the rules must first be deployed in Calculation Manager. See [Launching Business Rules](#).

You can diagnose performance issues with business rules and pinpoint and address any issues using activity reports. Activity reports identify which business rules are taking the longest to execute. You can then open the rules in Calculation Manager, review the log, and optimize the steps within the rule to improve performance. See [Viewing Rules Usage](#).

### Note:

- Business rules in the **PCM\_CLC** and **PCM\_REP** cubes are created in Script mode using the Groovy scripting language. (The Graphical view in Calculation Manager is *not* available for business rules created in the **PCM\_CLC** and **PCM\_REP** cubes.) Any additional cubes allow you to use both the Graphical and Script modes to create business rules.
- The ASO Custom Calculation and ASO Allocation functions, `executeASOcustomcalculation` and `executeASOallocation` are *not* supported for **PCM\_CLC** and **PCM\_REP** cubes.

 **Tip:**

For help with designing business rules to avoid common execution errors and optimizing slow rules, see [Troubleshooting Business Rule Errors and Performance](#) in *Oracle Enterprise Performance Management Cloud Operations Guide*.



# Using Business Rules

## Related Topics

- [Creating, Validating, and Deploying Business Rules](#)
- [Managing Business Rule Security](#)
- [Enabling Business Rules Notification](#)
- [Launching Business Rules](#)
- [Viewing Rules Usage](#)

## Creating, Validating, and Deploying Business Rules

To create, validate, and deploy a business rule:

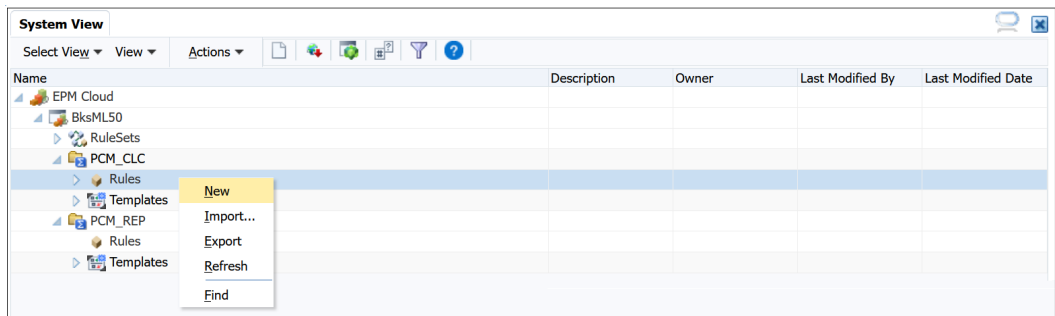
1. From the Enterprise Profitability and Cost Management Home page, click **Navigator**



2. Under **Create and Manage**, click **Business Rules**.

This opens Calculation Manager.

3. In Calculation Manager, navigate to the desired cube, then right-click **Rules**, and select **New**



4. In the **New Rule** dialog box, enter the information about the rule, and then click **OK**.

Note that the following characters are not allowed in the rule name: '\r', '\n', '\t', '\f', '\b', '<', '>', '(', ')', '"', '\w', '{', '}', '[', ']', '\*', '?'

5. Begin designing your rule.

- If you are creating a rule in the **PCM\_CLC** and **PCM\_REP** cube, the rule editing page opens in Script mode. The Designer (graphical) mode is not available, and the drop-down menu option that allows you to switch between Designer and Script mode is disabled. Select the **Script** tab, and begin entering your script.

Do not use the following keywords when editing in script mode:

- /\*STARTCOMPONENT\*/
- /\*STARTCOMPONENT:SCRIPT\*/


```

- /*STARTCOMPONENT:FORMULA*/
- /*ENDCOMPONENT*/
- /*STARTRULE*/
- /*ENDRULE*/
- /*STARTTEMPLATE*/
- /*ENDTEMPLATE*/

```

The script that you enter is automatically saved in Groovy.

See *Options Available When Editing in Script Mode* in *Designing with Calculation Manager for Oracle Enterprise Performance Management Cloud* for information on the options available when creating the script for a business rule.

- If you are creating a rule in cube other than the **PCM\_CLC** and **PCM\_REP** cube, the rule editor opens in Graphical mode, and you can use the drop-down menu to switch between graphical and script mode. See *Creating a Business Rule* in *Designing with Calculation Manager for Oracle Enterprise Performance Management Cloud* for information on creating a business rule in Graphical mode.
6. Click , or click the **Actions** drop-down, and select **Save**.
  7. Right-click the rule, and select **Validate**.
  8. Right-click the rule, and select **Deploy**.

## Managing Business Rule Security


### Related Topics

- [Assigning Access to Individual Business Rules](#)
- [Assigning Access to Folders Containing Several Business Rules](#)

## Assigning Access to Individual Business Rules

Service Administrators can assign access to business rules.

To assign access to an individual business rule:

1. From the Home page, select **Business Rules**.
2. Select a business rule, click , and select **Assign Permission**.

### Note:

You can assign permissions to only one business rule at a time.

3. In the **Assign Permission** dialog box, click the **Permissions** tab.  
Any previously selected users and groups are displayed. To add additional users or groups, click **Add User/Group**, select a user or a group, and click **OK** and then **Close**.

4. For each user or group displayed, select an option:
  - **Launch** allows the user or group to launch the selected business rule.
  - **No Launch** prevents the user or group from launching the selected business rule.

 **Note:**

See [Types of Access Permissions](#) for additional information on Launch/No Launch settings.

5. Click **Save**.




 **Note:**

The rules that are displayed on the **Business Rules** page are the business rules created in Calculation Manager. Any Allocation and Custom Calculation rules created Enterprise Profitability and Cost Management are *not* displayed on this page.

## Assigning Access to Folders Containing Several Business Rules

You can organize your rules under folders, and then assign access at the folder level. When you assign access to a folder, all of the rules in the folder inherit the access assigned.

To assign access to folders containing several business rules:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Business Rules Security**.
2. Under **Business Rule Folders**, select the folder containing the business rules, and then click .
3. In the **Assign Access** dialog box, any previously selected users and groups are displayed. Do one of the following:
  - To assign access to business rules for additional users or groups, click the **Users** or **Groups** folder, click , and then select from the list of available users and groups.



**For Type of Access:**

- Select **Launch** to allow the users or groups to launch the business rules in the selected folder.
- Select **No Launch** to prevent the users or groups from launching the business rules in the selected folder.

Click **Add** and then **Close**. The users or groups to which you assigned access now display in the **Users** or **Groups** folder.

 **Note:**


See [Types of Access Permissions](#) for additional information on Launch/No Launch settings.

- To edit access, select the users or groups you want to edit, and then click .
  - To remove access, select the users or groups for which to remove access, and then click .
4. Click **Close**.

## Enabling Business Rules Notification

You can specify whether to send an email notification to a user or group when business rules that are created and enabled for notification in Calculation Manager are completed or encounter errors.

To enable business rules notification:

1. From the Home page, select **Application**, and then **Settings**.
2. In **System Settings**, for **Business Rules Notification**, select **Yes**.
3. For **Notify These Users**, click , and select the user or group to notify.

 **Note:**

You can select only one user or group to notify.

4. Click **Save**.

 **Note:**

You specify whether to enable a business rule for notification when you create the rule in Calculation Manager using the **Enable Notifications** option in the rule's properties. See *Creating a Business Rule in [Designing with Calculation Manager for Oracle Enterprise Performance Management Cloud](#)*.


## Launching Business Rules

### Related Topics

- [Launching Business Rules From the Business Rules Page](#)
- [Launching Business Rules From a Form](#)
- [Launching Business Rules From the Job Scheduler](#)
- [Launching Business Rules from Dashboards 1.0](#)

## Launching Business Rules From the Business Rules Page

To launch a business rule from the **Business Rules** page:

1. From the Home page, select **Business Rules**.
2. On the **Business Rules** page, select the desired business rule, and click **Launch** .

### Note:

Business rules must be deployed in Calculation Manager before they can be launched. If a business rule has not been deployed, it will not display on the **Business Rules** page. To deploy a business rule, right-click the rule in Calculation Manager, and select **Deploy**. If the deployment is successful, a "Deployment was successful" message is displayed.

### Note:

Allocation and Custom Calculation rules created in Enterprise Profitability and Cost Management are not displayed on the **Business Rules** page. Only business rules created and deployed in Calculation Manager are available to launch on this page.

## Launching Business Rules From a Form

### Adding and Removing Rules in Forms



You can associate one or more rules with a form, by cube. Users can launch associated rules from the form to calculate and allocate values. You can set whether each rule associated with a form automatically launches when the form is opened or saved. You can also change the order in which the rules are launched or remove rules from a form.

Note the following:

- Rules must be deployed to the business process from Calculation Manager before you can add rules to business process forms.
- Likewise, if a rule is deleted in Calculation Manager, the rules must be redeployed to the business process in order for them to no longer be used in the business process. Optionally, you can manually remove a rule from a form using the procedure in this topic.
- Rules that are set to automatically run when a form is loaded or saved never run in the background.

To add, update, or remove business rules in forms:

1. Take an action:
  - To update the current form, click **Actions**, and then click **Business Rules**.

- To open a form for editing so you can associate rules, go to the Home page and click the **Navigator** icon , and then under **Create and Manage**, click **Forms**. Select the form, click , and then click **Business Rules**.
2. From the **Cube** drop-down menu, select the cube.
  3. From the **Business Rules** list, select the rules to associate with the form, and add them to **Selected Business Rules**. To remove associated rules, select the rules under **Selected Business Rules** and remove them.

By default, the Calculate Form rule is selected. Calculate Form is automatically created for forms to calculate subtotals. You can remove Calculate Form to prevent users from calculating data in forms.

4. To change the order of selected business rules (the order in which rules display and launch), select a business rule in **Selected Business Rules** and click the up or down arrow to move it up or down in the list. The rule listed first displays and launches first; the rule at the bottom of the list displays and launches last.

 **Caution:**



The order in which business rules launch is important and may affect data.

5. To set business rule properties, click **Properties**.  
 See [Setting Business Rule Properties](#).
6. Click **Save** to save your work and continue creating or editing the form, or click **Finish** to save your work and close the form.

## Setting Business Rule Properties

You can specify whether business rules associated with forms launch automatically when users load (open) or save the form. If business rules have runtime prompts, you can set whether the default members in the runtime prompt match the members selected in the page and Point of View axes.

To set business rule properties:

1. Do one of the following:
  - To update the current form, click **Actions**, and then click **Business Rules**.
  - To open a form for editing, from the Home page, click **Navigator** , and then under **Create and Manage**, click **Forms**. Select the form, click , and then click **Business Rules**.
2. There are four phases in a form where a rule can be assigned and each may have information relevant to that phase. Under the **Business Rules Properties** section, select from the following:
  - **Run Before Load**
  - **Run After Load**
  - **Run Before Save**

- **Run After Save**

 **Note:**

- **Run After Load** and **Run Before Save** are enabled only for Groovy rules. You can't select these options for calc scripts or graphical rules.
- Some actions such as saving the grid, changing the page, or launching an action menu item will also reload the page after the operation completes. This ensures the grid contains the newest data. When this happens, the before and after load actions will run as they do in normal page loads.
- While hidden runtime prompts are not supported for calc script rules on the before and after load options, they are supported for Groovy rules.

3. **Optional:** If a business rule has runtime prompts, select **Use Members on Form** to match the default member selection on the runtime prompt window to the current members in the page and Point of View axes of the open form.

To hide runtime prompt values, select **Hide Prompt**. You can hide runtime prompts if:

- All runtime prompt member values are filled in (appropriate dimension members can be read from form's Page/Point of View)
- No dimensions are repeated in the runtime prompt

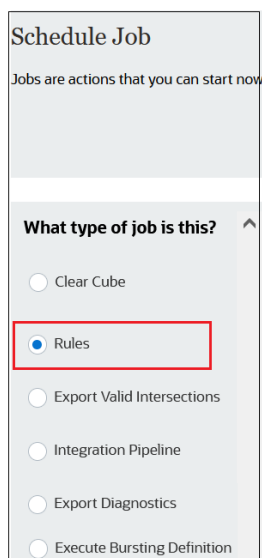
4. Click **OK**.

## Launching Business Rules From the Job Scheduler

Business rules are launched when scheduling a job to run.

To schedule and launch a business rule:

1. From the Home page, select either **Application** or **Modeling**, and then **Jobs**.
2. On the **Jobs** page, click the **Actions** drop-down, and select **Schedule**.
3. On the **General** tab, under **What type of job is this?**, select **Rules**.



Schedule Job

Jobs are actions that you can start now

**What type of job is this?** ^

Clear Cube

Rules

Export Valid Intersections

Integration Pipeline

Export Diagnostics

Execute Bursting Definition

- The **Job Details** tab lists all the business rules that have been created. Select the desired business rule.

Schedule Job

Jobs are actions that you can start now or schedule to run at intervals. Follow the steps below to set up this new job.

General Job Details Review

Business Rules Refresh

All Cubes All Rule Types


Type	Name	Description	Select
	Export L0 Data		<input checked="" type="checkbox"/>
	Push Data to PCM_REP		<input type="checkbox"/>

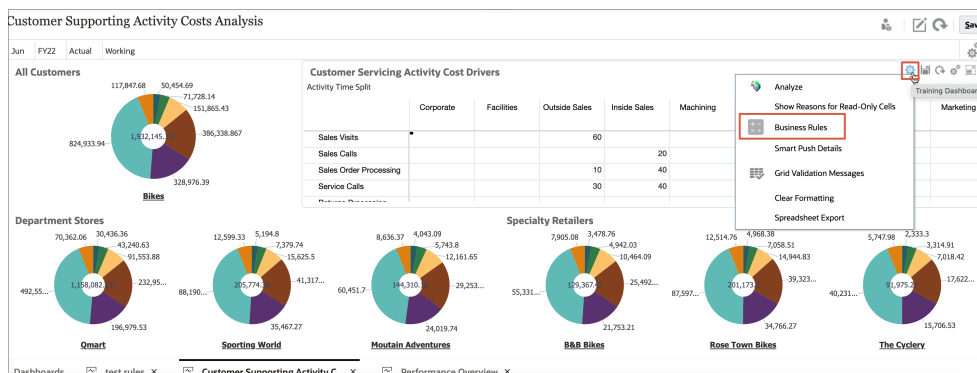
- Review the information and click **Finish**.

## Launching Business Rules from Dashboards 1.0

In Dashboards 1.0, you can select business rules attached to a form.

To launch business rules from Dashboards 1.0:

- From the **Home** page, select **Dashboards**.
- On the **Dashboards** page, **expand Dashboards 1.0**, and select a dashboard.
- Hover over a data grid component, and click  (**Actions** icon), and select **Business Rules**.



- In the **Business Rules** dialog box, select the desired business rule.

## Viewing Rules Usage


Service Administrators can generate a report, called the Rules Usage Report, that details where rules are used. Filters enable you to refine the details by rule name, rule type, and cube.



**Note:**

The only rules listed in the Rules Usage Report are those rules that are deployed in the business process.

To view rules usage:

1. Click the **Navigator** icon , and then under **Monitor and Explore**, click **System Reports**.
2. Click the **Rules Details** tab.
3. If filtering, select filter criteria, and then click **Apply Filter**:

- **Rule Type:** Choose one or more options: **All**, **Rules**, and **Rulesets**
- **Cube:** Choose from a list of available cubes.
- **Name Filter:** Enter a rule or ruleset name. Optionally, you can use wildcard characters.

The **Rules** list displays the rules that are deployed in the business process and that match the filter criteria.

4. For **File Format**, select one of the following formats:
  - **XLSX** (default)
  - **PDF**
  - **HTML**
  - **XML**

**Note:**

Choosing XML format enables you to configure the Rules Usage Report with the help of Oracle BI Publisher Add-in for MS Office. You can have greater control over which columns to display in your report, the order in which the columns are displayed, whether to apply sorting, and so on.

5. Click **Create Report**.

The Rules Usage Reports provides the following information:

- Rule Name
- Rule Type
- Cube
- Primary Association (Type and Name)
- Secondary Association (Type and Name)

Primary association refers to the rule that is associated with the artifact directly; for example, a rule linked to a form or to a task. Secondary association refers to the rule that is associated with an artifact indirectly; for example, a rule that is linked to a menu item, and the menu item is linked to a form, or a rule that is linked to a task for a given task list.

Rules in the generated report are displayed in alphabetical order as follows:

- Rule name
- Primary association type
- Primary association name

**Example 22-1 Sample Rules Usage Report Showing Primary Associations (PDF Format)**



Rules Usage Report

Rule Name	Rule Type	Cube	Primary Association		Secondary Association	
			Type	Name	Type	Name
Act_Agg_Ek	Rules	PSPPlan1				
Adhoc - Clear 5+7	Rules	PSPPlan1				
Agg	Rules	PSPPlan1	Form	_XX_Agg		
Agg - Roll up E and O from drop down, Customer in row, all others at none	Rules	PSPPlan1	Form	1 - Corp Prof Fees		

**Example 22-2 Sample Rules Usage Report Showing Primary and Secondary Associations (PDF Format)**



Rule Name	Rule Type	Cube	Primary Association		Secondary Association	
			Type	Name	Type	Name
psp_Agg_budget	Rules	PSPPlan1				
psp_Agg_Fcst_All Dims	Rules	PSPPlan1	Task	Aggregation	Task List	Execute Royalty Calc
psp_Agg_FC@AER_All Dims	Rules	PSPPlan1				
psp_Agg_budget_All Dims	Rules	PSPPlan1				
psp_Rowfocused_Agg	Rules	PSPPlan1	Form	1.0 psp_Agg		
psp_Agg_Actuals_All Dims	Rules	PSPPlan1				

# Resources for Designing Groovy Business Rules

## Related Topics

- [About Groovy Business Rules](#)  
Groovy business rules allow you to design sophisticated rules that solve use cases that normal business rules can't solve; for example, rules to prevent users from saving data on forms if the data value is above a predefined threshold.
- [Java API Reference for Groovy Rules](#)  
For Enterprise applications, a Java API Reference is available to use as you create Groovy rules.
- [Groovy Business Rule Examples](#)
- [Groovy Business Rule Tutorial Videos](#)  
Watch these tutorial videos for details and best practices when implementing and using Groovy Business Rules.
- [Groovy Business Rule Tutorials](#)  
Complete these tutorials for hands-on examples on implementing Groovy Business Rules.
- [Groovy Rule Business Scenarios](#)  
This section provides examples of business scenarios where you can use Groovy business rules.

## About Groovy Business Rules

Groovy business rules allow you to design sophisticated rules that solve use cases that normal business rules can't solve; for example, rules to prevent users from saving data on forms if the data value is above a predefined threshold.

### Note:

Groovy is an advanced customizable rules framework that comes with EPM Cloud Platform and is available with EPM Enterprise Cloud along with Enterprise PBCS and PBCS Plus One. You can create and edit Groovy rules in:

- Planning (including these application types: Custom, Module, FreeForm, Sales Planning, and Strategic Workforce Planning)
- Enterprise Profitability and Cost Management
- Financial Consolidation and Close
- FreeForm
- Tax Reporting

You create Groovy rules in Calculation Manager and execute them from any place that you can execute a calc script rule in an application; for example, on the Rules page, within the context of a form, in the job scheduler, in dashboards, in task lists, and so on.

Groovy rules are also supported in rulesets. You can have a combination of calc script rules and Groovy rules within a ruleset.

Groovy rules are not supported in composite forms.

You can execute jobs of type rules, rulesets, and templates synchronously from a Groovy rule.

You can write Groovy scripts to run select EPM Automate commands directly in Oracle Enterprise Performance Management Cloud, without installing EPM Automate client on a client machine. Refer to [Running Commands without Installing EPM Automate](#) and [Supported Command](#) in *Working with EPM Automate for Oracle Enterprise Performance Management Cloud* for information on which EPM Automate commands can be run via Groovy and example scripts.

Oracle supports two types of Groovy rules:

- Rules that can dynamically generate calc scripts at runtime based on context other than the runtime prompts and return the calc script which is then executed against Oracle Essbase.

For example, you could create a rule to calculate expenses for projects only for the duration (start and end dates) of the project.

Another example is a trend-based calculation that restricts the calculation to the accounts available on the form. You could use this calculation for various forms in Revenue, Expense, Balance Sheet, and Cash Flow. This allows for optimization and reuse.

- Pure Groovy rules that can, for example, perform data validations and cancel the operation if the data entered violates company policies.

## Video

---

### Your Goal

Learn about training options for creating Groovy rules in Oracle Enterprise Performance Management Cloud.

### Watch This Video



[Learning Groovy in Oracle EPM Cloud](#)

## Java API Reference for Groovy Rules

For Enterprise applications, a Java API Reference is available to use as you create Groovy rules.

The Java API Reference includes examples that demonstrate the syntax and powers of the EPM Groovy object model.

To view the Java API Reference, see the [Java API Reference for Oracle Enterprise Performance Management Cloud Groovy Rules](#) on the [cloud help center](#). You can also access this reference from the Oracle Enterprise Planning and Budgeting Cloud Academy. To access the Academy, sign in, and then click **Academy**.

## Groovy Business Rule Examples

To see example Groovy scripts:

1. See the [Oracle Enterprise Performance Management Cloud Groovy Rules Java API Reference](#).
2. Do one of the following:
  - Under **Example Groovy Scripts** on the main page, click the word "[here](#)" to view sample scripts:  






### Example Groovy Scripts

The example Groovy scripts provided here demonstrate the syntax and power of the EPM Groovy object model.

[Overview](#) [Package](#) [Class](#) [Tree](#) [Index](#) [Help](#)
  - Under **All Classes** in the left pane, click a class to see the examples for that class. For example, to see Strategic Modeling examples, click the StrategicModel class in the left pane.

## Groovy Business Rule Tutorial Videos





Watch these tutorial videos for details and best practices when implementing and using Groovy Business Rules.

Your Goal	Watch this Video
See the training options for creating Groovy rules in Oracle Enterprise Performance Management Cloud:	 <a href="#">Learning Groovy in Oracle EPM Cloud</a>
Push data from a source location to a target location using Groovy rules and Smart Push.	 <a href="#">Moving Modified Data Using Groovy Rules and Smart Push</a>
Generate focused calculation scripts in the business process to calculate only data that has been edited, instead of the entire data entry form.	 <a href="#">Calculating Modified Data Using Groovy Rules</a>
Use Groovy rules to calculate incrementally loaded data in Data Management.	 <a href="#">Calculating Incrementally Loaded Data in Data Management Using Groovy Rules</a>
Use Groovy templates to improve usability and calculation performance for user actions.	 <a href="#">Customizing Actions to Improve Performance Using Groovy Templates</a>


# Groovy Business Rule Tutorials






Complete these tutorials for hands-on examples on implementing Groovy Business Rules.

## Implement Groovy: Basic Tasks


Your Goal	Learn How
Learn about the Groovy scripting language and how to create a Groovy script for your business process in Oracle Enterprise Performance Management Cloud.	 <a href="#">Introduction to Groovy Business Rules</a>
Implement Groovy scripts to work with data grids and data grid iterators. <ul style="list-style-type: none"> <li>Use conditional logic to set the background colors in a data grid</li> <li>Implement performance benchmarking</li> <li>Set default data values in a grid</li> </ul>	 <a href="#">Working with Data Grids and Iterators in Groovy</a>
Create a Groovy script to work with business process metadata, in this case, moving a member from one parent to another. The script includes RTPs to prompt users for input. You'll also learn how to create a right-click action menu with a menu item to call the script, and how to associate the action menu with a data form.	 <a href="#">Moving Dimension Members with Groovy</a>
Push data from a source location to a target location using Groovy rules and Smart Push.	 <a href="#">Moving Modified Data Using Groovy and Smart Push</a>

## Implement Groovy: Advanced Tasks

Your Goal	Learn How
Implement a Groovy script that validates data entry against allowed ranges stored in a driver cube.	 <a href="#">Validating Data Entry Rules with Groovy</a>

Your Goal	Learn How
<p>Create a Groovy script to work with business process metadata, in this case, adding a member to a dimension. The script includes RTPs to prompt users for input.</p> <p>You'll also learn how to create a right-click action menu with a menu item to call the script, and how to associate the action menu with a data form.</p>	 <a href="#">Adding Dimension Members with Groovy</a>
<p>Generate focused calculation scripts in your business process to calculate only data that has been edited, instead of the entire data entry form.</p>	 <a href="#">Calculating Modified Data Using Groovy</a>
<p>Understand Strategic Modeling concepts and learn how to integrate data between strategic models and business process applications using Groovy scripts.</p>	 <a href="#">Integrating Data between Planning and Strategic Models Using Groovy</a>
<p>Create a Groovy template with interactive Design Time Prompts (DTPs).</p>	 <a href="#">Creating Groovy Templates</a>
<p>Learn how to use a Groovy business rule in the business process to export dimension metadata from EPM Cloud, and then import the metadata into the business process.</p>	 <a href="#">Integrating Dimension Metadata from Enterprise Data Management Cloud with Planning Using Groovy Rules</a>

### Implement Groovy: REST API

Your Goal	Learn How
<p>Call a Data Management REST API to execute a data load rule that will load the latest product volumes for the user's entity into the business process.</p>	 <a href="#">Calling an Internal REST API Using Groovy</a>



---

**Your Goal**

Call an external Rest API from a Groovy script in your business process.

You'll also learn how to create a right-click action menu with a menu item to call the script, and how to associate the action menu with a data form.

---

**Learn How**

[Calling an External REST API Using Groovy](#)

## Groovy Rule Business Scenarios

This section provides examples of business scenarios where you can use Groovy business rules.

These topics contain scenarios that show you how to use Groovy rules to perform focused data movement and smart calculations on business process data:

- [Moving Modified Data Using Groovy Rules and Smart Push](#)
- [Calculating Modified Data Using Groovy Rules](#)

### Moving Modified Data Using Groovy Rules and Smart Push

In this topic, we'll show you best practices on how you can use Groovy rules and Smart Push to move modified data into a reporting cube.

On a data form, users can modify employee salary and assign a Reporting Manager. After the form data is saved, Smart Push is run to copy data to the reporting cube for analysis. Then, dimensions are also consolidated, if necessary, as the data is being copied.

If the form contains hundreds of rows of data, all of that data is checked against the configured data map, processed for dimension consolidation, if any is set, and then pushed to the reporting cube. Depending on the amount of data on your form, this process may take a while to complete.

You can improve the performance of data synchronization between your input and reporting cubes by designing a Groovy rule that identifies and isolates the data you modified, and pushes only the isolated data into your reporting cube.

For example, we configured a simple data map for Smart Push that maps dimension members from our input cube to our reporting cube.

### PushCompensationToRepCube

Tap description to edit

Options Save and Close Cancel

Source	Target
HP1 <span>Plan2 ▾</span>	HP1 <span>HP1_ASO ▾</span>
<b>Account</b> ILV10Descendants(Account)	<b>Account</b>
<b>Currency</b> ILV10Descendants(Currency)	<b>Currency</b>
<b>Employee</b> ILV10Descendants(Employee)	<b>Employee</b>
<b>Entity</b> ILV10Descendants(Entity)	<b>Entity</b>
<b>ReportingManager</b>	<b>Manager</b>
<b>Unmapped Dimensions</b>	

Then we prepared forms that display data from our input and reporting cubes.

ORACLE Planning and Budgeting Cloud: HP1

Manage Employees | Data Exchange

Input Cube | Reporting Cube

### Manage Employee Salary and Reporting Manager

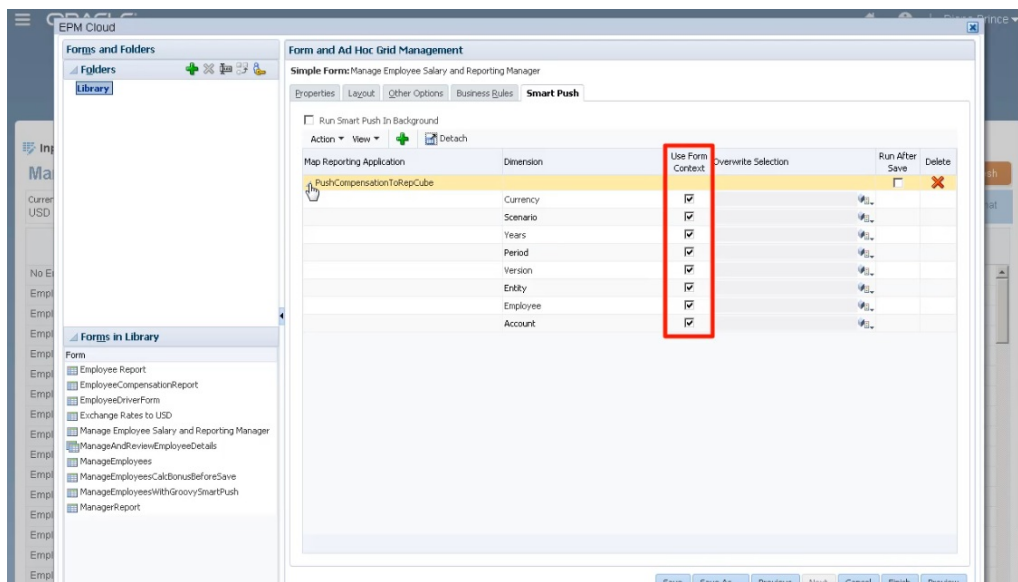
Currency: USD | Scenario: Current | Years: FY16 | Period: Jan | Version: BU Version\_1 | Entity: No Entity

Actions: Save Refresh | Data Ad hoc Format

	Grade	Salary	Bonus	Employee Phone	Employee Email	Reporting Manager
No Employee	Grade 1	500	1000	555-1234	no_emp@oracle.c	Jerry R
Employee 1	Grade 3	7000	650	555-4321	emp1@oracle.co	Jerry R
Employee 2	Grade 3	6900	620	555-2345	emp2@oracle.co	Elizabeth K
Employee 3	Grade 1	4200	1000	555-5432	emp3@oracle.co	John S
Employee 4	Grade 2	5000	500	555-8765	emp4@oracle.co	Elizabeth K
Employee 5	Grade 3	6000	600	555-9876	emp5@oracle.co	Jerry R
Employee 6	Grade 1	4000	400	555-1234	emp6@oracle.co	Jerry R
Employee 7	Grade 2	5200	500	555-1235	emp7@oracle.co	Elizabeth K
Employee 8	Grade 3	6000	600	555-1236	emp8@oracle.co	John S
Employee 9	Grade 1	7000	700	555-1237	emp9@oracle.co	Jerry R
Employee 10	Grade 2	8500	800	555-1238	emp10@oracle.c	Elizabeth K
Employee 11	Grade 3	9000	900	555-1239	emp11@oracle.c	John S
Employee 12	Grade 1	10000	1000	555-1240	emp12@oracle.c	Jerry R
Employee 13	Grade 2	4250	425	555-1241	emp13@oracle.c	Elizabeth K
Employee 14	Grade 3	5250	525	555-1242	emp14@oracle.c	John S
Employee 15	Grade 1	6250	625	555-1243	emp15@oracle.c	Jerry R

Period	Years	Scenario	Version	Currency	Entity	Salary	Bonus
Jan	FY16	Current	BU Version_1	USD	No Entity		
No Employee	Jerry R					500	1000
Employee 1	Jerry R					7000	650
Employee 2	Elizabeth K					6900	620
Employee 3	John S					4200	1000
Employee 4	Elizabeth K					5000	500
Employee 5	Jerry R					6000	600
Employee 6	Jerry R					4000	400
Employee 7	Elizabeth K					5200	500
Employee 8	John S					6000	600
Employee 9	Jerry R					7000	700
Employee 10	Elizabeth K					8500	800
Employee 11	John S					9000	900
Employee 12	Jerry R					10000	1000
Employee 13	Elizabeth K					4250	425
Employee 14	John S					5250	525
Employee 15	Jerry R					6250	625
Employee 16	Elizabeth K					7250	725

The form used for data entry has Smart Push enabled and uses the form's context to push data for all the members selected for the dimensions defined on the form.



For the Groovy rule, here's the entire script.

```

1  if(!operation.grid.hasSmartPush("PushCompensationToRepCube"))
2      return
3
4  // Isolate edited employees
5  Set<string> employees = []
6  operation.grid.dataCellIterator('salary', 'Reporting Manager').each { DataCell cell ->
7      if(cell.edited) {
8          employees << cell.getMemberName("Employee")
9      }
10 }
11
12 if(employees) {
13     // Push data to the reporting cube for edited employees only
14     String employeesStr = "" + employees.join(", ")
15     operation.grid.getSmartPush("PushCompensationToRepCube").execute( [ "Employee" : employeesStr ] )
16     println("The following employee compensation details were moved to reporting cube: \n" + employeesStr)
17 }
18 else{
19     println("There were no modifications. No data was moved to the reporting cube.")
20 }

```

The script starts by identifying the associated data map for smart push.

```

1 if(!operation.grid.hasSmartPush("PushCompensationToRepCube"))
2     return
3
4 // Isolate edited employees
5 Set<String> employees = []
6 operation.grid.dataCellIterator('Salary', 'Reporting Manager').each { DataCell cell ->
7     if(cell.edited) {
8         employees << cell.getMemberName("Employee")
9     }
10 }
11
12 if(employees) {
13     // Push data to the reporting cube for edited employees only
14     String employeesStr = """"\${employees.join(', ')}\""""
15     operation.grid.getSmartPush("PushCompensationToRepCube").execute( [ "Employee" : employeesStr ] )
16     println("The following employee compensation details were moved to reporting cube: \n \${employees.join(', ')}")
17 }
18 else{
19     println("There were no modifications. No data was moved to the reporting cube.")
20 }

```

This section of the script uses the `dataCellIterator` method to identify edited cells and isolates them.

```

1 if(!operation.grid.hasSmartPush("PushCompensationToRepCube"))
2     return
3
4 // Isolate edited employees
5 Set<String> employees = []
6 operation.grid.dataCellIterator('Salary', 'Reporting Manager').each { DataCell cell ->
7     if(cell.edited) {
8         employees << cell.getMemberName("Employee")
9     }
10 }
11
12 if(employees) {
13     // Push data to the reporting cube for edited employees only
14     String employeesStr = """"\${employees.join(', ')}\""""
15     operation.grid.getSmartPush("PushCompensationToRepCube").execute( [ "Employee" : employeesStr ] )
16     println("The following employee compensation details were moved to reporting cube: \n \${employees.join(', ')}")
17 }
18 else{
19     println("There were no modifications. No data was moved to the reporting cube.")
20 }

```

Then, this section takes the isolated data and runs the focused data movement using Smart Push and the data map configured and associated with the form. A message displays when modified data is moved to the reporting cube.

```

1 if(!operation.grid.hasSmartPush("PushCompensationToRepCube"))
2     return
3
4 // Isolate edited employees
5 Set<String> employees = []
6 operation.grid.dataCellIterator('Salary', 'Reporting Manager').each { DataCell cell ->
7     if(cell.edited) {
8         employees << cell.getMemberName("Employee")
9     }
10 }
11
12 if(employees) {
13     // Push data to the reporting cube for edited employees only
14     String employeesStr = """"\${employees.join(', ')}\""""
15     operation.grid.getSmartPush("PushCompensationToRepCube").execute( [ "Employee" : employeesStr ] )
16     println("The following employee compensation details were moved to reporting cube: \n \${employees.join(', ')}")
17 }
18 else{
19     println("There were no modifications. No data was moved to the reporting cube.")
20 }

```

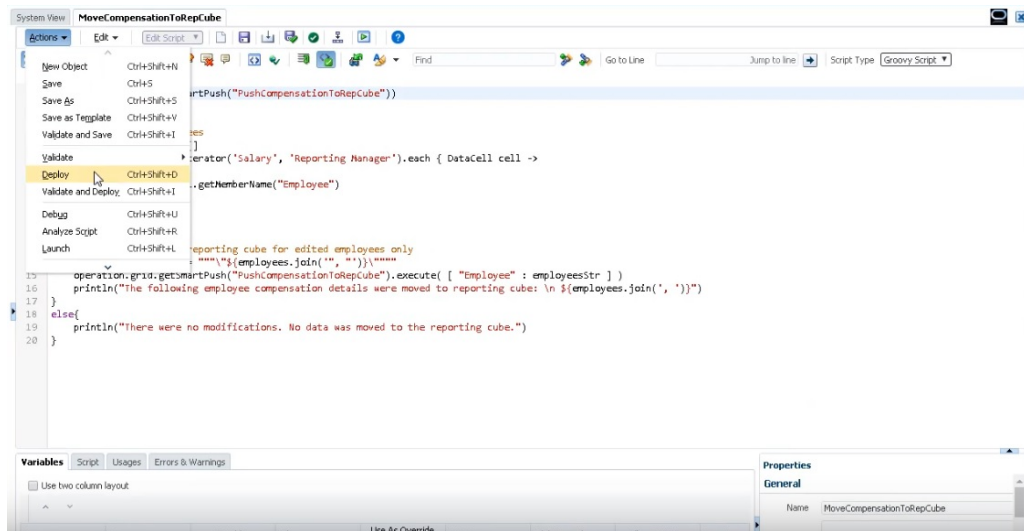
If there are no modifications, a message displays when there are no changes and data was not moved to the reporting cube.

```

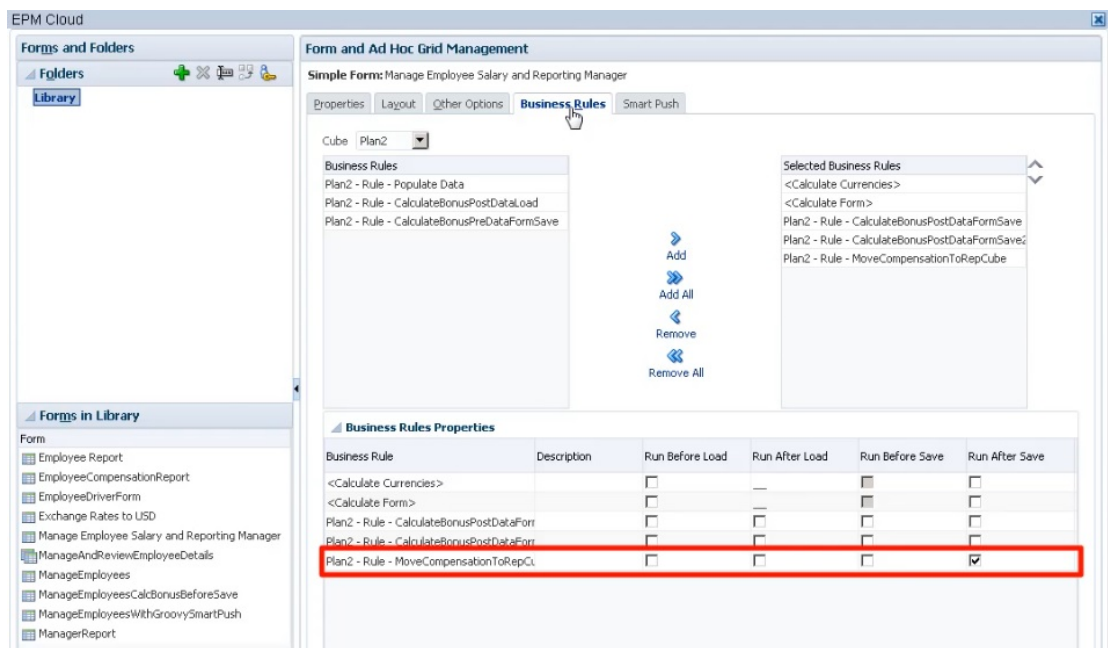
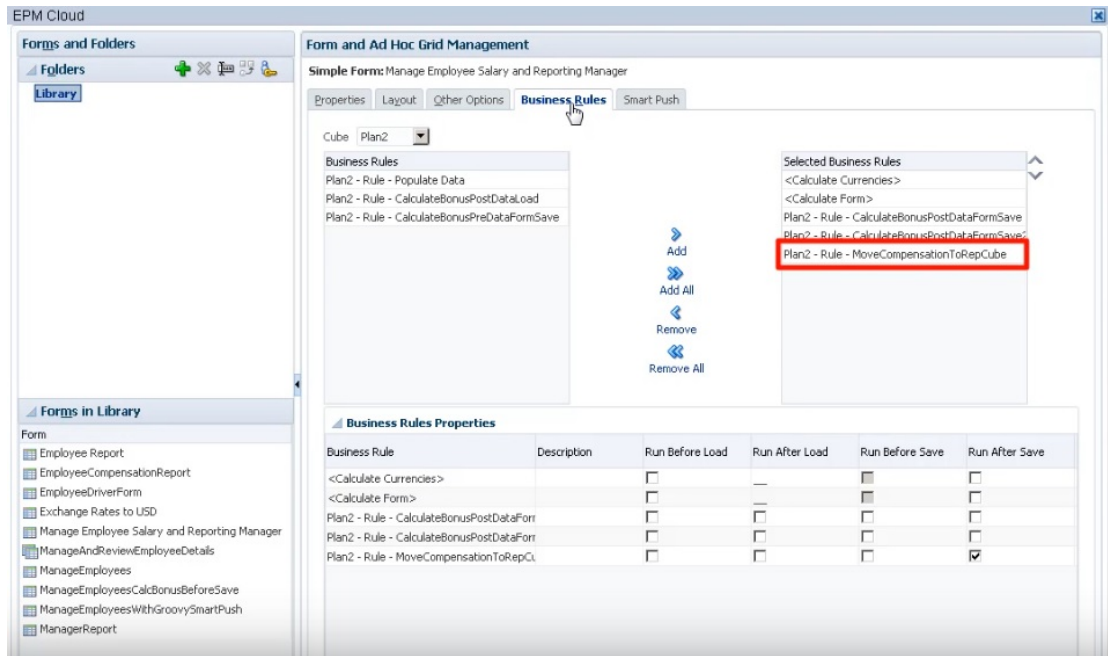
1 if(operation.grid.hasSmartPush("PushCompensationToRepCube"))
2     return
3
4 // Isolate edited employees
5 Set<String> employees = []
6 operation.grid.dataCellIterator('Salary', 'Reporting Manager').each { DataCell cell ->
7     if(cell.edited) {
8         employees << cell.getMemberName("Employee")
9     }
10 }
11
12 if(employees) {
13     // Push data to the reporting cube for edited employees only
14     String employeesStr = """"\${employees.join(", ")}\"""
15     operation.grid.getSmartPush("PushCompensationToRepCube").execute( [ "Employee" : employeesStr ] )
16     println("The following employee compensation details were moved to reporting cube: \n \${employees.join(', ')}")
17 }
18 else{
19     println("There were no modifications. No data was moved to the reporting cube.")
20 }

```

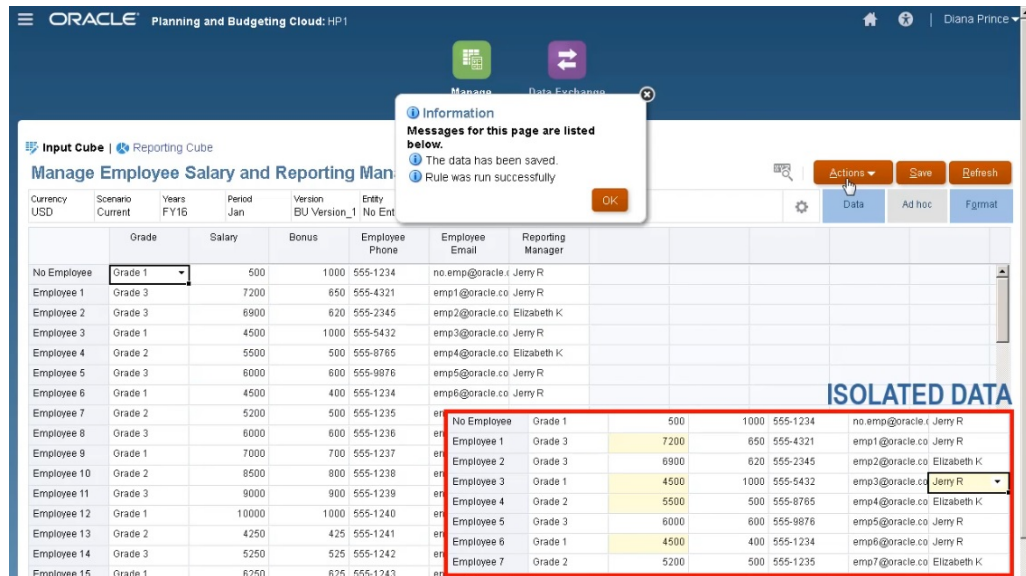
After we created this Groovy rule, we deployed it the same way we deploy business rules.



Then, in form management, associated it with the form. The Groovy rule runs after the form data is saved.



To run the Groovy rule, open the form in **Input Cube**, make some changes, and then click **Save**.



Once saved, the updated data will display in the reporting cube.

## Calculating Modified Data Using Groovy Rules

In this topic, we'll show you how to improve business process calculation performance by using Groovy rules to calculate only the data that's been modified.

After you update data in a form, it needs to be calculated. When you use a business rule to calculate a standard calculation script, all the data for the form is calculated. With large forms or calculations that affect large areas of the database, you might see slower calculation performance.

You can manually calculate one row at a time by right-clicking on the row. This can provide faster calculation performance, but isn't a good option when making changes to multiple rows of data.

Groovy rules can dynamically focus on the cells that you update.

You can use Groovy rules on forms in two ways:

- When you calculate data on save, the Groovy rule generates a calculation script with a FIX statement based on the cells you updated. Then the calculation is run on the server against the modified data instead of all records on the form. As a best practice, use this option with larger forms where you are updating a lot of data.
- When you calculate data before saving, the Groovy rule calculates modified data in memory and displays the results on the form before saving them to the database. As a best practice, use this option when you have a small number of calculations to perform, or when you want to perform complex procedural calculations that are difficult to build into the outline.

In this example, bonus calculations are calculated as a percent of salary.

Currency	Scenario	Years	Period	Version	Entity		
USD	Current	FY16	Jan	BU Version_1	No Entity		
	Grade	Salary	Bonus	Employee Phone	Employee Email	Reporting Manager	
No Employee	Grade 1	500	50	555-1234	no.emp@oracle.co	Jerry R	
Employee 1	Grade 3	6500	650	555-4321	emp1@oracle.co	John S	
Employee 2	Grade 3	6200	620	555-2345	emp2@oracle.co	Elizabeth K	
Employee 3	Grade 1	4500	450	555-5432	emp3@oracle.co	John S	
Employee 4	Grade 2	5000	500	555-8765	emp4@oracle.co	Elizabeth K	
Employee 5	Grade 3	6000	600	555-9876	emp5@oracle.co	Jerry R	
Employee 6	Grade 1	4000	400	555-1234	emp6@oracle.co	Jerry R	
Employee 7	Grade 2	5000	500	555-1235	emp7@oracle.co	Elizabeth K	

$$\text{Bonus} = \text{Salary} * 0.1$$

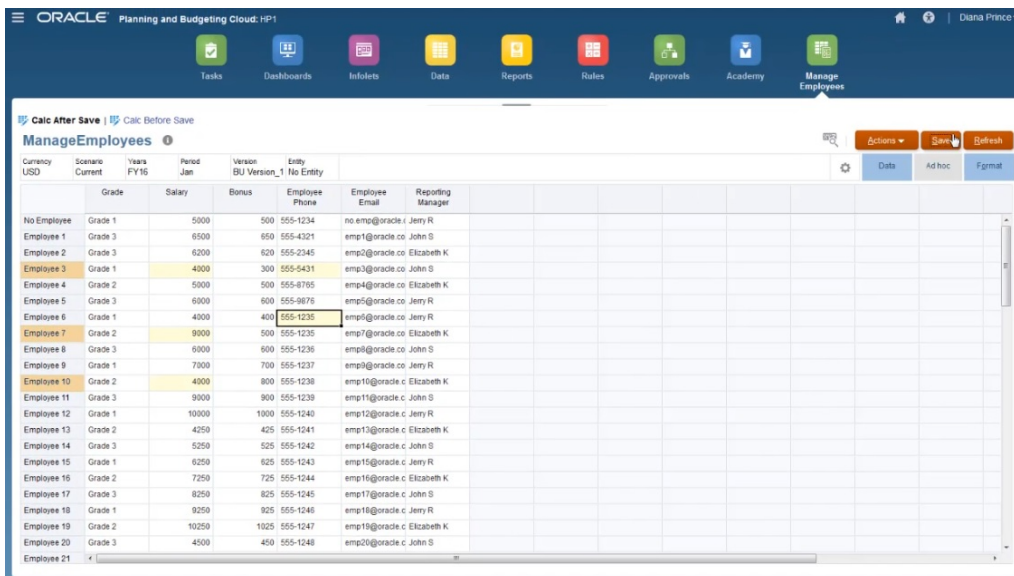
Let's look at calculating on save. Notice that this form is defined with a Groovy rule to calculate on save.

The screenshot shows the Oracle Planning and Budgeting Cloud interface. On the left, the 'ManageEmployees' form is displayed with a table of employee data. On the right, the 'Form and Ad Hoc Grid Management' dialog is open, showing the 'Business Rules' tab. The 'Business Rules' list includes several rules, and the 'Selected Business Rules' list on the right contains '<Calculate Currencies>' and '<Calculate Form>'. The 'Business Rules Properties' table at the bottom shows the configuration for the '<Calculate Bonus>' rule, with the 'Run After Save' checkbox checked and highlighted by a red box.

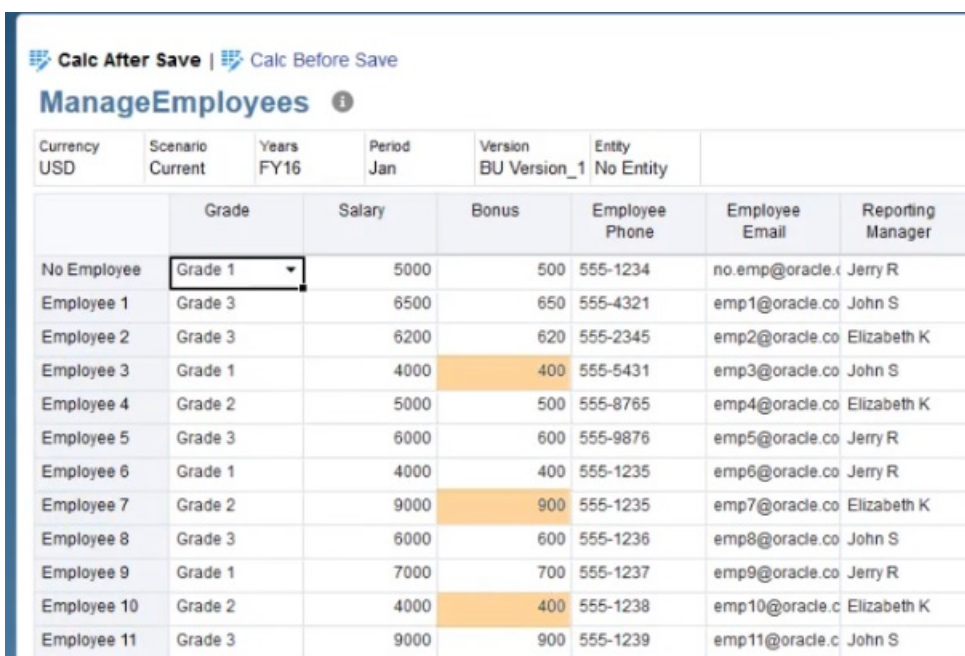
Business Rule	Description	Run Before Load	Run After Load	Run Before Save	Run After Save	Use Members on Form	Hide Prompt
<Calculate Currencies>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<Calculate Form>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan2 - Rule - CalculateBonusPostDataFormSave		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

After updating some of the salary data and some of the phone numbers on the form, the phone numbers are saved but don't affect the calculation.

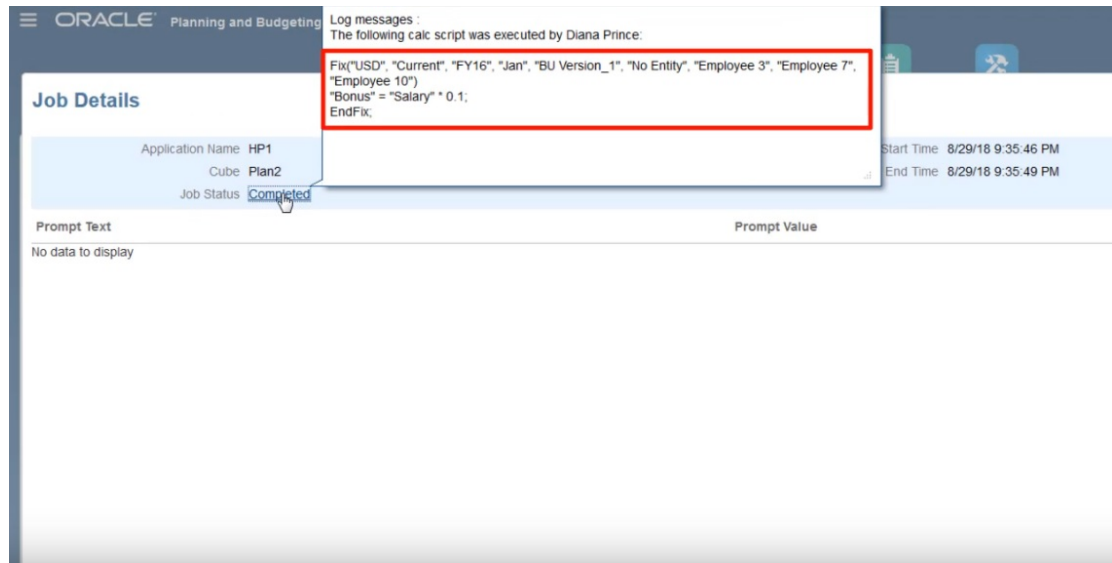




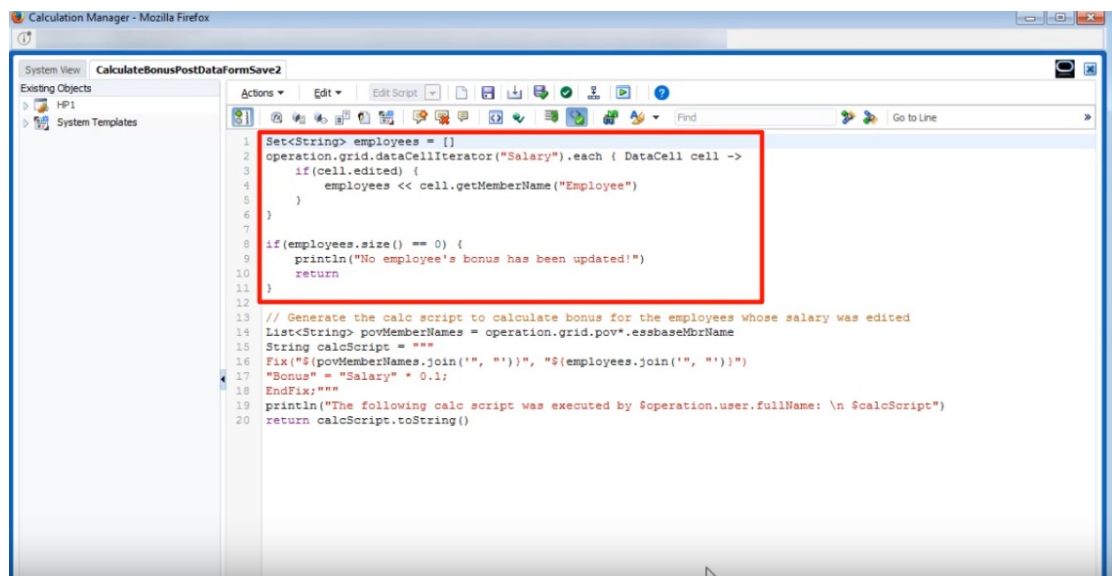
When you save the form to run the associated Groovy rule, the calculated bonus data is displayed on the form.



Viewing the job details, here's the calculation script that the Groovy rule created. Notice that the FIX statement includes only the modified employees.



Let's open Calculation Manager to see the Groovy rule. This first section iterates over the grid in the form to find Salary cells that have been edited and collects the related employee names.



This section generates the calculation script; it finds the POV members from the form, then creates a FIX statement on the POV members and the edited employees.

```

1 Set<String> employees = []
2 operation.grid.dataCellIterator("Salary").each { DataCell cell ->
3   if(cell.edited) {
4     employees << cell.getMemberName("Employee")
5   }
6 }
7
8 if(employees.size() == 0) {
9   println("No employee's bonus has been updated!")
10  return
11 }
12
13 // Generate the calc script to calculate bonus for the employees whose salary was edited
14 List<String> povMemberNames = operation.grid.pov*.essbaseMbrName
15 String calcScript = """
16 Fix("${povMemberNames.join(", ")}", "${employees.join(", ")}")
17 "Bonus" = "Salary" * 0.1;
18 EndFix;"""
19 println("The following calc script was executed by $operation.user.fullName: \n $calcScript")
20 return calcScript.toString()

```

Now let's take a look at calculating before save.

This is the same form, but now it's defined with a different Groovy rule to calculate before save.

The screenshot shows the Oracle Planning and Budgeting Cloud interface. On the left is a data table for 'Manage Employees Calc Bonus Before Save'. On the right is the 'Form and Ad Hoc Grid Management' configuration window. The 'Business Rules' tab is active, showing a list of rules. The rule 'Plan2 - Rule - Calculate Bonus Before Save' is highlighted, and its 'Run Before Save' checkbox is checked.

Business Rule	Description	Run Before Load	Run After Load	Run Before Save	Run After Save	Use Members on Form	Hide Prompt
<Calculate Currencies>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<Calculate Form>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan2 - Rule - Calculate Bonus Before Save		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

After updating the salary data and some of the phone numbers again, save the form to run the associated Groovy rule. The calculated bonus data is displayed on the form, but when you look at the job details, you can see that some of the bonus data was updated, but this time no calculation script was generated.

The screenshot shows the 'Job Details' section of the Oracle Planning and Budgeting Cloud interface. A 'Log messages' window is open, displaying the following message:

```

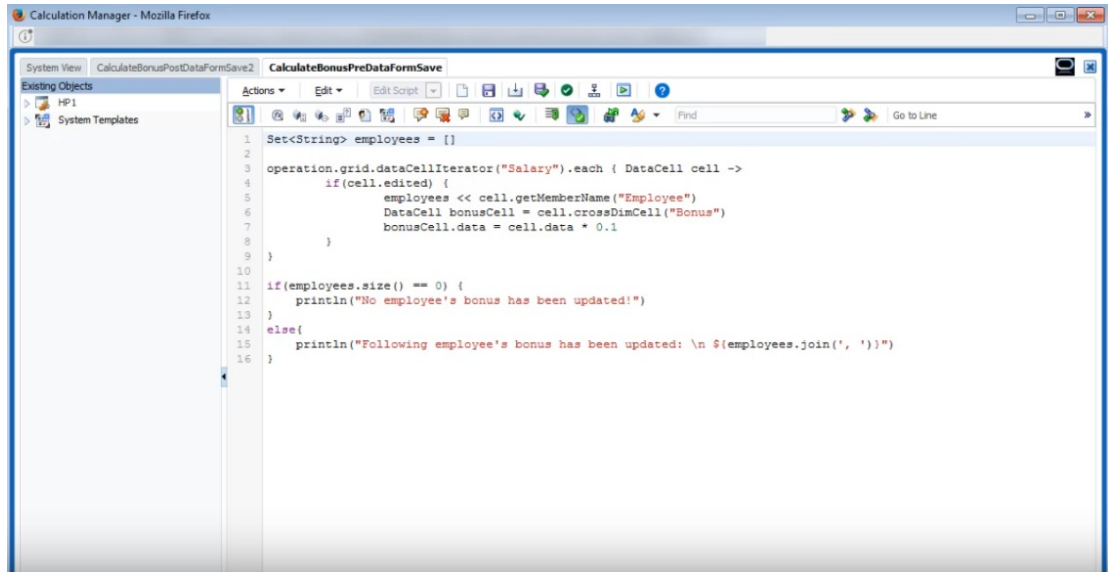
Following employee's bonus has been updated.
Employee 3, Employee 7, Employee 10

```

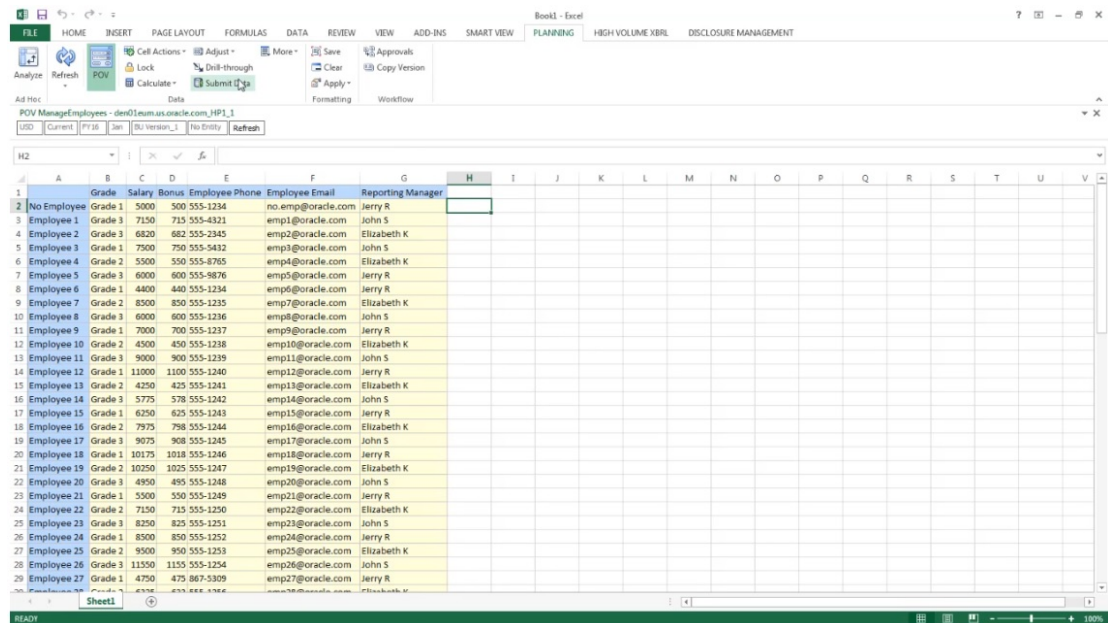
The job status is 'Completed'. The start time is 8/29/18 9:44:58 PM and the end time is 8/29/18 9:45:01 PM.

Open the Groovy rule in Calculation Manager.

Similar to the first rule, the script iterates over the grid in the form to find Salary cells that have been edited and collects the related employee names. Then it calculates bonus data for just the edited employees. Notice that no Oracle Essbase calculation script is generated.




Groovy rules also work with forms in Oracle Smart View for Office. Smart View gives you all the power of Microsoft Excel to make mass adjustments your data, and any Groovy rules for the form set to run before or after saving are executed when you submit data.

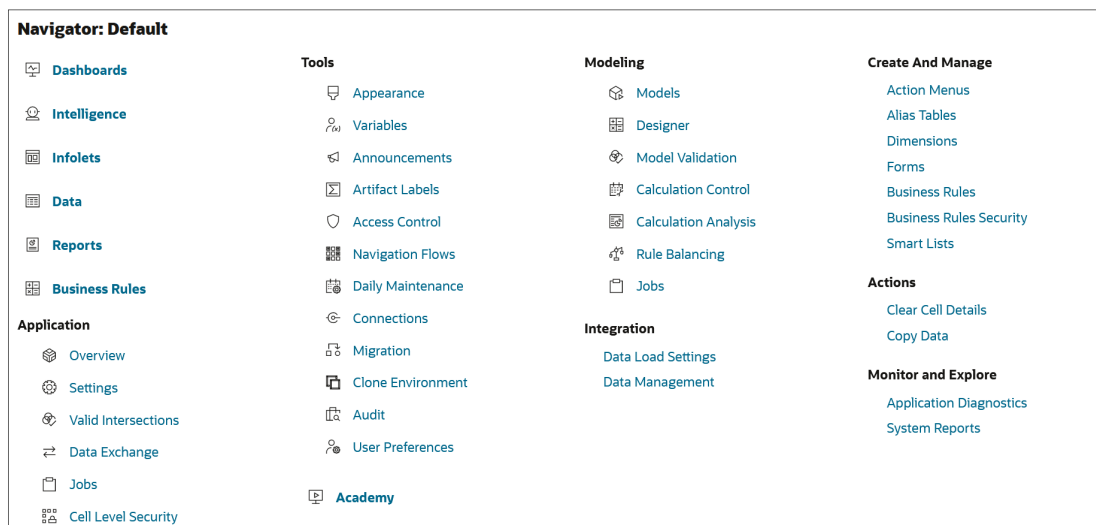


# Part VII

































## Administrative Tasks Accessed from the Navigator

Clicking **Navigator**  on the Home page displays a list of links that connect you to more Enterprise Profitability and Cost Management functionality.

Tasks that can also be completed from the Enterprise Profitability and Cost Management Home page are indicated with an icon by the task. For example, to access the Dashboards page, you could either click the Dashboards link from the Navigator, or you could click the Dashboards card on the Enterprise Profitability and Cost Management Home page.



**Navigator: Default**

-  [Dashboards](#)
-  [Intelligence](#)
-  [Infolets](#)
-  [Data](#)
-  [Reports](#)
-  [Business Rules](#)
- Application**
  -  [Overview](#)
  -  [Settings](#)
  -  [Valid Intersections](#)
  -  [Data Exchange](#)
  -  [Jobs](#)
  -  [Cell Level Security](#)
- Tools**
  -  [Appearance](#)
  -  [Variables](#)
  -  [Announcements](#)
  -  [Artifact Labels](#)
  -  [Access Control](#)
  -  [Navigation Flows](#)
  -  [Daily Maintenance](#)
  -  [Connections](#)
  -  [Migration](#)
  -  [Clone Environment](#)
  -  [Audit](#)
  -  [User Preferences](#)
  -  [Academy](#)
- Modeling**
  -  [Models](#)
  -  [Designer](#)
  -  [Model Validation](#)
  -  [Calculation Control](#)
  -  [Calculation Analysis](#)
  -  [Rule Balancing](#)
  -  [Jobs](#)
- Integration**
  - [Data Load Settings](#)
  - [Data Management](#)
- Create And Manage**
  - [Action Menus](#)
  - [Alias Tables](#)
  - [Dimensions](#)
  - [Forms](#)
  - [Business Rules](#)
  - [Business Rules Security](#)
  - [Smart Lists](#)
- Actions**
  - [Clear Cell Details](#)
  - [Copy Data](#)
- Monitor and Explore**
  - [Application Diagnostics](#)
  - [System Reports](#)

Tasks that are available only through the Navigator, and that *cannot* be completed from the Enterprise Profitability and Cost Management Home page, are displayed without an icon.

### **Note:**

The tasks available only through the Navigator are documented in both in the *Administering and Working with Enterprise Profitability and Cost Management* guide and in the *Administering Planning* guide. Clicking the links below will take you to the applicable sections in these guides.

### **Integration**

[Administering Data Load Settings](#)

[Importing Using Data Management](#)

### **Create and Manage**

[Administering Action Menus](#)

[Administering Alias Tables](#)

[Administering Dimensions](#)

[Administering Forms](#)

[Creating and Managing Business Rules](#)

[Managing Business Rule Security](#)

[Administering Smart Lists](#)

**Actions**

[Clearing Cell Details](#)

[Copying Data](#)

**Monitor and Explore**

[Administering Application Diagnostics](#)

# Part VIII

## Setting Up Access Permissions and Data Security

### Related Topics

- [About Managing Access and Data Security](#)
- [Working with Access Permissions](#)

# About Managing Access and Data Security

Enterprise Profitability and Cost Management implements several security layers to ensure that users have the right access to functions and data. Infrastructure security components, which are implemented and managed by Oracle, create a highly secure environment for the service.

Business process-level security is ensured by using the following mechanisms that permit only authorized users to access the application:

- Single Sign-on (SSO)
- Role-based access to data and artifacts

User access and data security in Enterprise Profitability and Cost Management is assigned using this process:

1. **Create users:** The Identity Domain Administrator creates or imports users using My Services. See *Creating Users Using Oracle Cloud Identity Console* in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.
2. **Assign predefined roles:** The Identity Domain Administrator assigns users to one of four predefined roles in My Services in order to provide them access to the service environment. See *Assigning Roles Using Identity Cloud Service* in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*. Each predefined role provides a different level of access to business functions and associated data. See [About Predefined Roles](#).
3. **Create groups:** After the predefined roles are assigned in My Services, Service Administrators can create groups in Access Control. Assigning roles to groups enables Service Administrators to grant roles to many users at once, thereby reducing administrative overhead. See *Managing Groups* in *Administering Access Control for Oracle Enterprise Performance Management Cloud*.
4. **Assign application roles:** Service Administrators can extend the capabilities of users and groups by assigning them application roles. See *Assigning Roles to a Group or a User* in *Administering Access Control for Oracle Enterprise Performance Management Cloud*. Application roles can be assigned to users to enable them to perform functions beyond the access that is granted by a predefined role. See [About Application Roles](#).
5. **Assign access permissions:** Access permissions determine how you interact with the contents of the artifacts that are made accessible by your predefined and application role assignments. Service Administrators use access permissions to assign users or groups Read, Write, or None permissions on specific application artifacts such as dimension members, reports, and forms. Service Administrators can also restrict access to certain cell intersections by implementing cell-level security. See [Working with Access Permissions](#).

## How Permissions and Data Access are Evaluated

Permissions and data access are evaluated in this order:



1. Predefined roles. Users with the Service Administrator role have permissions to all application artifacts.
2. Application roles.
3. Access permissions that are specifically assigned to a user or a group that a user belongs to.

 **Note:**

If one member belongs to two groups with different permissions assigned to group members, the least restrictive permission takes precedence. For example, if one group assigns the member Read permission and another group assigns the same member Write permission, Write takes precedence. However if one of the groups assigns no permission (None) to its members, None takes precedence over Read and Write.

4. Parent-level assignments (for example, to parent members or folders).

## About Predefined Roles

Predefined roles are assigned by the Identity Domain Administrator in My Services, and they provide users access to the service environment. See *Managing Users and Roles* in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

There are four predefined roles in Enterprise Profitability and Cost Management:

- **Service Administrator:** Performs all functional activities in an environment. This role should be granted to functional experts who need to create and administer Enterprise Profitability and Cost Management application and service components.
- **Power User:** Drives the model development and execution process.. This role grants high-level access to several functional areas within an environment and should be granted to the lead modelers and integrators working with the model, and business users in charge of a region who need to control the calculation process. Power Users can perform all the activities that a User can perform. Additionally, a Power User can perform these tasks:
  - Creates ad hoc grids and writes back into ad hoc grids and loads data using Data Integration
  - Creates, clears, and copies POV data
  - Creates and runs integrations
  - Creates models
  - Creates and edits profit curve
- **User:** Enters data where user input is requested, runs analytical tools and reports, and designs rules and calculations. Users can perform all the tasks that Viewers can perform. A User can perform these additional operations:
  - Performs ad hoc functions, but cannot write back into ad hoc grids or load data using Data Integration
  - Performs drill through
  - Creates, modifies, and deletes rules

- Performs mass edits of rules
- Runs rule balancing
- Runs validations
- Runs calculations, views and deletes calculation history
- **Viewer:** Views and analyzes data but does not have write access. Specifically, a Viewer performs these operations:
  - Runs profit curves
  - Runs trace allocations
  - View models

For details on what access each predefined role grants, see Enterprise Profitability and Cost Management in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

Predefined roles are hierarchical. Access granted through lower-level roles is inherited by higher-level roles. For example, Service Administrators, in addition to the access that only they have, inherit the access granted through Power User, User, and Viewer roles.

The following table lists the functional areas in the service that can be accessed by each predefined role. Service Administrators can access all functional areas in the service.

**Table 24-1 Functional Area by Predefined Role**

Functional Area	Power User	User	Viewer
Dashboard	Yes	Yes	Yes
Intelligence	Yes	Yes	Yes
Infolets	Yes	Yes	Yes
Data	Yes	Yes	Yes
Reports	Yes	Yes	Yes
Application Cluster	No	No	No
Tools Cluster	User Preferences Only	User Preferences Only	User Preferences Only
Academy	Yes	Yes	Yes
Modeling Cluster	Yes	Yes	No

## About Application Roles

Application roles enable Service Administrators to customize a user's access beyond the capabilities granted to that user by a predefined role. While users with the Service Administrator or Power User roles can access most of the functional areas in Enterprise Profitability and Cost Management, users with the User or Viewer predefined roles have a much more limited set of access privileges provided to them by their predefined roles. Application roles enable these users to access functionality that their predefined role does not grant them by default.

For example, suppose you had a user who needs to be able to run the Rule Balancing report but does not need the ability to edit rules. Instead of granting that user the Power User role (which would give them access to Rule Balancing but also grant them the ability to edit rules), you can grant them the Viewer role (which does not include access to edit rules) and then grant them the **Run Rule Balancing** application role.

 **Note:**

Application roles can only enhance the access rights of users; none of the privileges granted by a predefined role can be restricted by assigning an application role.

For a list of available application roles in Enterprise Profitability and Cost Management, see Application Roles in *Administering Access Control for Oracle Enterprise Performance Management Cloud*.

 **Note:**

Some application roles are already included in one or more predefined roles. For details, see Predefined Role Mapping in *Administering Access Control for Oracle Enterprise Performance Management Cloud*. You cannot assign additional application roles to a predefined role.

## Managing Application Ownership

The Service Administrator who creates the application is auto-assigned the Application Owner function. When a Service Administrator with the Application Owner function is deleted or when the user's predefined role assignment is downgraded (for example, from Service Administrator to Power User), the Application Owner function is reassigned to the next available Service Administrator user (in alphabetical order) for the application, and then role of the current Application Owner user is deleted or changed to sync up with Access Control.

If there are no available Service Administrators, then the Service Administrator user is not deleted or the role is not changed. Oracle will contact you with next steps to resolve the issue.

Any Service Administrator can use **System Settings** to take over or reassign the Application Owner role to any available Service Administrator.

See [Managing Application and System Settings](#).

# Working with Access Permissions

Access permissions enable Service Administrators to assign permissions to users and groups for specific application artifacts.

Service Administrators can configure **Read**, **Write**, or **None** access permissions on these application artifacts:

- Dimensions, including user-defined dimensions. See [Enabling or Disabling Security for Dimensions](#)
- Forms
- Dashboards
- Infolets
- Reports, Books, and Bursting Definitions
- Form folders
- Dashboard folders
- Infolet folders
- Reports and Documents folders

You can specify access permission for individual users and each group. When you assign a user to a group, that user acquires the group's access permissions. If an individual's access permissions conflict with those of a group the user belongs to, user access permissions take precedence.

## Types of Access Permissions

Access permissions include Read, Write, and None. You can also set who can launch which rules.

- **Launch:** Allow launch privileges

 **Note:**

View user types have no Write permission to dimension members, so can't launch rules having runtime prompts that include members, dimensions, member ranges, or cross-dimension runtime prompt types. They can, however, launch rules having runtime prompts of other types (for example, date type).

- **No Launch:** Disallow launch privileges

 **Note:**

If a user inherits Launch permission to a rule by belonging to a group, and is also assigned No Launch permissions by belonging to another group, the more restrictive No Launch assignment takes precedence.

You can specify access permission for individual users and each group. When you assign a user to a group, that user acquires the group's access permissions. If an individual's access permissions conflict with those of a group the user belongs to, user access permissions take precedence.

You can use groups to provide access permissions to your application artifacts such as forms, rules, and dashboards. Oracle Enterprise Performance Management Cloud recognizes three types of groups:

- **Predefined:** These groups are automatically created for each predefined role. All users are assigned to a predefined group based on their predefined role (for example, Power User).
- **EPM:** These are the groups that you create in **Access Control in Tools**.
- **IDCS:** These are the groups that you create in the Oracle Cloud Identity Console. You can view them in **Access Control** and assign them to application roles and EPM groups.

For more information, see Manage Groups in *Administering Access Control for Oracle Enterprise Performance Management Cloud*.

### Inheriting Permissions

Inheritance determines the user or group's access permissions. You can specify an attribute that causes the children or descendants of that member to inherit its permissions. Assigned permissions take precedence over inherited permissions. You can include or exclude the member from the permissions setting.

**Table 25-1 Options for Inheriting Access Permissions**

Inheritance Option	Permission Assignment
<b>Member</b>	Only to the currently selected member
<b>Children</b>	To all children members in the level below the currently selected member
<b>iChildren</b>	To the currently selected member and all children members in the level below it
<b>Descendant</b>	To all descendant members below the currently selected member
<b>iDescendant</b>	To the currently selected member and all descendant members below it

### How Permissions are Evaluated

When evaluating permissions, the application gives precedence in this order:

1. Role-level security. Users with the Service Administrator role have permissions to all application elements.

2. For Power User, User, and Viewer user types, permissions that are specifically assigned to users.
3. Permission assignments that are acquired by belonging to a group.

 **Note:**

If one member belongs to two groups with different permissions assigned to group members, the least restrictive permission takes precedence. For example, if one group assigns the member Read permission and another group assigns the same member Write permission, Write takes precedence. However if one of the groups assigns no permission (None) to its members, None takes precedence over Read and Write.

4. Parent-level assignments (for example, to parent members or folders).

## About Assigning Access Permissions

Service Administrators can assign permissions to artifacts (forms, dashboards, infolets, reports, books, and bursting definitions) and folders.

Principles:

- **Artifacts (Forms, Dashboards, Infolets, Reports, Books, and Bursting Definitions):**
  - Users and Power Users can view or enter data only into forms to which they have permissions (and can work only with members to which they have permissions).
  - Service Administrators and Power Users can design artifacts.
  - Power Users can access artifacts they created or to which a Service Administrator assigned them permissions.
  - Service Administrators have Write permissions to all dimension members and to all artifacts.
- **Folders:**
  - Users who are assigned permissions to a folder can access the items in that folder, unless they are assigned more specific permissions.
  - When you assign permissions to a folder, all folders under it inherit that permission.
  - If you assign specific permissions (for example, None or Write) to a folder, that permission takes precedence over its parent folder's permissions. For example, if a user has Write permission to Folder1 that contains Folder2 to which the user has None permission, the user can open Folder1, but doesn't see Folder2.
  - If a user has None permission to a folder called Folder1 that contains a form called Form1 to which the user has Write permission, the user can see Folder1 and Form1.


## Adding, Changing, and Removing Permissions to Artifacts and Folders

The permissions assigned to artifacts (forms, dashboards, infolets, and reports, books, and bursting definitions) and folders refer to the ability to modify the artifact and folder definitions and not the underlying data.

1. Navigate to the artifact (Data, Dashboards, Infolets, Reports, or Documents) listing page.
2. Click the Actions icon next to the artifact or folder, and then click **Assign Permission**.

 **Note:**

You can assign permissions to only one artifact or folder at a time.

3. Click **Permissions**.
4. Perform a task:
  - To add permissions, click **Add User/Group**, and then select from the list of available users and groups.
  - To edit the type of permissions, select an option:
    - Click **Read** to allow the selected users and groups to view the artifact or folder in the listing, but not allow them to create, edit, or delete the artifact or folder information.
    - Click **Write** to allow the selected users and groups to view the artifact or folder in the listing, and to create, edit, or delete the artifact or folder information.
    - Click **None** if you don't want the selected users or groups to view the artifact or folder in the listing.
  - To remove permissions, click **Remove Access**  next to the user or group.



## Enabling or Disabling Security for Dimensions

You can enable security for dimensions, including user-defined Custom dimensions. Applying security enables the access granted by the predefined roles to apply to a dimension. If you do not set security on a dimension, all users can access the dimension members.

By default, the Scenario and Version dimensions are enabled for access permissions. Optionally, you can assign access to Account, Entity, PCM\_Balance, PCM\_Rule, Period, and Years.

You can assign security to dimension members for user and groups. You can assign security at a member level or parent level. See [Assigning Security to Dimension Members](#).

To enable or disable security for a dimension:

1. Click the Navigator  icon.
2. Under **Create and Manage**, click **Dimensions**.
3. From the **Dimension** drop down menu, select a dimension, and then click **Edit** .
4. From the **Edit Dimension Properties** page, select an option:
  - To enable security, click **Apply Security**.

 **Note:**

If you do not select this option, there is no security on the dimension, and users can access its members without restriction.



- To disable security clear **Apply Security**.
5. Click **Save**.

## Assigning Security to Dimension Members

Before you can assign access to dimension members, you must select the **Apply Security** check box on the dimension's Edit Dimension Properties page. See [Enabling or Disabling Security for Dimensions](#).

You can assign security to dimension members at a member level or at a parent level. Use **Member Level** to specify whether the children or descendants of that member will inherit its permissions. Assigned permissions take precedence over inherited permissions.

To assign, edit, and remove access permissions to members:

1. Click the Navigator  icon.
2. Under **Create and Manage**, click **Dimensions**.
3. From the **Dimension** drop down menu, select the dimension that contains that member that you want to assign security to.
4. Select the member, and then click **Assign Access** .
5. Select the User or Group tab to assign access to individual users or groups.
6. To add access:
  - a. Click **Actions**, and then **Add Access**.
  - b. Select the user or group to add access to.
  - c. From **Type of Access**, select an option:
    - **Read**
    - **Write**
    - **None**
  - d. **Optional:** Select a member level:
    - **Member**



- **Children**
- **Children(inclusive)**
- **Descendants**
- **Descendants(inclusive)**

e. Click **Add**.

To modify access:

1. From the Dimension screen, on the member to edit access for, click **Assign**

**Access**  .

2. Select the user or group access rights to edit, click **Actions**, and then **Edit Access**.

3. From **Type of Access**, select an option:

- **Read**
- **Write**
- **None**

4. **Optional:** Select a member level:

- **Member**
- **Children**
- **Children(inclusive)**
- **Descendants**
- **Descendants(inclusive)**

5. Click **Set**.

To remove access:

1. From the Dimension screen, on the member to remove access for, click **Assign**

**Access**  .

2. Select the user or group access rights to edit, click **Actions**, and then **Remove Access**.

3. Click **OK** on the confirmation dialog box.

## About Effective Access Permissions to Shared Members

You can't assign access directly to a shared member. A shared member inherits access permissions from its base member, parent, or ancestor.

The application checks access permissions at each level, first by user, then by group, based on the member's access permissions inheritance relationship. If multiple access permissions exist, the least restrictive access permission is applied (for example, Write access takes precedence over Read access).

### Sample Parent and Child Entity Members



**Table 25-2 Example of Inherited Access to Shared Members**

Case	Access Permission	Effective Access for Base and Shared Member CA	Explanation
Case 1	CA (base) = None iDescendants (West) = Read	Read	CA inherits Read access from its West parent because Read is less restrictive than None.
Case 2	iDescendants (United States) = None iDescendants (West) = Read iDescendants (Sales Region 1) = Write	Write	CA inherits Write access from its Sales Region 1 parent because Write is less restrictive than Read or None.
Case 3	iDescendants (United States) = Write iDescendants (West) = None iDescendants (Sales Region 1) = Read	Write	CA inherits Write access from its United States parent because Write is less restrictive than Read or None.

## Defining Cell-Level Security

### Related Topics

- [Understanding Cell-Level Security](#)
- [Creating Cell-Level Security Definitions](#)
- [Viewing Cell-Level Security Definitions](#)
- [Filtering Cell-Level Security Definitions](#)
- [Importing and Exporting Cell-Level Security Definitions](#)
- [Testing Cell-Level Security](#)
- [Reordering the Cell-Level Security Definitions List](#)

## Understanding Cell-Level Security

### About Cell-Level Security



Service Administrators applying cell-level security can deny access to cells that a user would normally have access to due to their regular security. Cell-level security is therefore defined as an exception to the existing member security. For example, a Department Manager requires access to all accounts in their own department, but only a certain account in all other departments. With the usual metadata security the Manager would have access to all accounts across all departments, but using cell-level security enables the Service Administrator to control the intersection of all accounts with the Manager's department and only the specific account in all other departments.

Cell-level security uses rules, similar to valid intersection rules, to deny read or write access to users viewing certain cell intersections anywhere a cell is shown (for example, forms, runtime prompts, Smart View, reports, dashboards, infolets, and so on). When cell-level security rules are applied, users with read access can see the data value in a cell but the cell is not editable. If users are denied read access to a cell, the value displayed in the cell is #noaccess.

If you are a Service Administrator, you can define and assign cell-level security rules to any user or group. Cell-level security doesn't affect you.

### Anchor and Nonanchor Dimensions



Cell-level security definitions use anchor and nonanchor dimensions:

- Anchor dimensions are always required dimensions in the cube that is used in the cell-level security definition.
- Nonanchor dimensions are either required or not:
  - If a nonanchor dimension is required, any cube that doesn't use that dimension will ignore any cell-level security definitions where that dimension is tagged as required.
  - If a nonanchor dimension isn't required, any cube that doesn't use that dimension will still evaluate any cell-level security definition that includes that dimension as not required and evaluate the definitions of any other dimensions in the definition in use in the cube.
  - By default, nonanchor dimensions aren't required. To make a nonanchor dimension required, click  next to the nonanchor dimension, and click **Required**.
- By default, the anchor dimension members that are not specified in the rule are included in the security definition, but you can clear this option by clicking  next to the anchor dimension, and then clicking **Apply to Selected Members Only**.



## Creating Cell-Level Security Definitions


To create a cell-level security definition:

1. Click **Application**, and then click **Cell-Level Security**.
2. Create the definition:

- a. Click **Create**.
- b. Enter a name and description for the definition.
- c. The **Enabled** checkbox is selected by default. To disable the definition, clear the **Enabled** checkbox. You can also enable or disable a definition directly on the **Cell-Level Security Definitions** page.
- d. To define cube-specific security, click **Cubes** and select from the list of cubes or select **All**.
- e. An anchor dimension is required. To select the anchor dimension, click **Select Anchor Dimension**. For information about anchor and nonanchor dimensions, see [Understanding Cell-Level Security](#)
- f. **Optional:** By default, the anchor dimension members that are not specified in the rule are included in the security definition. To clear this option, click  next to the anchor dimension, and then click **Apply to Selected Members Only**.
- g. To select additional dimensions (called nonanchor dimensions), click **Add Dimension**.
- h. **Optional:** By default, nonanchor dimensions are not required. To make a nonanchor dimension required, click  next to the nonanchor dimension, and click **Required**.

3. Define the cell-level security rule:

- a. Click **Add Rule**.
- b. In the **Users, Groups** column, click  to find the users and groups to include in the cell-level security rule.
- c. For **Restriction**, choose **Deny Read** (default) or **Deny Write**. **Deny Read** is the default option because it is the most restrictive. If users are denied read access to a cell, the value displayed in the cell is #noaccess. Users with **Deny Write** access can see the data value in a cell but the cell is not editable.
- d. Click  next to the dimensions in the new rule:
  - Click **Edit** to open the **Select Members** page and select the members, substitution variables, and attributes to include in the cell-level security rule.
  - Click **Exclude** or **Exclude All** to define the dimension members you want to exclude from the rule:
    - **Exclude:** Selecting this option excludes members by ID. Only the specified members (base or shared) will be excluded.
    - **Exclude All:** Selecting this option excludes members by name. If a base member is specified, then the base and all of its shared members will be excluded. If a shared member is specified, then this member, its base member, and all other shared members of this member will be excluded.
  - Click **Clear** to clear the selection.

To delete a rule, click .




4. Click **Save**.

The new cell-level security definition is added to the end of the list. Definitions are evaluated in the order they appear in the list. To reorder the definitions list, see [Reordering the Cell-Level Security Definitions List](#).

After a definition is created, you can test it in a form to see how the form will look from a user's perspective. See [Testing Cell-Level Security](#).

## Viewing Cell-Level Security Definitions

To view cell-level security definitions:



1. Click **Application**, and then click **Cell-Level Security**.
2. To search the entire listing for certain definitions, enter search criteria in the **Search** box and then click  to display only the definitions that meet the search criteria.
3. To filter the listing so it displays only the definitions that meet the filter criteria, specify the following filter options:
  - : Click to display the **Filter** page where you can select from a robust list of filter options. For a complete list of filter options and their descriptions, see [Filtering Cell-Level Security Definitions](#).
  - : Click to clear all filters for **Effective Assignment**, **Enabled**, and **Restriction**.
  - **Effective Assignment**: Filters the list so you view only the definitions that effect certain users or groups.
  - **Enabled**: Filters the list so you view only the definitions that are enabled (**Yes**), not enabled (**No**), or select **All**.
  - **Restriction**: Filters the list so you view only the definitions that are assigned the **Deny Read** or **Deny Write** restriction, or select **All**.
4. You can also perform these tasks on the **Cell-Level Security Definitions** page:
  - **Actions** menu: To import and export definitions, see [Importing and Exporting Cell-Level Security Definitions](#).
  - **Test**: See [Testing Cell-Level Security](#).
  - **Create**: See [Creating Cell-Level Security Definitions](#).
  - **Refresh**: Click to refresh the definitions listing.
5. For each listing on the definitions page you can perform the following tasks:
  - **Enabled** column: Indicates whether a definition is enabled. Click the check mark next to the definition to disable or enable it. A green check mark indicates that the definition is enabled.
  - **Action** column: Click **•••** to edit, duplicate, or delete a definition, or to move it up or down in the listing order.

## Filtering Cell-Level Security Definitions

You can filter the list of cell-level security definitions by certain criteria such as by cube, by restriction, or by date. When you filter, only the definitions that meet the filter criteria are displayed on the **Cell-Level Security Definitions** page.

To filter cell-level security definitions:

1. Click **Application**, and then click **Cell-Level Security**.

2. Click  to specify filter criteria:
  - **Cubes:** View only the definitions in the selected cube or cubes, or select **All**.
  - **Enabled:** View only the definitions that are enabled (**Yes**), not enabled (**No**), or select **All**.
  - **Restriction:** View only the definitions that are assigned the **Deny Read** or **Deny Write** restriction, or select **All**.
  - **Modified:** View only the definitions that were modified before or after a certain date and time, or the definitions modified within a range of dates or times. Select **After**, **Before**, or **Between** and then click  to specify the date and time criteria.
  - **Modified By:** View only the definitions modified by selected users.
  - **Effective Assignment:** View only the definitions that effect the selected users or groups.
3. Click **More** to further refine the filter criteria:
  - **Dimensions**
  - **Anchor Dimensions**
  - **Anchor Dimension: Apply to Selected Members Only:** Choose **Yes**, **No**, or **All**.
  - **Additional Dimensions Required:** Choose **Yes**, **No**, or **All**.
4. Click **Apply**.

## Importing and Exporting Cell-Level Security Definitions

### About Importing and Exporting Cell-Level Security Definitions

You can export the filtered list of cell-level security definitions from the listing page to a location on your local computer, or you can export them to the server. If no filter is defined on the listing page, then all cell-level security definitions are exported.

Use the Import action to import cell-level security definitions into the application from a location on your local computer or import them from the server. When you perform an import, the system tests the import file for anything that might break a definition; for example, if a cube is missing, or if an anchor dimension doesn't exist, or if a subrule is not found, errors are logged in the error file. Import jobs will only complete successfully if the import file has no errors.



#### Note:

Subrules provide information about the content of the rules such as the user assignment for each member of the rule (subrule), the member selection or exclusion for anchor and non anchor dimensions, and the restriction type applied for each subrule.

Depending on the export or import location you choose, the application definitions are exported or imported in either an Excel file format (XLSX) or a zip file format.

### Cell-Level Security Import File

The Excel import file must have two sheets with the following names for the first and second sheets:

1. Rules
2. Sub Rules

The `Rules` sheet has the following column headings:


- **Name**
- **Position**
- **Description**
- **Enabled**
- **Valid Cubes** - This column can contain either `All` or a list of comma-separated names of cubes, such as `Plan1, Plan2`
- **Anchor Dim Name**
- **Anchor Dimension Apply to Unselected Members**
- **Dim1**
- **Dim1 Required**
- **Dim2**
- **Dim2 Required**
- **DimX**
- **DimX Required**

The `Sub Rules` sheet must have the following column headings:

- **Name** - This column must contain the name of the Rule from the first sheet
- **Users**
- **User Groups**
- **Restriction** This column can contain `Deny Read` or `Deny Write`
- **Anchor Members**
- **Anchor Exclusion**
- **Anchor Exclusion All**
- **Dim1 Members**
- **Dim1 Exclusion**
- **Dim1 Exclusion All**
- **Dim2 Members**
- **Dim2 Exclusion**
- **DimX Members**
- **DimX Exclusion**
- **DimX Exclusion All**

### Exporting and Importing Cell-Level Security Definitions


To export and import cell-level security definitions:

1. Click **Application**, and then click **Cell-Level Security**.
2. Apply filters to the listing, as needed. See [Filtering Cell-Level Security Definitions](#).
3. To export, click **Actions**, then **Export**, and then select the target location for the export file:
  - **Local**: Saves the export file to a location on your local computer. If you choose this option, click **Export**, and then specify where to save the XLSX export file.
  - **Outbox**: Runs a job that saves the export file in a zip format to the server which you can download now or use to schedule an export job later. If you choose this option, click **Save and Run Job**.  
To download the export file from the Outbox:
    - a. Click **Application**, and then click **Jobs**.
    - b. Under **Recent Activity** click the **Export CLS** job.
    - c. On the **Job Details** page, click  to select a download location for the cell-level security export file. You can also download the export file from the Inbox/Outbox Explorer for your business process.
4. If editing the export file in Excel, note that the Excel file has two sheets: *Rules* and *Sub Rules*.
5. To import, click **Actions**, then **Import**, and then select the location of the import source file:
  - **Local**: Loads the import file from a location on your computer. For **Source File**, click **Browse** to select the import file on your computer, and then click **Import**.
  - **Inbox**: Runs a job that loads the import file from the server. The import file must be in a zip file format. Enter the name of the file in **Source File**, click **Save and Run Job**, and then specify the **Name** and **Error File** on the **Save as Job** dialog. The error file provides information about the definitions that were not imported. You can download the error file from the Inbox/Outbox Explorer for your business process.

## Testing Cell-Level Security

After defining cell-level security and enabling it, you can test it to see what an effected user would see when they view a form. Testing ensures that users are seeing only the cell values they are allowed to see and nobody is seeing more than they should. To test a definition, you must enable it.

To test cell-level security:

1. Click **Application**, and then click **Cell-Level Security**.
2. Enable the definition you want to test.
3. Click **Test**, and then select the form that you want to test.
4. In the **Select or Enter a User Name** text box, specify a user name or click  to select a user, and then click OK.



 **Note:**

You can test only one user at a time.

The form displays the user access to each cell as Read, Write, or None.

## Reordering the Cell-Level Security Definitions List

Cell-level security definitions are evaluated in the order they appear on the definitions list; for example, the application evaluates the first cell-level security definition in the list, then the second definition, and so on.

To change the position of a cell-level security definition in the list:

1. Click **Application**, and then click **Cell-Level Security**.
2. To the right of the cell-level security definition, click **•••**.
3. Select **Move Up** or **Move Down**.


 **Tip:**

You can also drag cell-level security definitions to move them up and down in the list.

## Reporting on Access Permissions


You can view current access permissions and print reports.

To report on current access permissions for users and groups in the application:

1. From the Home page, click Navigator , and then under **Monitor and Explore**, click **System Reports**.
2. Click **Access Control**.
3. On **Select User or Group**, select from the available options.
4. From the left **Available** panel, select and move users or groups on which to report to the **Selected** panel.
5. From the left **Available Objects** panel, select and move objects on which to report to the **Selected Objects** panel.
6. Select reporting options:
  - For **Show Matching Access of Type**, select the access to view: **Read**, **Write**, or **None**.
  - For **Group the Results By**, select how to view the report: **Users** or **Objects**.
  - From the **Report Type** sections, select **Assigned Access** or **Effective Access**.

**Table 25-3 Access Report Types**

Report Type	Description	Options
<b>Assigned Access</b>	Summarizes access permissions that Service Administrators assign	Specify whether access permissions are assigned by member selection relation or group membership: <ul style="list-style-type: none"> <li>• <b>Show matching access of relation: Member, Children, Children (inclusive), Descendants, or Descendants (inclusive).</b></li> <li>• <b>Show Inherited From Group:</b> Shows access permissions inherited by users in a group.</li> </ul>
<b>Effective Access</b>	Summarizes access permission assignments as the application evaluates them (for example, by member selection relation, such as children, or group membership). This is useful if there are conflicts in access permissions.	Describe the origin of the effective access permissions by selecting <b>Show effective access origin</b> . For example, a user named JSomebody may be assigned Write access permissions to Entity1 and belong to a group named Sales that is assigned Read access permissions to Entity1. This setting would show that JSomebody has Write access permissions to Entity1 because individual assigned access permissions supersede access permissions inherited by group membership.

 **Note:**  
Effective Access reports can't be generated for groups.

7. Click **Create Report**.

# Part IX

## Appendices

### Related Topics

- [Best Practices](#)
- [Frequently Asked Questions \(FAQ\) about Enterprise Profitability and Cost Management](#)  
This FAQ provides links to resources for frequently asked questions about tasks in Enterprise Profitability and Cost Management.
- [Using the Member Selector](#)
- [About Selecting Members](#)
- [Selecting a Dimension](#)
- [Defining Member Display Options](#)
- [Searching for Members](#)
- [Filtering Which Members Are Displayed](#)
- [Filtering by Attributes](#)
- [Filtering by Level](#)
- [Filtering by Generation](#)
- [Filtering by Member Relationship](#)
- [Member Relationships](#)
- [Making Member Selections](#)
- [Selecting Members for Forms 1.0 and Dashboards 1.0](#)
- [About Selecting Members for Forms 1.0 and Dashboards 1.0](#)
- [Member Relationships](#)
- [Selecting Members](#)
- [Considerations When Selecting Members](#)
- [Selecting Attribute Values as Members](#)
- [Selecting Substitution Variables as Members](#)
- [Selecting User Variables as Members](#)
- [Naming Restrictions](#)
- [Migrating from Profitability and Cost Management to Enterprise Profitability and Cost Management](#)

# 26

## Best Practices

Best practices describe effective ways to use a feature. The following table provides links to the best practices discussed in this guide.

<b>Category</b>	<b>Best Practice For</b>	<b>See this Section</b>
Creating and Managing Applications	Designing an application	<a href="#">Application Design Best Practices</a>
Managing Dimensions	Designing dimensions	<a href="#">Best Practices When Designing Dimensions</a>
Creating and Managing Rules	Creating Rule Sets	<a href="#">Rule Set Design Best Practices</a>
Creating Allocation Rules	Defining an allocation rule source and destination	<a href="#">Best Practices for Allocation Rule Source and Destination</a>
	Defining an allocation rule driver	<a href="#">Best Practices for Allocation Rule Drivers</a>
	Defining an allocation rule offset	<a href="#">Best Practices for Allocation Rule Offsets</a>
Creating Custom Calculation Rules	Creating a custom calculation rule	<a href="#">About Creating Custom Calculation Rules</a>
Viewing Rule Balancing Reports	Designing data forms for rule balancing	<a href="#">Best Practices for Designing Rule Balancing Data Forms</a>
Troubleshooting Database Refresh Issues	Optimizing ASO cubes	<a href="#">Optimizing Aggregate Storage Option Cubes</a>
	Improving cube performance	<a href="#">Improving Cube Performance</a>

# Frequently Asked Questions (FAQ) about Enterprise Profitability and Cost Management

This FAQ provides links to resources for frequently asked questions about tasks in Enterprise Profitability and Cost Management.



## Note:

For frequently asked questions covering various topics related to Oracle Enterprise Performance Management Cloud, see [Getting Started with Oracle Enterprise Performance Management Cloud for Administrators](#).

## Frequently Asked Questions

- [What are the differences between Enterprise Profitability and Cost Management and Profitability and Cost Management?](#)
- [How do you enable Non-Empty Tuples \(NET\) in Enterprise Profitability and Cost Management?](#)

### What are the differences between Enterprise Profitability and Cost Management and Profitability and Cost Management?

Review the key differences between Enterprise Profitability and Cost Management and Profitability and Cost Management in the tutorial titled [Migrating from Profitability and Cost Management to Enterprise Profitability and Cost Management](#). Once you open the tutorial, navigate to Task 1: Comparing Profitability and Task Management to Enterprise Profitability and Cost Management.

### How do you enable Non-Empty Tuples (NET) in Enterprise Profitability and Cost Management?

To enable NET in Enterprise Profitability and Cost Management:

1. Ask Support to file a status 60 bug with the development team for the request; include "NET" in the bug subject.
2. Development generates a UUID key and enters it in the bug. Use this key in a substitution variable that you create to enable NET.
3. Create a substitution variable:
  - a. Select **Tools**, then **Variables**, and click the **Substitution Variables** tab.
  - b. Click **+** to create a new substitution variable, and enter the following information:
    - **Cube:** Leave the cube at the default value of **All Cubes**.
    - **Name:** Enter **EPCM\_CALC\_NONEMPTY\_TUPLE** as the variable name.
    - **Value:** Enter the UUID key supplied by development as the variable value.



# Using the Member Selector

## Related Topics

- [About Selecting Members](#)
- [Selecting a Dimension](#)
- [Defining Member Display Options](#)
- [Searching for Members](#)
- [Filtering Which Members Are Displayed](#)
- [Making Member Selections](#)
- [Selecting Members for Forms 1.0 and Dashboards 1.0](#)

## About Selecting Members

You select members in the **Select Members** dialog box. The options in the dialog box may differ slightly depending on the feature for which you are selecting members.

You can select members to use with the following features:

- **Models:** Use member selection to specify default members in a model context.
- **Rule Sets:** Use member selection to specify default members in a rule set context.
- **Allocation Rules:** Use member selection to define the intersections for the allocation source and destination, driver, and allocation offset.
- **Custom Calculation Rules:** Use member selection to define the target members for which to perform a calculation in a custom calculation rule.
- **Forms 2.0:** Use member selection to define the rows, columns, and the point of view to use in a form, and to select members for business rules run-time prompts.
- **Dashboards 2.0:** Use member selection to define the Global or Local POV, and to select members for business rules run-time prompts.
- **Ad hoc grids:** Use member selection to define the POV, rows, and columns, and to set the user variables, substitution variables, and attributes in an ad hoc grid.

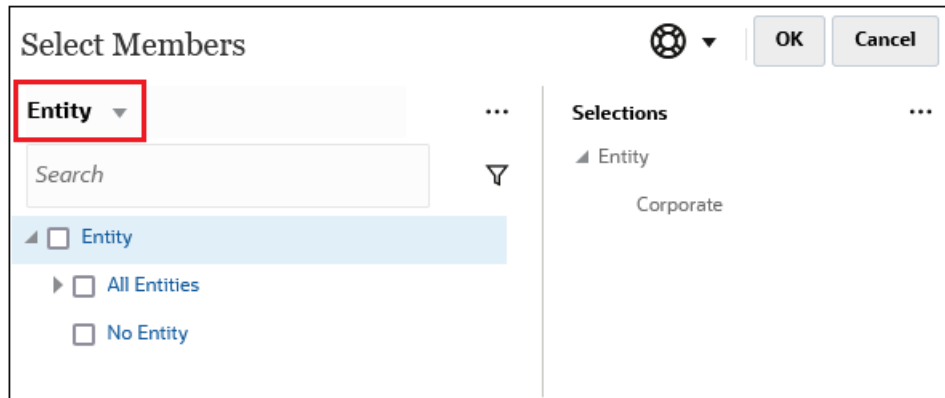


### Note:

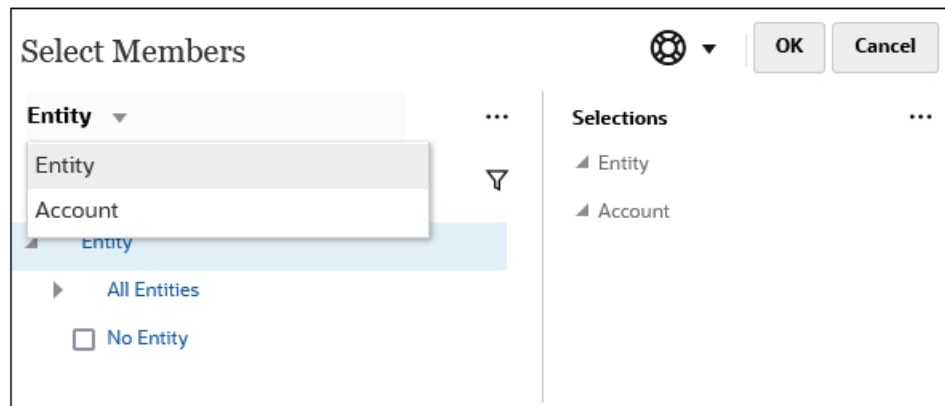
Forms 1.0 and Dashboards 1.0 use a different member selector. See [Selecting Members for Forms 1.0 and Dashboards 1.0](#).

## Selecting a Dimension


The dimension for which you are selecting a member is displayed at the top of the **Select Members** dialog box.

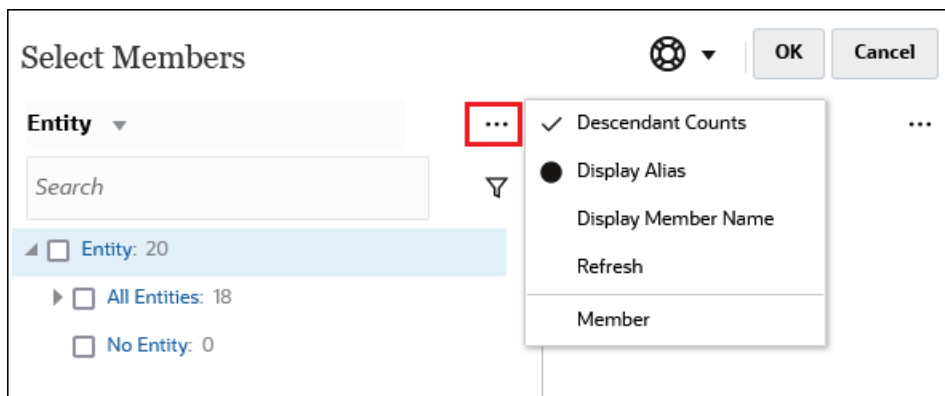


In certain situations you may be able to select a member for more than one dimension. To do this, click the drop-down to select the desired dimension. For example, if you are selecting members for both the Entity and Account dimensions, both Entity and Account are displayed in the drop-down.



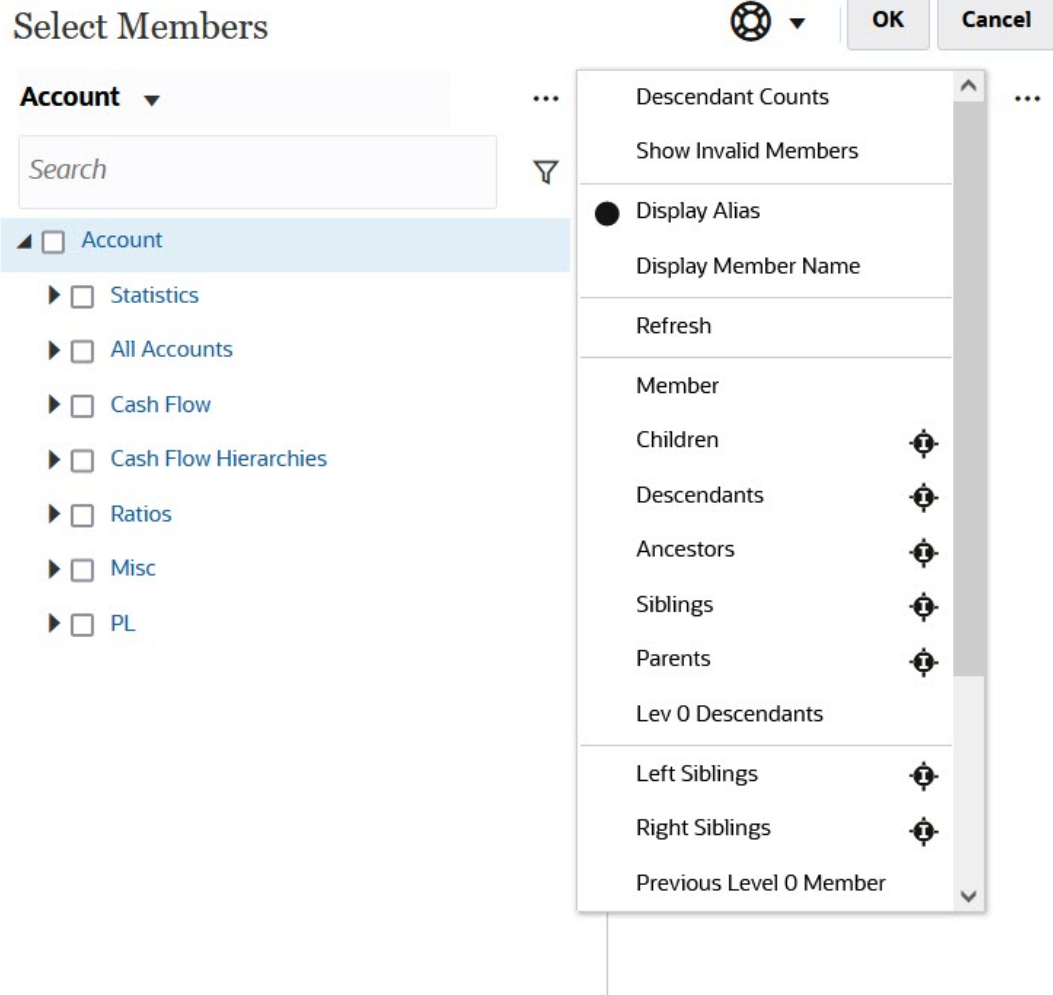
## Defining Member Display Options

Click  (Available Items icon) to select whether to display members by alias or by member name, and whether to display the number of descendants for each member.



In some places, additional options are available:



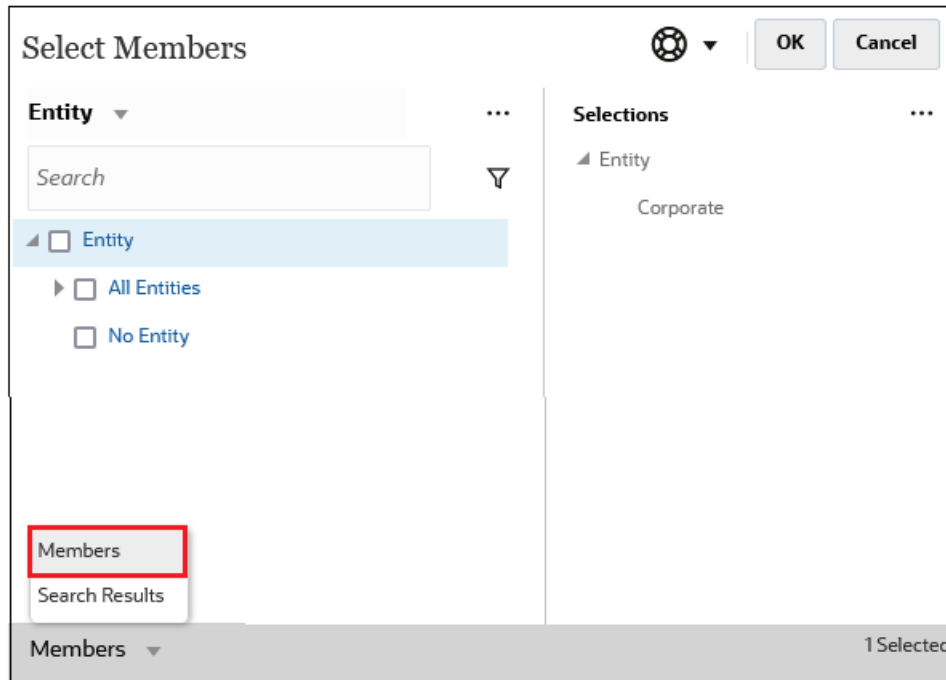


You have the option to **Show Invalid Members**.

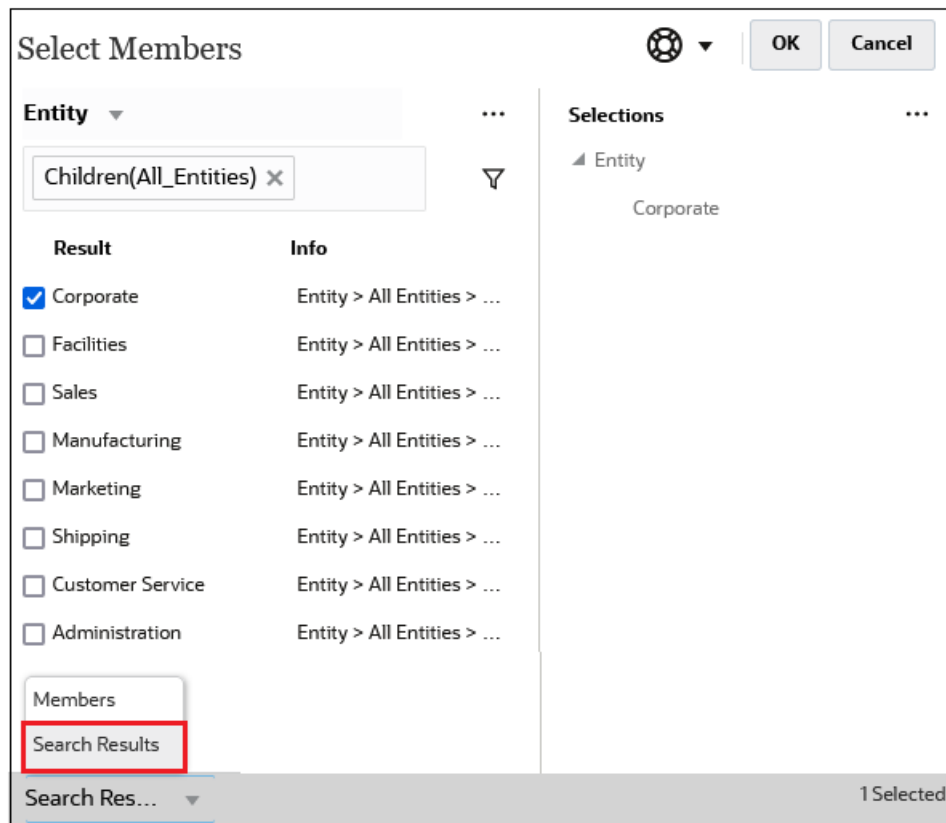
You can also show and select members using member relationships. When you click a member relationship option in the **Available Items** menu, the member or members are moved to the **Selections** pane. For more information about member relationships, see [Member Relationships](#).

To toggle the display between the hierarchy view and the results of any search or filters, select **Members** or **Search Results** at the bottom left of the screen.

**Select Members Dialog Box with the Hierarchy View Displayed**



**Select Members Dialog Box with Search Results Displayed**



In some places, you also have the option to toggle the display to show:

- User Variables
- Substitution Variables

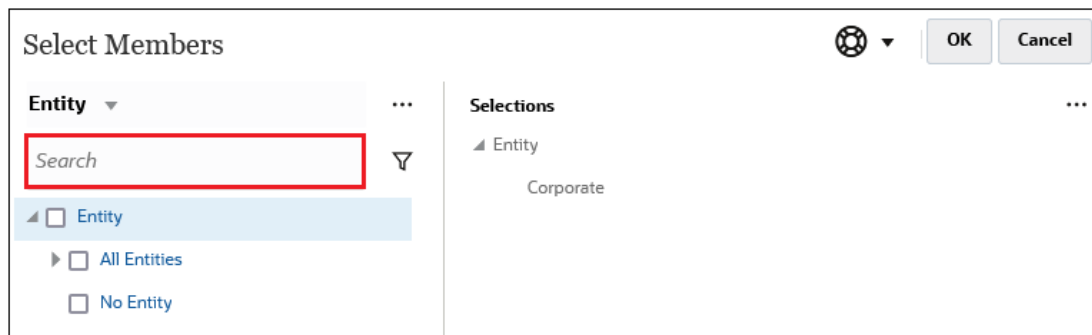
- Attributes

 **Tip:**

You can drag the splitter bar between the **Select Members** pane and the **Selections** pane to adjust how the dialog box displays.

## Searching for Members

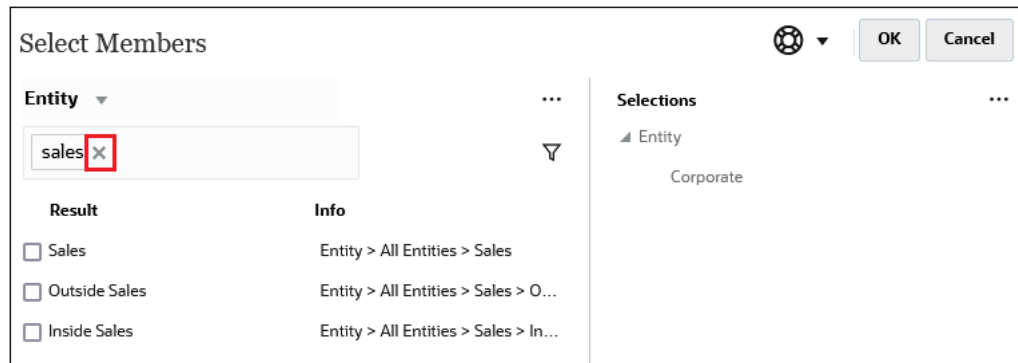
You can search for members in the **Search** field. When searching for a member, you can search for a word, multiple words, or wildcard characters.





**Table 28-1 Valid Wildcard Characters**

Wildcard	Description
?	Match any single character
*	Match zero or multiple characters. For example, enter "sale*" to find "Sales" and "Sale" because * includes zero or more characters after the word "sale."  The default search uses the * wildcard. For example, entering "cash" searches for "*cash*" and returns "Restricted Cash", "Cash Equivalents", "Cash", and "Noncash Expenses" because the word "cash" appears within each matched item.
#	Match any single number (0-9)
[list]	Match any single character within a specified list of characters. You can list specific characters to use as wildcard. For example, enter [plan] to use all the letters within the brackets as a single wildcard character. You can use the "-" character to specify a range, such as [A-Z] or [!0-9]. To use the "-" character as part of the list, enter it at the beginning of the list. For example, [-@&] uses the characters within the brackets as wildcard characters.
[!list]	Match any single character not found within a specified list of characters. The "-" character can also be used to indicate a range, such as [!A-Z] or [!0-9].

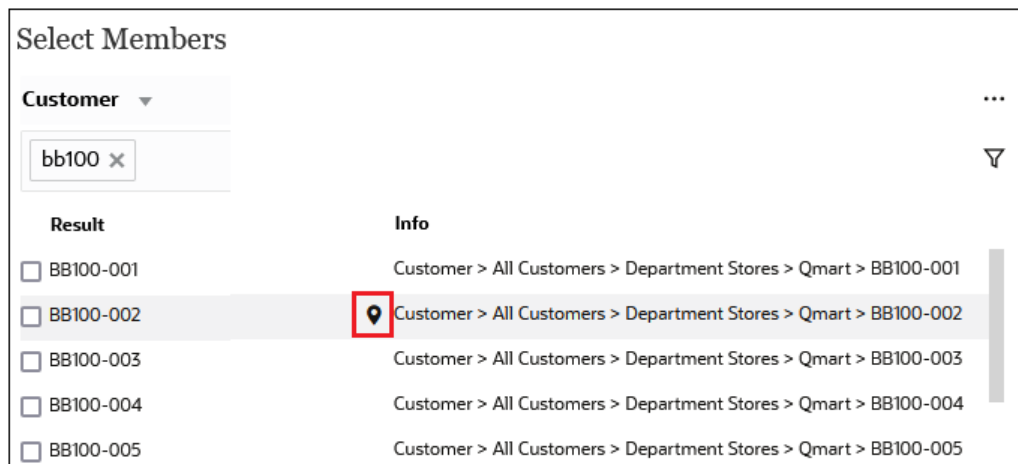
To remove search criteria, click the X next to the search filter.




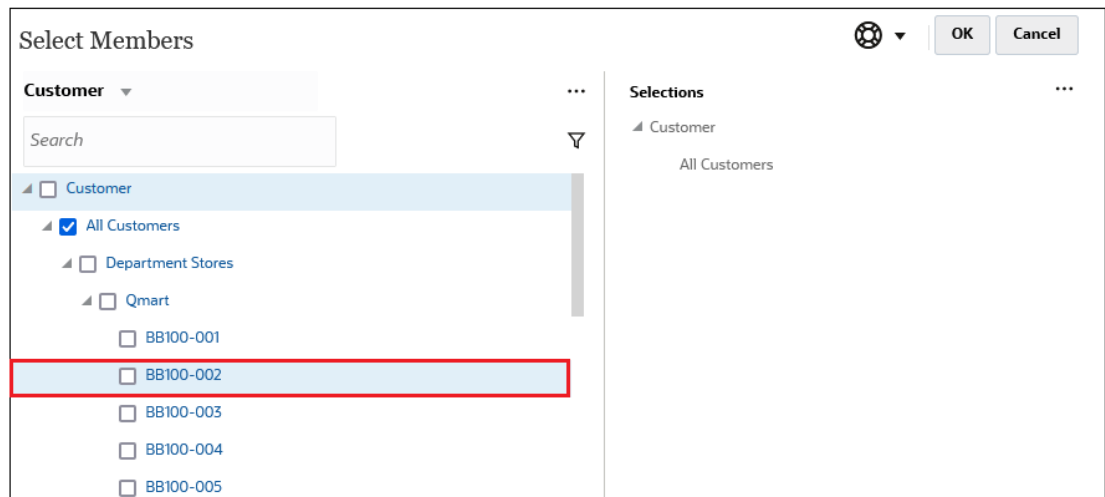
After you perform a search, you can use the Locate Member icon  to find a specific member in the hierarchy. This is very useful if you have a large number of members and you need to work with a particular member in its hierarchy position.

To display the Locate Member icon, highlight a member in the search results. To locate the member in the hierarchy, click  (Locate Member icon) to the left of the highlighted member in the **Info** column.


For example, assume you search for **bb100** in the **Customer** dimension, and then click  on the **BB100-02** line.

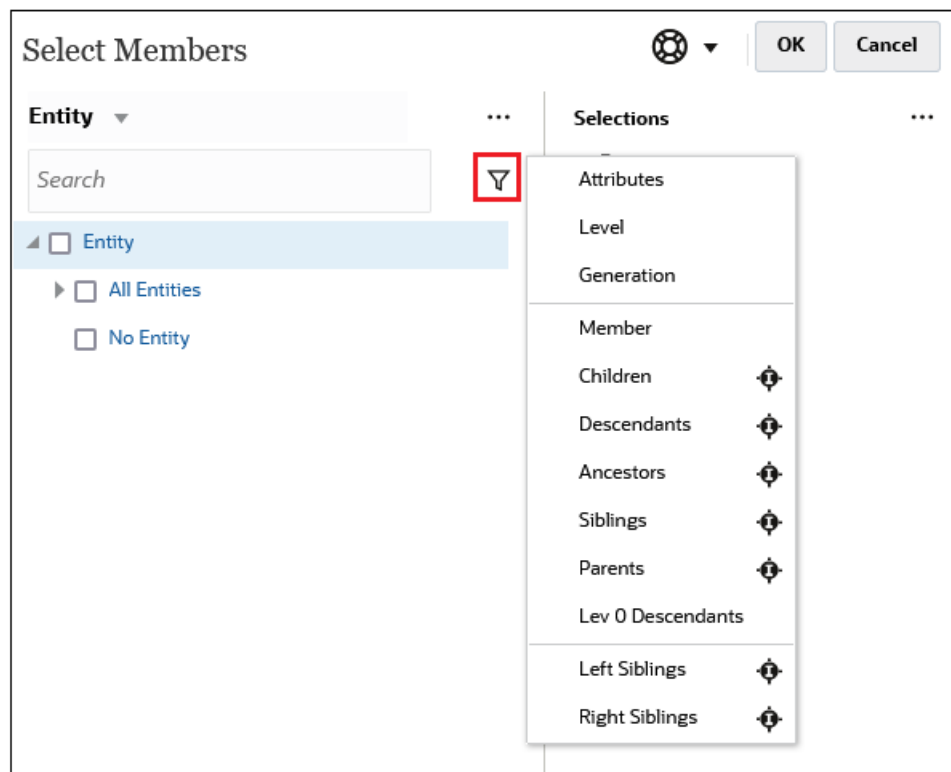


After you click , you are returned to the hierarchy view with **BB100-02** highlighted. At this point, you could select the checkbox next to BB100-02 to move it to the **Selections** pane if desired.



## Filtering Which Members Are Displayed


To further filter the members that are displayed, click the Filter icon , and select an option.

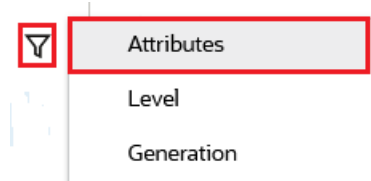


You can filter by a specific attribute, by level, by generation, or by a member relationship.

- [Filtering by Attributes](#)
- [Filtering by Level](#)
- [Filtering by Generation](#)
- [Filtering by Member Relationship](#)

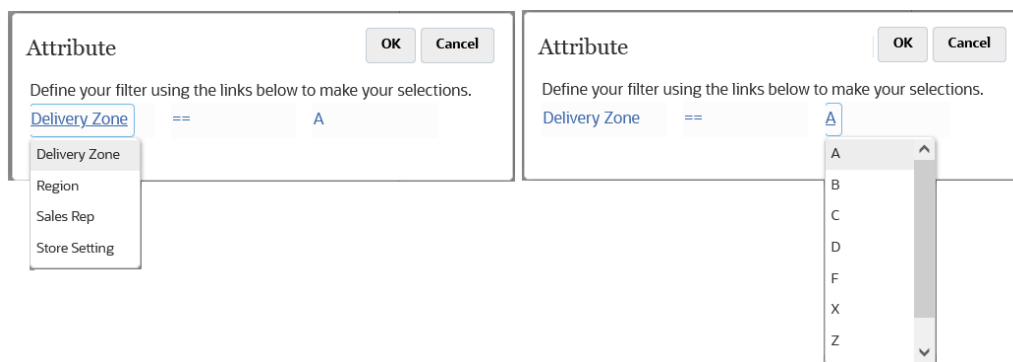
## Filtering by Attributes

If attributes are defined, click  and select **Attributes** to filter the members displayed to specific attribute values.

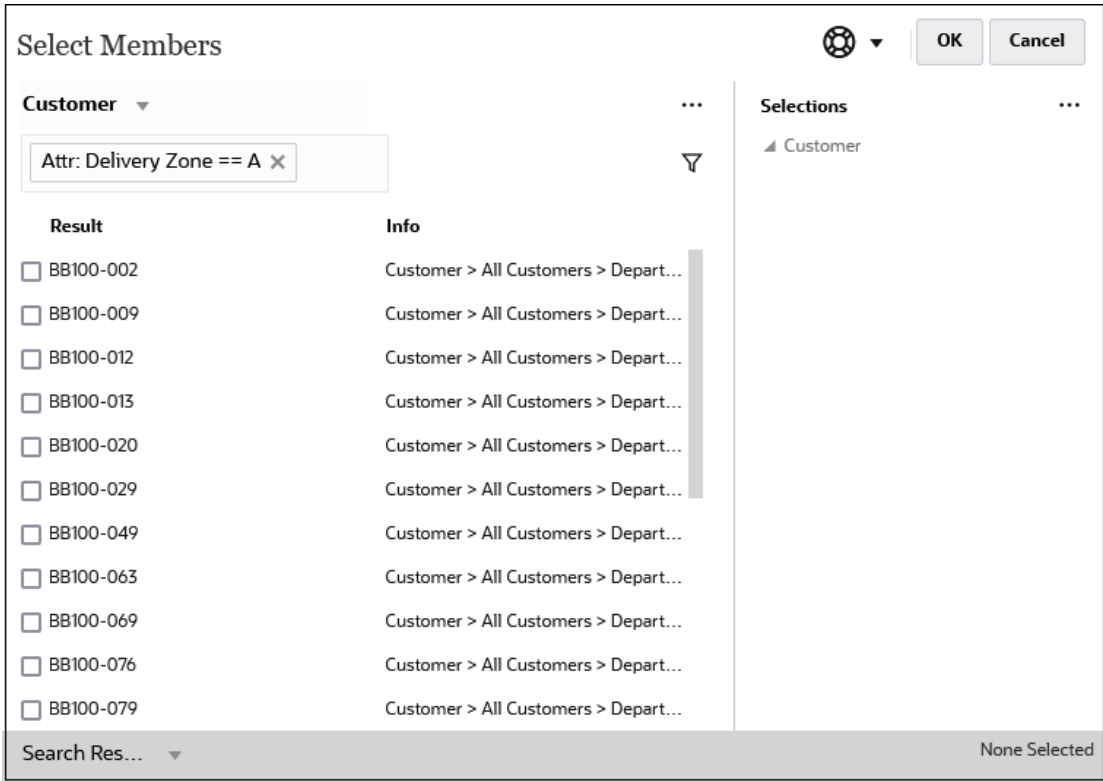


If more than one attribute is defined, click the links in the **Attribute** dialog box to display the available attributes and select the filters. For example, you could filter the results displayed for the **Customer** dimension to **Delivery Zone A**.

### **Attribute Dialog Box with Delivery Zone and A Selected**

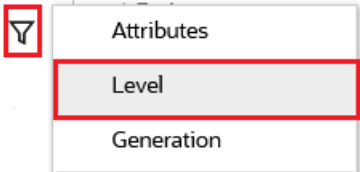


### **Members for the Customer Dimension Filtered by Delivery Zone A**



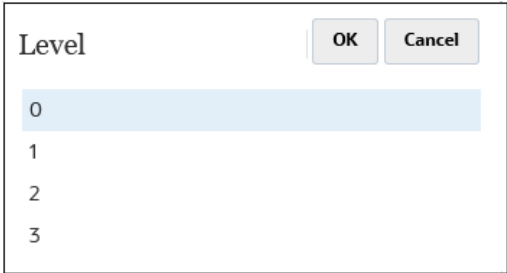
## Filtering by Level

To filter the members displayed to a specific level, click , and select **Level**.

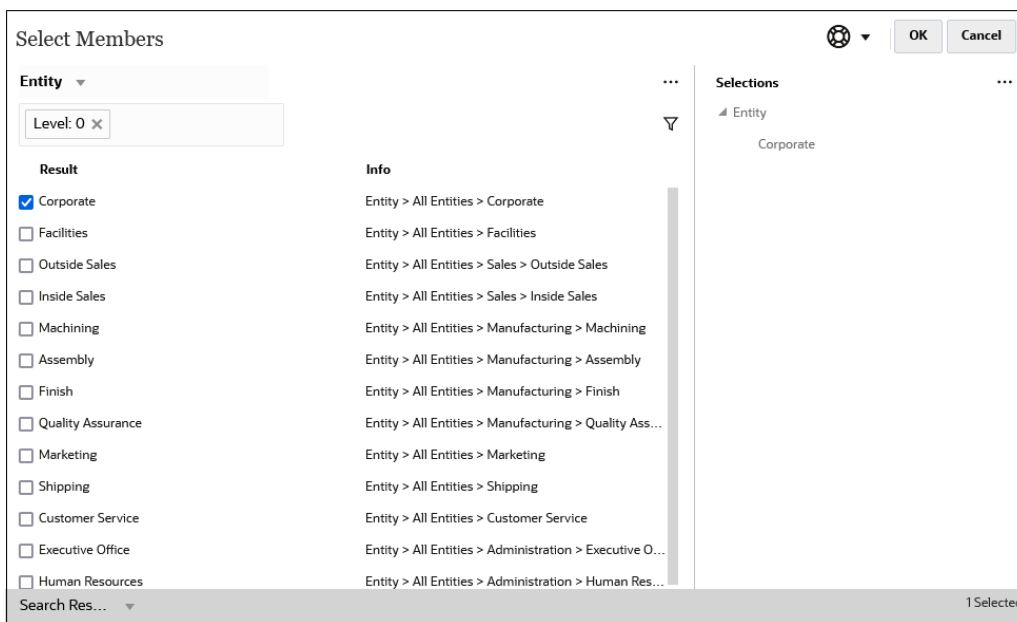


For example, you could filter by **Level 0** members in the **Entity** dimension.


### **Level Dialog Box with Level 0 Selected**

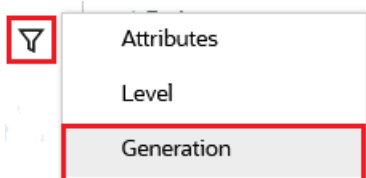


### **Members for the Entity Dimension Filtered by Level 0**



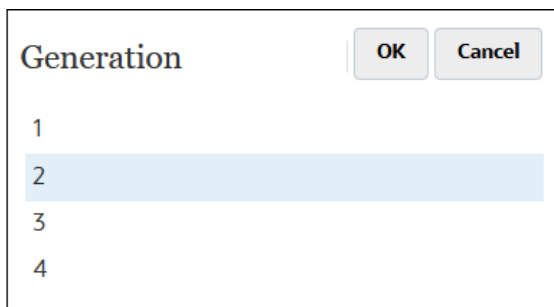
## Filtering by Generation

To filter the members displayed to those in a specific generation, click , and select **Generation**.



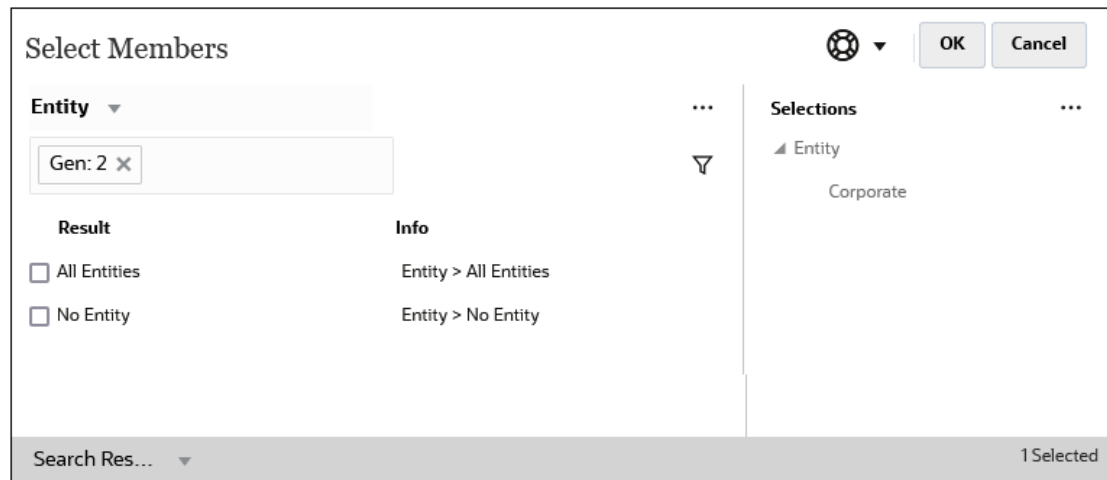
For example, you could filter by **Generation 2** members in the **Entity** dimension.

### ***Generation Dialog Box with Generation 2 Selected***



### ***Members for the Entity Dimension Filtered by Generation 2***



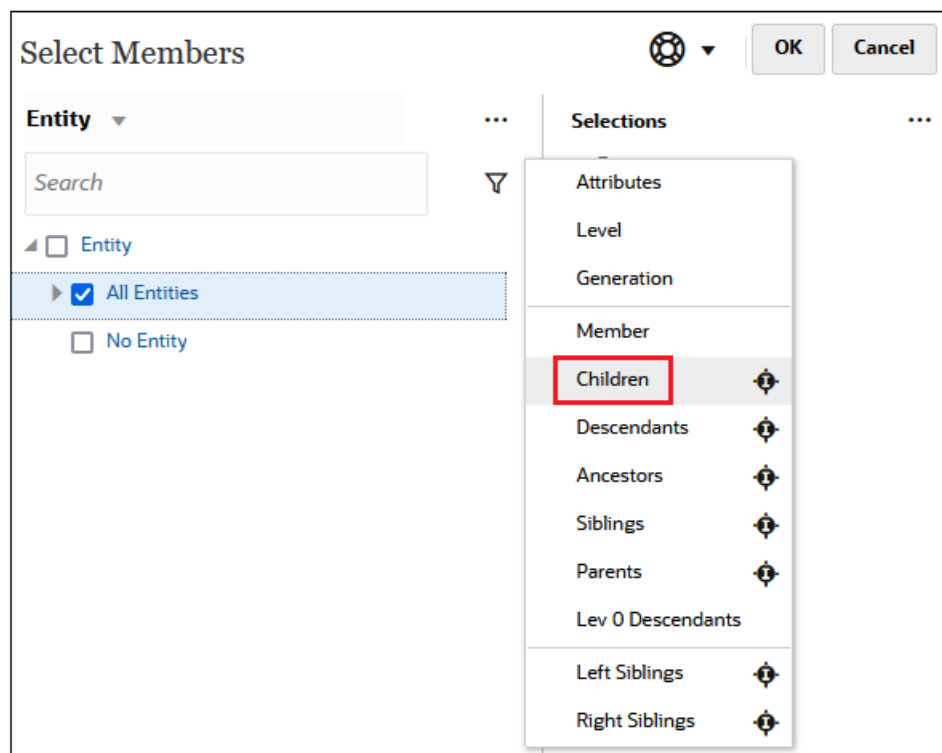


## Filtering by Member Relationship

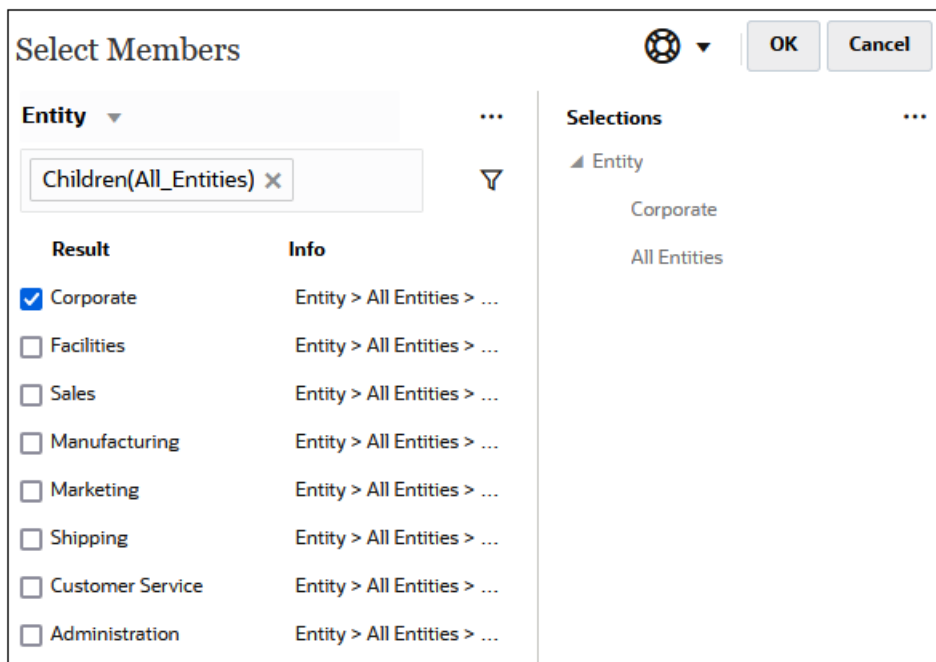
When you filter by member relationship, you can define whether to include the currently-highlighted member in the search results.


- Click the relationship name to select the related members, *excluding the currently-highlighted member*.

For example, assume you select **All Entities**, click , and then select **Children**.

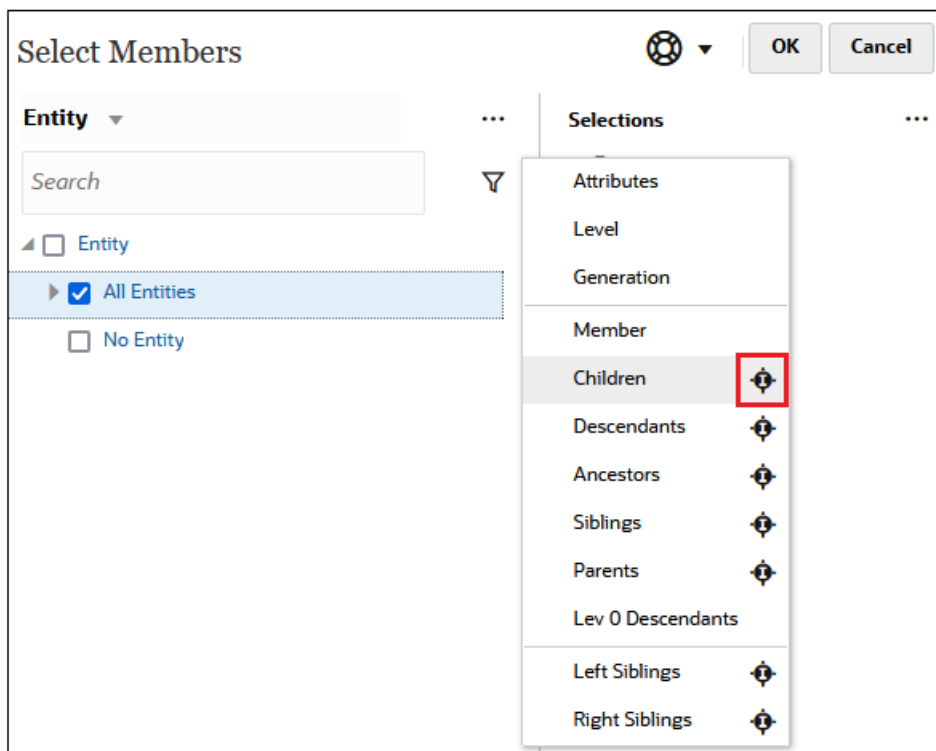


In this case, the children of **All Entities** are included in the filtered results, but *not* the **All Entities** member.

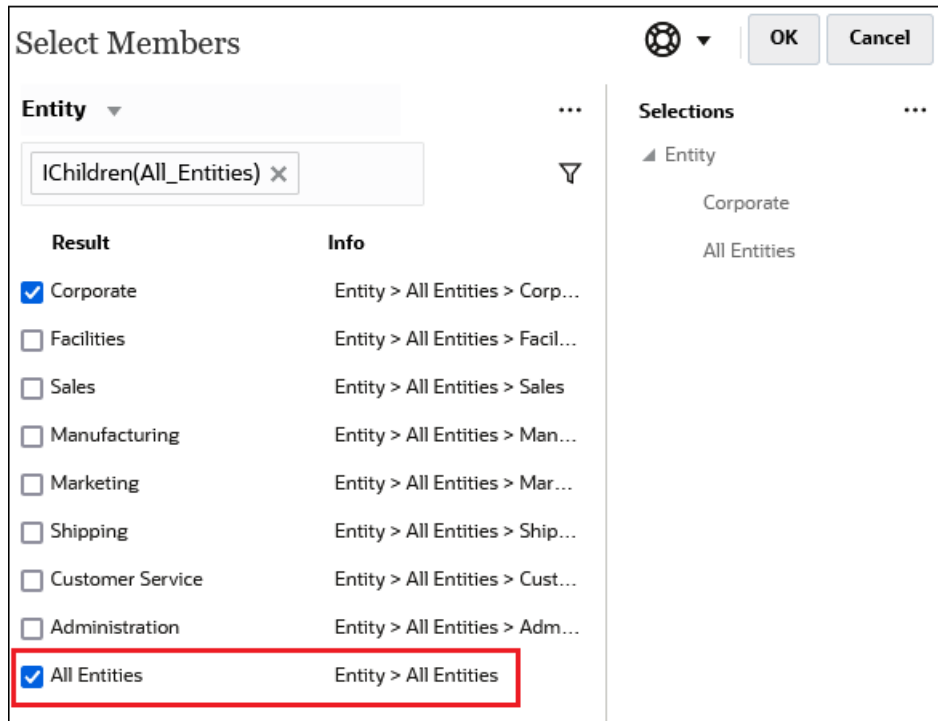



- Click the include icon  to the right of the relationship name to select the related members, *including the currently-highlighted member*.

For example, assume you select **All Entities**, click , and then click  next to **Children**.




In this case, both the children of **All Entities** and the **All Entities** member are included in the filtered results.



 **Note:**  
For more information, see [Member Relationships](#).

## Member Relationships

This table describes which members and related members are included during filtering and member selection.

Click the include icon  to the right of the relationship name to select the related members, *including the currently-highlighted member*.

**Table 28-2 Member Relationships**

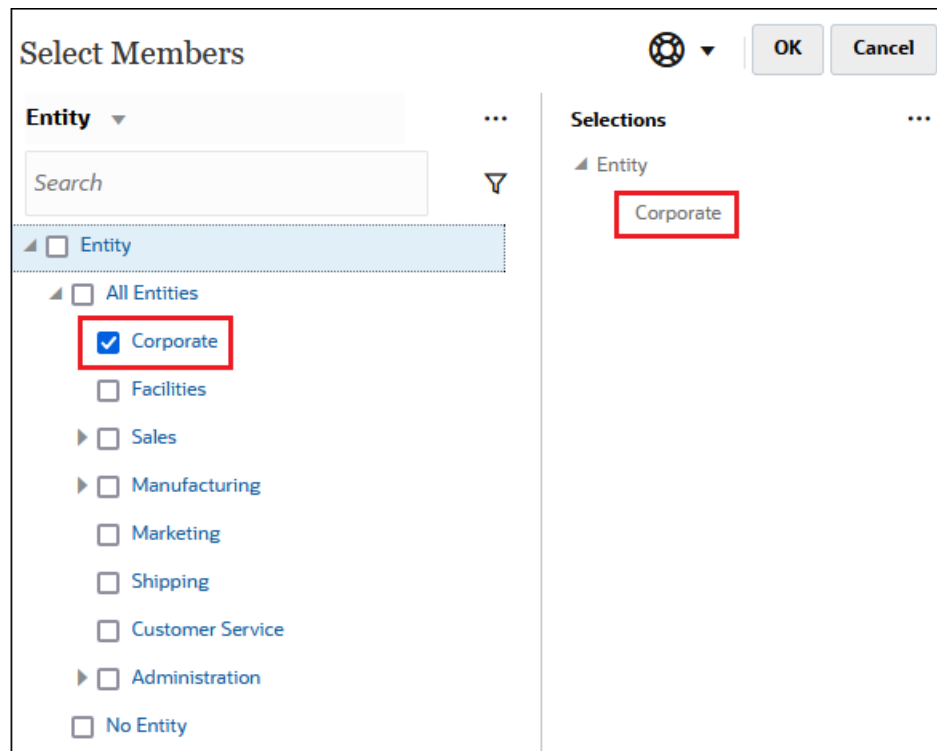
Member	Which Related Members Are Included
Member	The selected member
Children	All members in the level immediately below the selected member
Descendants	All descendants of the selected member, excluding the selected member
Ancestors	All members above the selected member, excluding the selected member
Siblings	All members from the same level in the hierarchy as the selected member, excluding the selected member
Parents	The member in the level above the selected member
Level 0 Descendants	All descendants of the selected member that have no children

Table 28-2 (Cont.) Member Relationships

Member	Which Related Members Are Included
Left Siblings	The members that appear before the selected member with the same parent
Right Siblings	The members that appear after the selected member with the same parent
Previous Level 0 Member	The previous level zero member that appears before the selected member Examples: PrevLvl0Mbr(Jan) returns BegBalance; PrevLvl0Mbr(Jul) returns Jun; PrevLvl0Mbr(BegBalance) returns an empty result
Next Level 0 Member	The next level zero member that appears after the selected member Examples: NextLvl0Mbr(Mar) returns Apr; NextLvl0Mbr(Dec) returns an empty result
Previous Generation Member	The member that appears immediately before the selected member within the same generation
Next Generation Member	The member that appears immediately after the selected member within the same generation
Previous Sibling	The member that appears immediately before the selected member with the same parent
Next Sibling	The member that appears immediately after the selected member with the same parent


## Making Member Selections



To select a member, click the checkbox next to the member in the **Select Members** dialog box. The selected member displays a check mark and is moved to the **Selections** pane.



 **Note:**

In certain situations, you are limited on the members you can select. For example, if you are specifying the default members for a model context, you can only select Level 0 members.

To expand a parent member to see its child members, click the expansion icon  to the left of the parent member name. Clicking the expansion icon will not select the parent member.

In some places, you can use the Function Selector in the **Select Members** pane  to make member selections. Click the Function Selector  next to a member to see the Function Selector menu, and then select a member relationship option.

**Select Members**

**Account** ▾

Search

- Account
  - ▶  Statistics
  - ▶  All Accounts *fx*
  - ▶  Cash Flow
  - ▶  Cash Flow Hierarchies
  - ▶  Ratios
  - ▶  Misc
  - ▶  PL

**Members** ▾

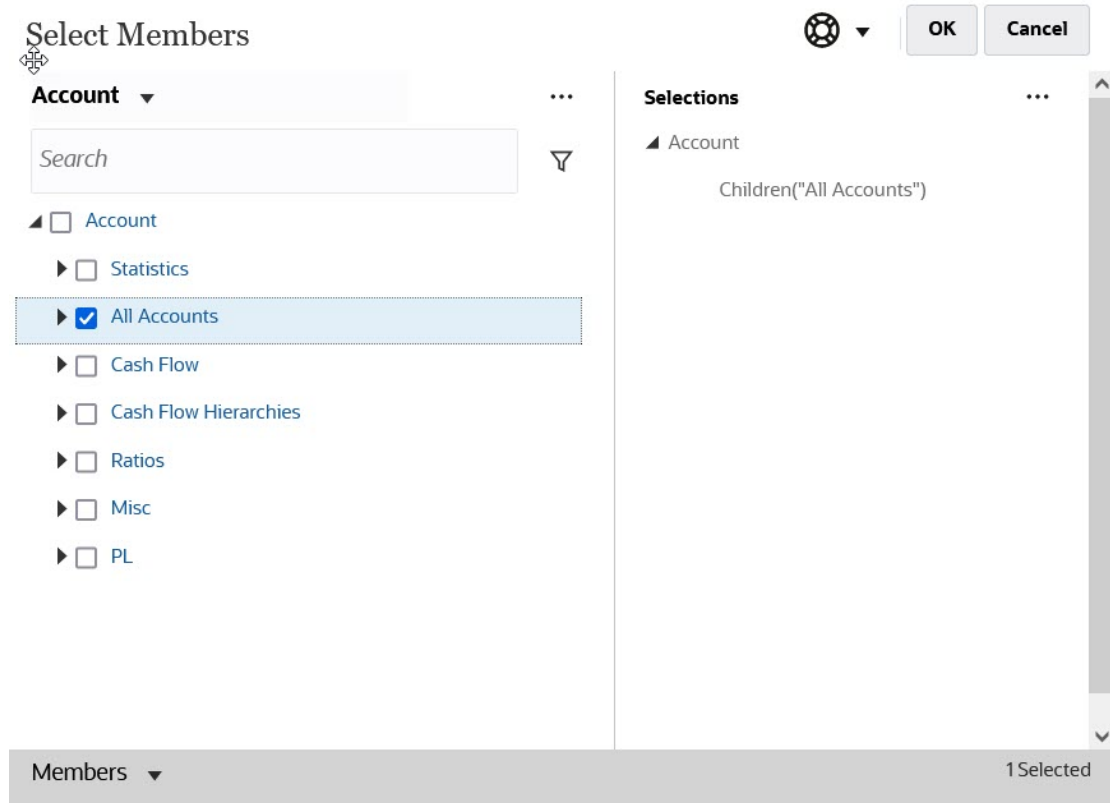
7410: Utilities	20,123	
7420: Rent Exper	4,305	


**Selections** ▾

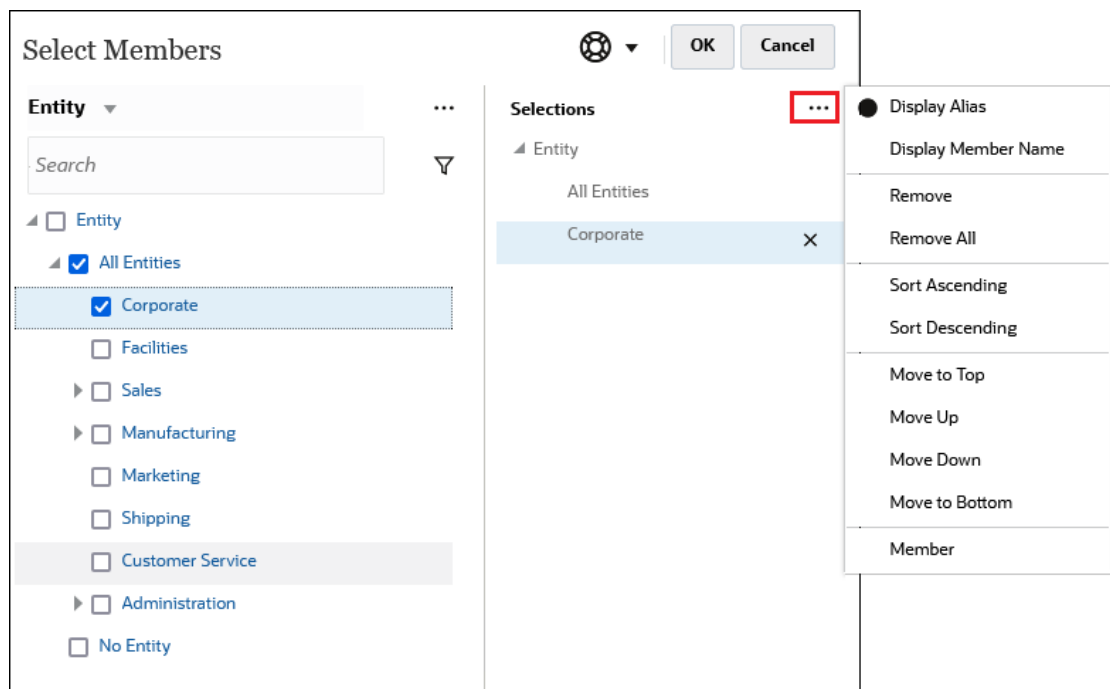
- Account
  - Member
  - Children
  - Descendants
  - Ancestors
  - Siblings
  - Parents
  - Lev 0 Descendants
  - Left Siblings
  - Right Siblings
  - Previous Level 0 Member
  - Next Level 0 Member
  - Previous Generation Member
  - Next Generation Member
  - Previous Sibling
  - Next Sibling

OK Cancel

For example, if you click the Function Selector *fx* next to All Accounts, and then click **Children**, then Children("All Accounts") is added to the **Selections** pane.

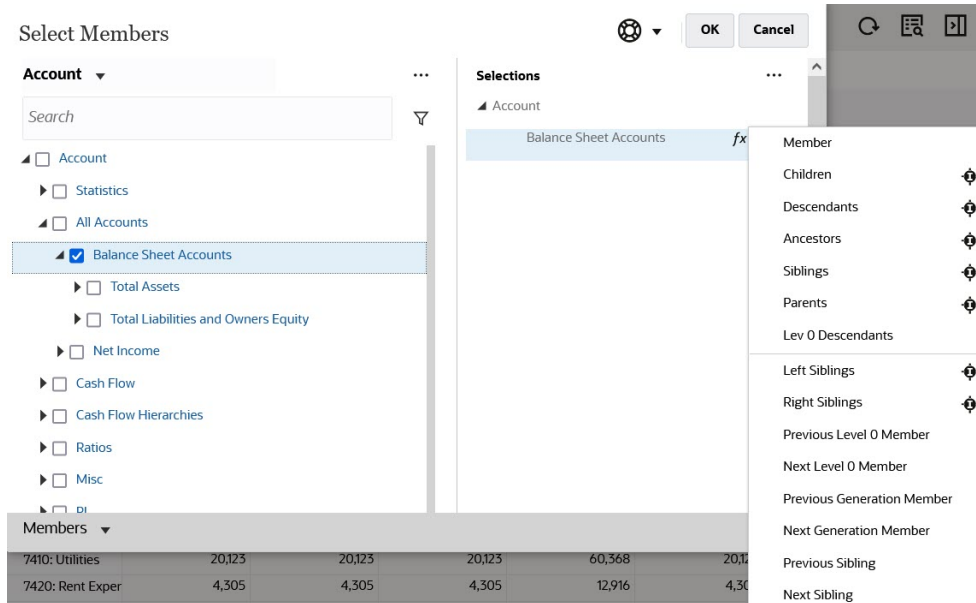



To remove, sort, or move selected members, click  (Selected Items icon) in the **Selections** pane, and select an option. You can also select whether to display the alias or the member name.

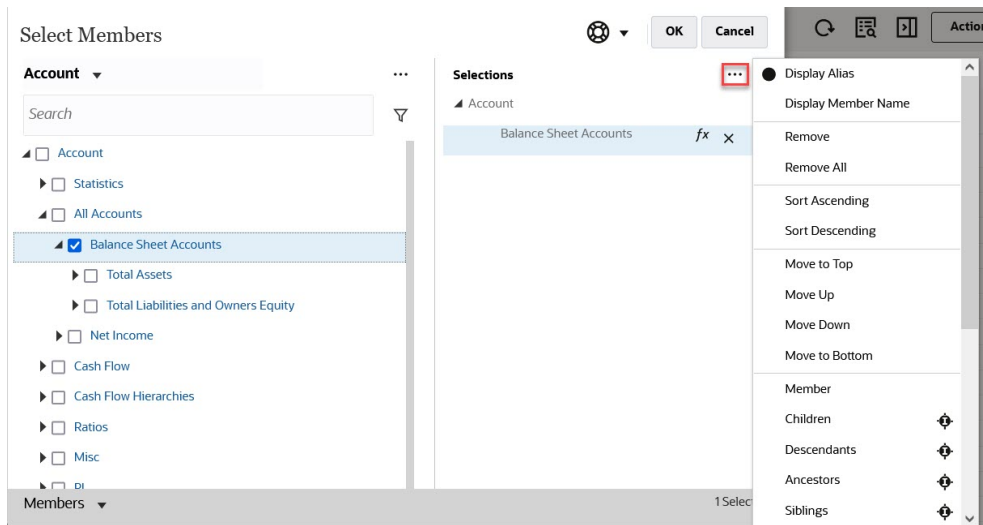


You can add additional members to the **Selections** pane for selected members in several ways:

- Click the Function Selector *fx* next to a selected member to see the Function Selector menu, and then select a member relationship option.



- Select a member in the **Selections** pane, click the **Selected Items** icon , and then click a member relationship option.



For more information about member relationships, see [Member Relationships](#).



# Selecting Members for Forms 1.0 and Dashboards 1.0

## Related Topics

- [About Selecting Members for Forms 1.0 and Dashboards 1.0](#)
- [Member Relationships](#)
- [Selecting Members](#)
- [Considerations When Selecting Members](#)
- [Selecting Attribute Values as Members](#)
- [Selecting Substitution Variables as Members](#)
- [Selecting User Variables as Members](#)

## About Selecting Members for Forms 1.0 and Dashboards 1.0

Use the Member Selection dialog box to select the members to use with Forms 1.0 and Dashboards 1.0. If variables and attributes are defined, you can also select variables and attributes. You can display and select members by member name, alias, or both. The display options that you define for the Member Selection dialog box override those defined as an application default by an Administrator, and those specified as an application preference.



### Note:

Models, rule sets, allocation rules, custom rules, Forms 2.0, Dashboards 2.0, and ad hoc grids use a different Member Selector. See [Using the Member Selector](#) for more information.

## Member Relationships

When you are creating a form, member selection requires you to specify a member relationship. This table describes which members and related members are included during member selection.

**Table 28-3 Member Relationships**

Relationship	Members Included
Member	The selected member
Ancestors	All members above the selected member, excluding the selected member
Ancestors (inc)	The selected member and its ancestors
Children	All members in the level immediately below the selected member
Children (inc)	The selected member and its children
Descendants	All descendants of the selected member, excluding the selected member

**Table 28-3 (Cont.) Member Relationships**











<b>Relationship</b>	<b>Members Included</b>
Descendants (inc)	The selected member and its descendants
Siblings	All members from the same level in the hierarchy as the selected member, excluding the selected member
Siblings (inc)	The selected member and its siblings
Parents	The member in the level above the selected member
Parents (inc)	The selected member and its parent
Level 0 Descendants	All descendants of the selected member that have no children
Left Siblings	The members that appear before the selected member with the same parent
Left Siblings (inc)	The selected member and its left siblings
Right Siblings	The members that appear after the selected member with the same parent
Right Siblings (inc)	The selected member and its right siblings
Previous Sibling	The member that appears immediately before the selected member with the same parent
Next Sibling	The member that appears immediately after the selected member with the same parent
Previous Level 0 Member	The previous level zero member that appears before the selected member Examples: PrevLv0Mbr(Jan) returns BegBalance; PrevLv0Mbr(Jul) returns Jun; PrevLv0Mbr(BegBalance) returns an empty result
Next Level 0 Member	The next level zero member that appears after the selected member Examples: NextLv0Mbr(Mar) returns Apr; NextLv0Mbr(Dec) returns an empty result
Previous Generation Member	The member that appears immediately before the selected member within the same generation
Next Generation Member	The member that appears immediately after the selected member within the same generation
Relative	Returns a member relative to the specified member at the same generation with the specified offset. Examples: Relative("Jan", 4) returns May, which is January plus 4 months in a standard monthly Period dimension; Relative("Jan", -2) returns Nov, which is January minus 2 months in a standard monthly Period dimension.

Table 28-3 (Cont.) Member Relationships

Relationship	Members Included
Relative Range	Returns all of the members from the starting member to the offset member when going forward or from the offset member to the starting member when going backwards.  Examples: RelativeRange("Jan", 4) returns Jan, Feb, Mar, Apr, May; RelativeRange("Jan", -2) returns Nov, Dec, Jan.

## Selecting Members

To select members to use in forms:

1. From the members list, select members.
2. **Optional:** Select or enter search criteria.
  - a. In the Search box, select options: **Member Name**, **Member Alias**, **Description**, or **UDA**.  
  
You can also enter all or part of a member name, alias, description, or UDA. Searches include shared members. To search for an exact match, select **Exact** and enter the search string. The search is not case-sensitive. You can search for a word, multiple words, or wildcard characters.
  - b. Click  .
3. **Optional:** To set how information displays or filter members in the left pane of the Member Selection dialog box for the current session, click one of the following icons above the members list. You can select multiple filters, such as functions and generations.
  -  Search Up
  -  Search Down
  -  Display Properties. Select **Member Name**, **Alias**, **Member Name: Alias**, or **Alias: Member Name**. Or, select **Additional Display Properties**, then **Description** or **Count**. Selected options are displayed in columns in the left and right panes. To remove columns, clear the selections.
  -  Keep only by Functions. Select an option from the drop-down list.
  -  Keep only by Attributes. If attributes are defined, select options for **Attributes**, **Operator**, and **Value**, and then click **OK**. Multiple attributes can be selected.
  -  Keep only by levels or generations. Select **Level** or **Generation**, select the levels or generations to display, and then click **OK**.
  -  Refresh the display to remove filters.
4. Click  (Add) or  (Remove) to select or remove members.

Only members to which you have access are displayed.

- **For runtime prompts only:** The displayed hierarchy is for the application and plan type against which the business rule is launched. For runtime prompts, members are displayed that satisfy runtime prompt limits.
  - **For business rules or validation rules having Cross Dimension or Member Range runtime prompts only:** From the **Select Dimension** list, select a dimension that the business rule designer set for this runtime prompt.
  - **For shared members only:** Shared members are displayed in this format: *shared\_member.parent\_member* (*shared*). When they are selected on the right side of the dialog box, only the shared member name is displayed.
5. If variables or attributes are defined, click the **Variables** tab to select members for user variables, substitution variables, and attributes. Members of each category are displayed as children. Only members to which the user has read access are displayed in forms.
- **User Variables:** Select members as described in [Selecting User Variables as Members](#).
  - **Substitution Variables:** Select members as described in [Selecting Substitution Variables as Members](#).
  - **Attributes:** Select attributes based on the values described in the following table. Selecting a non-level 0 attribute selects all level 0 descendants and applies the operator to each, as described in [Selecting Attribute Values as Members](#).

**Table 28-4 Attribute Value Selection**

Operator	Attribute Values Included
Equal	Equal to the selected attribute
NotEqual	Not equal to the selected attribute
Greater	Greater than the selected attribute
GreaterOrEqual	Greater than or equal to the selected attribute
Less	Less than the selected attribute
LessOrEqual	Less than or equal to the selected attribute

6. Click **OK** to save your selections.

## Considerations When Selecting Members

When selecting members for forms:

- You can filter members from certain users, restrict their access permissions to members, and then refresh the cube.
- The order of members in the **Selected Members** list determines the order on forms. To change the order, select a member and click the Up or Down Arrow above the selected members list.

If you select members individually and select their parent first, the parent displays in the form at the top of its member hierarchy. (Note that depending on the number

of hierarchy levels, calculating totals for the parent of individually selected members could take several passes, slowing calculations). The parent of members selected by relationship, for example, by I(Descendants), displays at the bottom of the hierarchy.

- In the **Layout** tab of the **Form Management** dialog box, you can open the **Member Selection** dialog box by clicking the member selection icon, or by right-clicking a row or column and selecting **Select Members**.
- You can select different sets of members across the same dimension.
- For forms with multiple dimensions in a row or column, you can set member selection options for a dimension by selecting that dimension from the **Dimensions** drop-down list that is displayed in the Member Selection dialog box for multiple dimensions in a row or column.
- If you click the member selection icon, an option is displayed for **Place Selection in Separate Rows** or **Place Selection in Separate Columns**. This adds the selection to the rows or columns after the last existing row or column on the form. For example, for a form that contains members Acct1, Acct2, and Acct3 in Column A, if you select these members with **Place Selection in Separate Columns** selected, Acct1 is selected for column A, Acct2 for column B, and Acct3 for column C. If you select the members without this option, all of the members are selected for column A.

This feature is available for single members only, not for members selected with functions, such as Children (inc). For example, if you select Q/IChildren for Column A and select **Place Selection in Separate Columns**, the form layout is not changed.

- All settings except Count are retained after the Member Selection dialog box is closed, and members in the Member Selection dialog box are displayed based on user-defined settings. Members displayed on the Layout tab do not inherit the display settings defined in Member Selection dialog box. Instead, they are displayed using the member name.

## Selecting Attribute Values as Members

If attribute members are defined, you can select attribute values on the **Select Members** dialog box. For attribute members, selecting a non-level 0 attribute selects all level 0 descendants and applies the operator to each. For attributes of type numeric, date, and Boolean (where false = 0 and true = 1), evaluation is based on the minimum and maximum values. For text attributes, evaluation is based on the position from top to bottom in the hierarchy. The top position has the lowest value, and the bottom position has the highest value.

### Example: Numeric attribute

In this example, the selected operator is applied to each level 0 descendant, based on the numeric value. For example, selecting NotEqual and Small in the Member Selection dialog box includes all values not equal to 1 and not equal to 2, so the selection includes 3, 4, 5, and 6. Selecting Greater and Small includes all values greater than 1 or greater than 2, so the selection includes 2, 3, 4, 5, and 6.

Size  
Small  
1  
2  
Medium

3  
 4  
 Large  
 5  
 6

**Table 28-5 Example: Numeric Attribute Evaluation**

Selected Operator	Selected Attribute Value	Result	Explanation
Equal	Large	5, 6	The Equal operator is applied to all level 0 descendants of Large, which includes 5 and 6.
Less	Medium	1, 2, 3	The Less operator is applied to all level 0 descendants of Medium. This includes values < 3 OR < 4, which results in 1, 2, and 3.
Greater	Medium	4, 5, 6	The Greater operator is applied to all level 0 descendants of Medium. This includes values > 3 OR > 4, which results in 4, 5, and 6.
GreaterOrEqual	Medium	3, 4, 5, 6	The GreaterOrEqual operator is applied to all level 0 descendants of Medium. This includes values >=3 OR >= 4, which results in 3, 4, 5, and 6.
LessOrEqual	Medium	1, 2, 3, 4	The LessOrEqual operator is applied to all level 0 descendants of Medium. This includes values <=3 OR <=4, which results in 1, 2, 3, and 4.
NotEqual	Medium	1, 2, 5, 6	The NotEqual operator is applied to all level 0 descendants of Medium. This includes values not equal to 3 AND not equal to 4, which results in 1, 2, 5, and 6.

**Example: Text attribute**

For text attributes, the selected operator is applied to each level 0 descendant based on its position in the hierarchy, from top (lowest value) to bottom (highest value).

In this example, Envelope is at the top position and has the lowest value. Packet has the next higher value, followed by Box, Carton, Barrel and Crate. Crate is at the bottom position and has the highest value.

For this text attribute, selecting Less and Small includes values that are less than Envelope or less than Packet. Because Envelope is less than Packet, the resulting selection includes only Envelope. Likewise, selecting Greater and Large includes values that are greater than Barrel or greater than Crate, so the resulting selection includes only Crate.

Containers  
 Small  
 Envelope  
 Packet  
 Medium  
 Box  
 Carton  
 Large  
 Barrel  
 Crate

**Table 28-6 Example: Text Attribute Evaluation**

Selected Operator	Selected Attribute Value	Result	Explanation
Equal	Medium	Box, Carton	The Equal operator is applied to all level 0 descendants of Medium, which includes Box and Carton.
NotEqual	Medium	Envelope, Packet, Barrel, Crate	The NotEqual operator is applied to all level 0 descendants of Medium. This includes values not equal to Box AND not equal to Carton, which results in Envelope, Packet, Barrel, and Crate.
Less	Medium	Box, Packet, Envelope	The Less operator is applied to all level 0 descendants of Medium. This includes everything at a lower position than Carton OR a lower position than Box, which results in Box, Packet, and Envelope.
LessOrEqual	Medium	Envelope, Packet, Box, Carton	The LessOrEqual operator is applied to all level 0 descendants of Medium. This includes everything at the same position as Carton OR at a lower position than Carton, which results in Envelope, Packet, Box, and Carton.

## Selecting Substitution Variables as Members

Substitution variables act as global placeholders for information that changes regularly. Substitution variables are especially useful for developing and reporting on rolling forecasts. When you select substitution variables as members on the form, their values are based on dynamically generated information. For example, you could set the current month member to the substitution variable `CurMnth` so that when the month changes, you need not update the month value manually in the form.

### Note:

- When you open or calculate values on forms, the application replaces substitution variables with values assigned to them.
- You create and assign values to substitution variables within the application. These substitution variables are then available in the application when you select members for a form.
- Substitution variables must be appropriate for the context in forms. For example, you could select a substitution variable named `CurrQtr` with a value of `Qtr2` as a member of the Period dimension. It's not valid to select a substitution variable named `CurrYr` for the Years dimension if its value is `Feb`. You can set substitution variables at the application or cube level.

The same substitution variable can exist on multiple levels; the application uses the first one it finds as it searches in this order:

1. Cube
  2. Application
- You can select from substitution variables if they are enabled for runtime prompts in business rules, and their values match a member set in the runtime prompt for a business rule.
  - The application checks the validity of substitution variables when they are used (for example, when the form is opened). It doesn't check when you design forms, so you should test substitution variables by saving and opening forms.

To specify substitution variables in forms:

1. Create the form.
2. In **Member Selection**, click the **Variables** tab, expand **Substitution Variables**, and then select substitution variables the same way you select members, to move substitution variables to and from **Selected Members**.

When selected, a substitution variable is preceded by an ampersand (&). For example:

```
&CurrentScenario
```

3. Click **OK**.



## Selecting User Variables as Members

User variables act as filters in forms, enabling users to focus only on certain members, such as a department. Before you can associate a user variable with a form, you must create the user variable.

When you create forms with user variables, users must select values for the variable before opening forms. For example, if you create a user variable called Division, users must select a division before working in the form. The first time you select a variable for a form, you do it in preferences. Afterward, you can update the variable in preferences or in the form.

To select user variables for forms:

1. Create the form.
2. On **Member Selection**, click the **Variables** tab, expand **User Variables**, and then select user variables the same way you select members, using the arrows to move user variables to and from **Selected Members**.

User variables are displayed for the current dimension. For example, user variables for the Entity dimension might display as follows:

```
Division = [User Variable]
```

When selected, a user variable is preceded by an ampersand. For example:

```
Idescendants (&Division)
```

3. Click **OK**.

# Naming Restrictions

## Related Topics

- [Naming Restrictions for Applications and Databases](#)
- [Naming Restrictions for Dimensions, Members, and Aliases](#)
- [Dimension and Member Names in Calculation Scripts, Report Scripts, Formulas, Filters, and Substitution Variables](#)
- [Restrictions for User and Group Names](#)

## Naming Restrictions for Applications and Databases

When naming an application, follow these rules:

- Use no more than eight characters for an application's name.
- Don't use spaces or tabs.
- Don't use an underscore ( \_ ) as either the first or last character.
- Don't use these special characters:

**Table 29-1 Restricted Characters in Application Names**

Character	Meaning
*	asterisk
\	backslash
[ ]	brackets
:	colon
,	comma
"	double quotation mark
=	equal sign
>	greater than sign
<	less than sign
.	period
+	plus sign
?	question mark
;	semicolon
'	single quotation mark
/	slash
	vertical bar

- For application names in relational database environments, don't use extended characters (except for underscores).

- For aggregate storage databases, don't use DEFAULT, LOG, METADATA, or TEMP as application names.

Enter names in the preferred case. Application names are created exactly as entered.

## Naming Restrictions for Dimensions, Members, and Aliases

When naming dimensions, members, and aliases, follow these rules:

- Use no more than 80 characters for dimension, member, or alias names.
- Names are not case-sensitive for dimensions, non-shared members, and aliases. Do not use matching names with only case differences; for example, do not name two members "zzz" and "ZZZ," or a base member "zzz" and a shared member "ZZZ."

In other words, shared member names must use the same name and case of the base member. When you rename a base member (even if all you do is change the case), the shared member names will be updated to match the base member names.

- Do not use dimension names that are the same name as a member property or a column header in the metadata load file; for example, Data Type.
- HTML tags cannot be used in member names, dimension names, aliases, and descriptions.
- The TAB key is restricted and cannot be used in dimension, member, and alias names.
- The following is a list of characters that are restricted and cannot be used in dimension, member, and alias names:

**Table 29-2 Restricted Characters in Dimension, Member, and Alias Names**

Character	Meaning
"	quotation mark
[ ]	bracket
\	backslash
/	slash

### Note:

- Brackets [ ] are permitted but not recommended in block storage outlines. They cause errors when converting to aggregate storage outlines.
  - Do not use the ASCII substitute character (zero-width space character) 0x1A in member names and aliases.
- The following is a list of characters that cannot be used at the beginning of dimension, member, and alias names:

**Table 29-3 Restricted Characters at the Beginning of Dimension, Member, and Alias Names**

Character	Meaning
@	at sign
&	ampersand
\	backslash
[ ]	brackets
,	comma
-	dash, hyphen, or minus sign
=	equal sign
<	less than sign
( )	parentheses
.	period
+	plus sign
"	quotation mark
/	slash
_	underscore
	vertical bar

 **Note:**

Member names with the preceding characters are not allowed in business process data export jobs.

- Spaces cannot be placed at the beginning or end of names.
- For time periods in custom calendars, don't use spaces in prefixes.
- The following cannot be used as dimension, member, or alias names:
  - Calculation script commands, operators, and keywords
  - Function names and function arguments
  - Names of other dimensions and members (unless the member is shared)
  - If Dynamic Time Series is enabled, don't use History, Year, Season, Period, Quarter, Month, Week, or Day.
  - In unique member outlines that contain an attribute dimension, you cannot use Sum, Count, Min, Max, and Avg as member or dimension names. Using these names causes duplicate name conflicts.

 **Note:**

The members that are created in the attribute calculations dimension (Sum, Count, Min, Max, and Avg) are not considered reserved words because you can change these names in the attribute calculations dimension and then use the standard name in an attribute or standard dimension.

If the outline is tagged as a duplicate member outline, and an attribute dimension (and, therefore, the attribute calculations dimension) exists before you use Sum, Count, Min, Max, and Avg as a base member, the duplicate name is allowed. However, if, you use Sum, Count, Min, Max, and Avg as a base member before creating an attribute dimension, the duplicate name isn't allowed.

- The following is a list of words that are restricted and cannot be used in dimension, member, and alias names:

**Table 29-4 Restricted Words in Dimension, Member, and Alias Names**

Restricted Word	Restricted Word	Restricted Word
ALL	AND	ASSIGN
AVERAGE	CALC	CALCMBR
COPYFORWARD	CROSSDIM	CURMBRNAME
DIM	DIMNAME	DIV
DYNAMIC	EMPTYPARM	EQ
EQOP	EXCEPT	EXP
EXPERROR	FLOAT	FUNCTION
GE	GEN	GENRANGE
GROUP	GT	ID
IDERROR	INTEGER	LE
LEVELRANGE	LOCAL	LOOPBLOCK
LOOPPARMS	LT	MBR
MBRNAME	MBRONLY	MINUS
MISSING	MUL	MULOP
NE	NON	NONINPUT
NOT	OR	PAREN
PARENPARM	PERCENT	PLUS
RELOP	REQUEST	SET
SKIPBOTH	SKIPMISSING	SKIPNONE
SKIPZERO	STATUS	TO
TOLOCALRATE	TRAILMISSING	TRAILSUM
TYPE	UMINUS	UPPER
VARORXMBR	XMBRONLY	\$\$UNIVERSE\$\$
#MISSING	#MI	

## Dimension and Member Names in Calculation Scripts, Report Scripts, Formulas, Filters, and Substitution Variables

In substitution variable values, calculation scripts, report scripts, filter definitions, partition definitions, or formulas, you must enclose member names in brackets ([]) when used within MDX statements and in quotation marks (" ") for block storage databases, in these situations:

- The name starts with one or more numerals (for example, 100).
- The name contains spaces or these characters:
  - ampersand ( & )
  - asterisk ( \* )
  - at sign ( @ )
  - backslash ( \ )
  - braces ( { } )
  - colon ( : )
  - comma ( , )
  - dash, hyphen, or minus sign ( - )
  - exclamation point ( ! )
  - equal sign ( = )
  - greater than sign ( > )
  - less than sign ( < )
  - parentheses ( )
  - percent sign ( % )
  - period ( . )
  - plus sign ( + )
  - semicolon ( ; )
  - slash ( / )
  - tilde ( ~ )

In calculation scripts and formulas, enclose member names that are also Essbase keywords in quotation marks (" ") for block storage databases, and in brackets ([ ]) for aggregate storage databases including these member names:

```
BEGIN DOUBLE ELSE END FUNCTION GLOBAL IF MACRO MEMBER RANGE RETURN STRING THEN
```

Enclose in quotation marks names, in calculation scripts, report scripts, or formulas, that contain or start with spaces or these characters: + - \* / ( ) : , @ ; ) { } [ ] <

Also enclose in quotation marks names that start with numbers. For example:

```
@SUM(ac1, "12345");
```

## Restrictions for User and Group Names

User and group names can have up to 80 characters.

# Migrating from Profitability and Cost Management to Enterprise Profitability and Cost Management

Enterprise Profitability and Cost Management includes improved versions of all the great modeling and allocation capabilities available in Profitability and Cost Management and integrates them with Oracle EPM Cloud Platform features like data forms, dashboards, reports, Data Exchange, Oracle Smart View for Office dimension management, and more.

If you have an existing Profitability and Cost Management application, you can migrate it to Enterprise Profitability and Cost Management. However, because the basic requirements are different between the two, in-place migration is not possible. You can download a migration template that you customize for your existing application, which you then use to generate an application snapshot and data extracts that are compatible with Enterprise Profitability and Cost Management. You can then either manually upload the snapshot and data to an Enterprise Profitability and Cost Management instance, or allow the system to automatically complete the migration.

Review the following tutorial for information on how to migrate an existing Profitability and Cost Management application to a separate instance of Enterprise Profitability and Cost Management.

## Tutorial

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### Your Goal

Learn how to migrate an existing Profitability and Cost Management application to a separate instance of Enterprise Profitability and Cost Management.

### Learn How



[Migrating from Profitability and Cost Management to Enterprise Profitability and Cost Management](#)

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