Oracle® APEX

End User's Guide

Release 22.2

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Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

Preface

Oracle APEX End User’s Guide offers an introduction to using Oracle APEX applications from an end user's perspective. This guide explains how to use interactive grids and interactive reports.

Audience

Oracle APEX End User’s Guide is intended for end users who are running Oracle APEX applications. To use this guide, you must have a general understanding of relational database concepts and an understanding of the operating system environment under which you are running APEX.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

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Related Documents

For more information, see these Oracle resources:

- *Oracle APEX Release Notes*
- *Oracle APEX Installation Guide*
- *Oracle APEX App Builder User’s Guide*
- *Oracle APEX Administration Guide*
- *Oracle APEX SQL Workshop Guide*
- *Oracle APEX API Reference*
- *Oracle APEX Accessibility Guide*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Changes in Release 22.2 for *Oracle APEX End User’s Guide*

All content in *Oracle APEX End User’s Guide* has been updated to reflect release 22.2 functionality and user interface changes.

New Features and Updates

See New Features and Changed Behavior in *Oracle APEX Release Notes*.

Deprecated and Desupported Features

See Deprecated Features and Desupported Features in *Oracle APEX Release Notes*.

2 About Oracle APEX

Oracle APEX is a rapid web application development tool for the Oracle Database.

> **See Also:**
>
> Quick Start in *Oracle APEX App Builder User's Guide*

2.1 Browser Requirements

Oracle APEX requires a JavaScript-enabled browser and supports the current and prior major release of Google Chrome, Mozilla Firefox, Apple Safari, and Microsoft Edge.

2.2 About Oracle APEX

Oracle APEX is a rapid web application development platform for the Oracle Database.

Developers assemble an HTML interface (or **application**) on top of database objects with wizards or direct input. Each application is a collection of linked pages using tabs, buttons, or hypertext links.

You can manage, manipulate, and display the data in a local Oracle Database or an external data source using REST-based APIs.

2.3 About Database Applications

A database application is an interactive user interface (UI) that enables you to display, add, update, or delete information stored in a local Oracle Database or an external data source using REST-based APIs. A database application can display information in many formats, including static and interactive reports, forms, charts, and interactive grids.

This guide explains how you can customize interactive grids and interactive reports. In an interactive grid or interactive report, you can customize the appearance of report data through searching, filtering, sorting, column selection, highlighting, and other data manipulations. You can save your customizations in the application or, depending on the developer's configuration, you can also download reports locally for offline use.

3 Using Interactive Grids

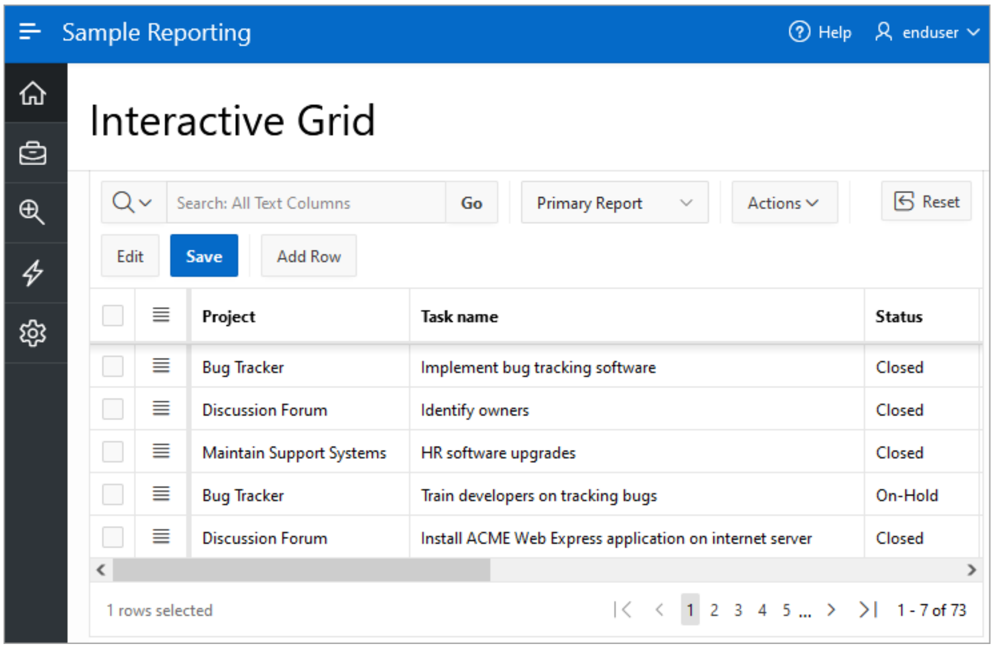
An interactive grid presents a set of data in a searchable, customizable report. In an editable interactive grid, users can also add to, modify, and delete the data set directly on the page.

- About Interactive Grids
  Interactive grids feature many ways to change how the data is displayed, including the Actions menu and the Column Heading menus. You can also rearrange the grid interactively using the mouse.
- About Editable Interactive Grids
  Editable interactive grids possess all the same functionality of regular interactive grids, plus some additional functions in the interface and the customization menus. You can add, edit, delete, and refresh much of the underlying data in an editable grid.
- Using an Interactive Grid
  Use the interactive grid's menus and interface to search the grid, add elements such as filters and computations, reorganize with sort and breaks, and further customize how the data displays.
- Customizing an Interactive Grid with the Actions Menu
  Reconfigure and augment how an interactive grid displays data by using the Actions menu.
- Customizing an Interactive Grid with the Column Heading Menu
  Use the Column Heading menu to quickly customize a column in an interactive grid.
- Using an Editable Interactive Grid
  Editable interactive grids expand the functionality of regular interactive grids to enable you to more directly update a grid's structure and contents. You can add and delete rows, edit cell contents, and refresh the grid with the latest updates.
- Saving Interactive Grids
  Save your changes as a new report within the application. Name and keep these interactive grid reports Private or make them Public to share with other users.
- Resetting Interactive Grids
  You can refresh, reset, or flashback a grid to revert your changes to it. Resetting an interactive grid can have different outcomes depending on the report type.
- Downloading or Emailing an Interactive Grid
  Download or email an interactive grid as a CSV, HTML, Excel, or PDF file by selecting Download in the Actions menu.

> **See Also:**
>
> Managing Interactive Grids in *Oracle APEX App Builder User's Guide*

3.1 About Interactive Grids

Interactive grids feature many ways to change how the data is displayed, including the Actions menu and the Column Heading menus. You can also rearrange the grid interactively using the mouse.



Interactive Grid Interface

By default, all interactive grids have a **search bar**, **Actions menu**, and **Reset** button. Interactive grids also have **Column Heading Menus**, which you access by clicking the name or heading of a column.

You can hide, filter, freeze, highlight, sort, and create control breaks on individual columns with the Actions and Column Heading menus. Advanced users can also define aggregations, which appear at the bottom of the column or column group.

Using the mouse, you can resize columns or drag and drop columns into different places to directly customize the appearance of an interactive grid. (The width and order of columns can also be configured in the Columns dialog.)

You can quickly chart the data with the **Chart** function. This feature is useful for quick data visualization or even presentation, and responds immediately to changes in the data.

You can quickly revert your modifications with the **Reset** function or perform an incremental revert with the **Flashback** function. You can use the **Refresh** function to pull in the latest version of the data on the database (useful for highly dynamic datasets).

Reports in Interactive Grids

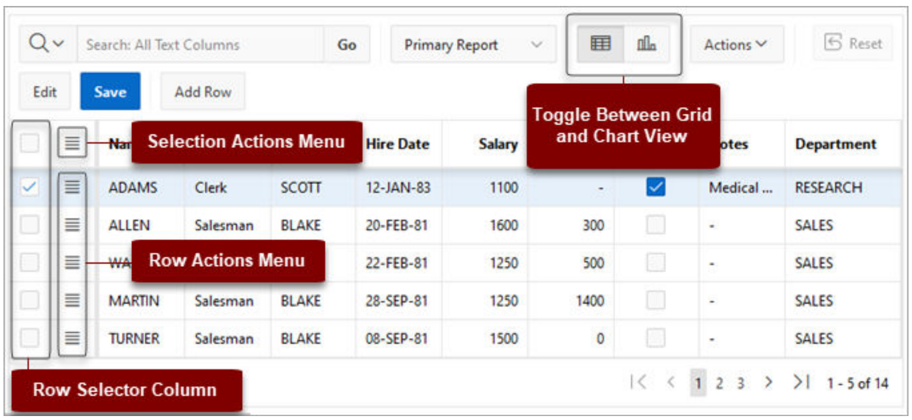
You can save your customizations to an interactive grid by creating a custom **report** by selecting Report, Save As from the Actions menu.

See Also:

- About Interactive Grid Report Types

3.2 About Editable Interactive Grids

Editable interactive grids possess all the same functionality of regular interactive grids, plus some additional functions in the interface and the customization menus. You can add, edit, delete, and refresh much of the underlying data in an editable grid.



About Editable Interactive Grids

Editable interactive grids enable users to change or update data. An editable interactive grid allows you to select, add, and change a grid's contents in real time, similar to working in spreadsheet software.

Editable Cells

You can change the contents of an individual cell in real time by double-clicking a cell.

You can also toggle the **Edit** button to enable improved keyboard usability when updating multiple columns. For example, rather than pointing and clicking on every cell in the grid, you can use the **Tab** and **Ctrl + Tab** keys to move focus across cells in a row.

Editable Rows

The primary way of adding new content to an editable interactive grid is by adding new rows. You can use the **Row Actions** menu to edit an individual row, or the **Selection Actions** menu to edit multiple rows at once.

3.3 Using an Interactive Grid

Use the interactive grid's menus and interface to search the grid, add elements such as filters and computations, reorganize with sort and breaks, and further customize how the data displays.

- Searching in an Interactive Grid
  Search an interactive grid by entering criteria into the Search Bar.
- Rearranging Columns Using Drag and Drop
  Drag and drop a column into place by clicking and holding the drag handle on the column heading.
- Resizing Columns in an Interactive Grid
  Resize the width of a column by clicking and holding the edge of a column heading and adjusting it with the mouse.
- Sorting Columns in an Interactive Grid
  Specify the alphabetical, numerical, or chronological order of a column by clicking the Sort Ascending and Sort Descending buttons on the column heading.
- Using Charts in an Interactive Grid
  Create a chart in an interactive grid by selecting Chart in the Actions menu. Edit or remove the chart with the Edit Chart link.

3.3.1 Searching in an Interactive Grid

Search an interactive grid by entering criteria into the Search Bar.

> **Tip:**
>
> You can also search an interactive grid using a supported browser's search function (such as **Ctrl + F** or **Cmd + F**).

- About the Search Bar
  You can perform text searches with the Search Bar at the top of an interactive grid.
- Using the Select Columns To Search Icon
  Narrow your search parameters by clicking the Select Columns to Search icon (magnifying glass).

3.3.1.1 About the Search Bar

You can perform text searches with the Search Bar at the top of an interactive grid.

Select Columns to Search icon
Resembles a magnifying glass. Narrows your search.
See Using the Select Columns To Search Icon.

Text area
Displays entered search criteria (wildcard characters are implied).

Go button
Executes a search.

3.3.1.2 Using the Select Columns To Search Icon

Narrow your search parameters by clicking the Select Columns to Search icon (magnifying glass).

To search a specific column:

1. Click the **Select Columns to Search** icon.
2. Select the name of a column.
3. (Optional) To enable case sensitive searching, select **Case Sensitive**.

> **Note:**
>
> Search only works in columns with alphabetical characters. Search does not work in number or date columns.

4. Enter a search string in the Search field.
5. Press the **Enter** key or click **Go**.

The interactive grid reloads with a filter applied.
To reset the search bar back to the default setting, click the **Select Columns to Search** icon and select **All Text Columns**.

You may need to disable or remove existing filters for broader searching to take effect.

> **See Also:**
>
> - Disabling a Filter in an Interactive Grid
> - Removing a Filter from an Interactive Grid

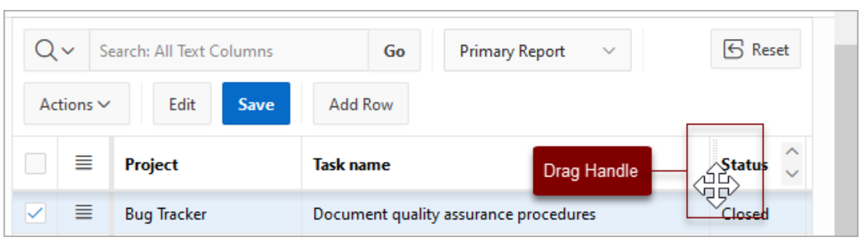
3.3.2 Rearranging Columns Using Drag and Drop

Drag and drop a column into place by clicking and holding the drag handle on the column heading.

You can also rearrange the order of the columns in the Columns dialog.

To drag and drop a column:

1. Hover the mouse over a column heading to display the drag handle.



The mouse cursor also changes when it comes into contact with the drag handle.

2. Click and hold the drag handle.
3. Drag the column to the desired location.

   The heading shifts out of place in the row.
4. While holding the mouse, use the indicator to determine which column to place the dragged column ahead of.
5. Release the mouse.

   The column drops into place.

To undo all changes, click the **Reset** button.

> **WARNING:**
>
> Resetting an interactive grid reverts it to a previously saved state. Any changes since that time may be lost.

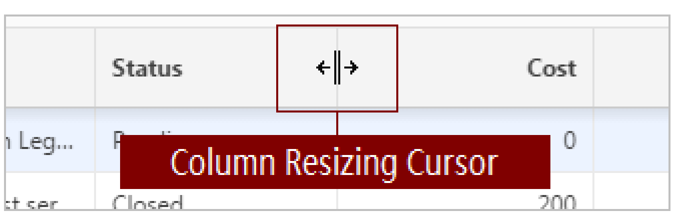
> **See Also:**
>
> - Changing the Column Display in an Interactive Grid
> - Keyboard Shortcuts in Interactive Grid Regions in the *Oracle APEX Accessibility Guide*

3.3.3 Resizing Columns in an Interactive Grid

Resize the width of a column by clicking and holding the edge of a column heading and adjusting it with the mouse.

To resize a column with your mouse:

1. Hover your mouse cursor over the edge of column heading until the cursor changes.



2. Click and hold the mouse.
3. Move the mouse left and right to achieve the desired width.
4. Release the mouse.

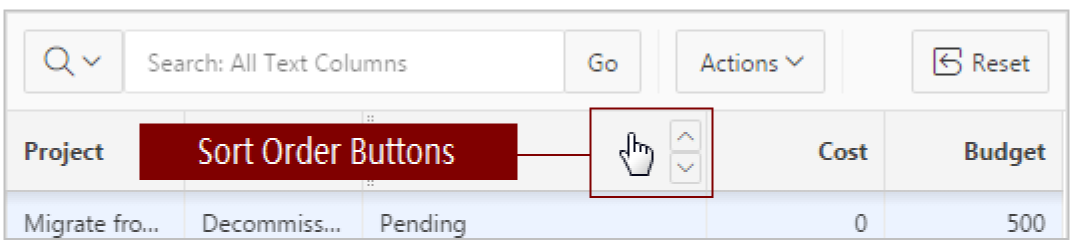
The column resizes.
To undo all changes, click the **Reset** button.

> **WARNING:**
>
> Resetting an interactive grid reverts it to a previously saved state. Any changes since that time may be lost.

> **See Also:**
>
> - Changing the Column Display in an Interactive Grid
> - Interactive Grid for keyboard shortcuts in Interactive Grid

3.3.4 Sorting Columns in an Interactive Grid

Specify the alphabetical, numerical, or chronological order of a column by clicking the Sort Ascending and Sort Descending buttons on the column heading.

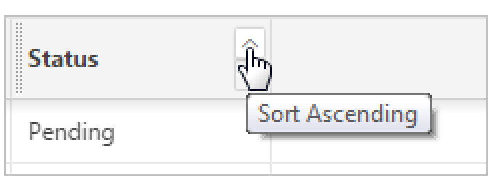


To specify the sort order of a column:

1. Hover the mouse in the column heading.

   The **Sort Ascending** and **Sort Descending** buttons display.

2. Do one of the following:
   - To sort a column in ascending order (A to Z, 1 to 9, earliest to latest), click the **Sort Ascending** button (up arrow).

   - To sort a column in descending order (Z to A, 9 to 1, latest to earliest), click the **Sort Descending** button (down arrow).

- To remove an existing sort, click the toggled button again (now labeled **Don't Sort**).

The column sorts.

3.3.5 Using Charts in an Interactive Grid

Create a chart in an interactive grid by selecting Chart in the Actions menu. Edit or remove the chart with the Edit Chart link.

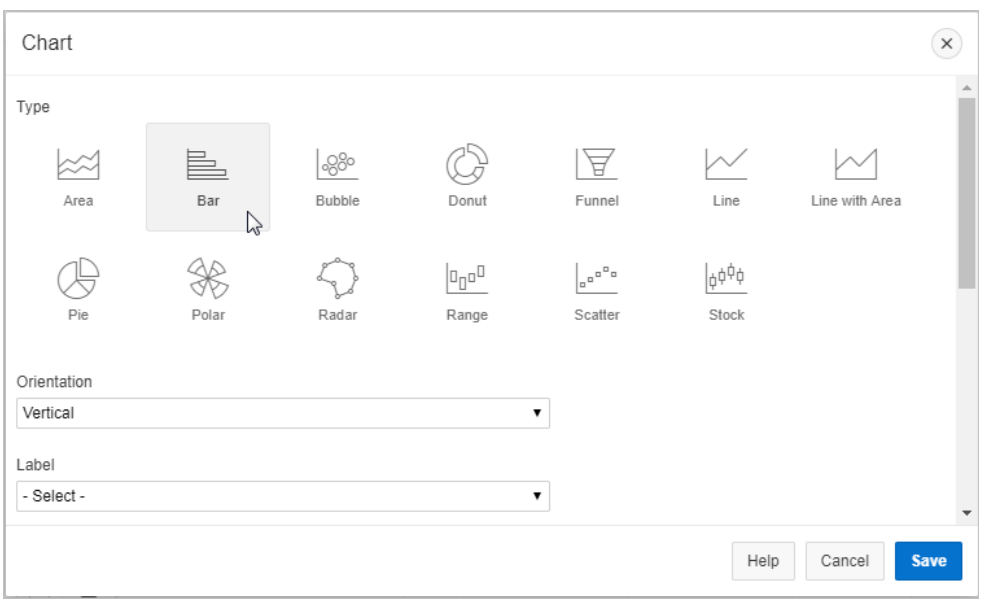
To create a chart from the data in an interactive grid:

1. Click the **Actions** menu and select **Chart**.

   The Chart dialog appears.

2. Select a chart type.

   The dialog populates with options specific to the selected chart type. For example, a bar chart has a different set of configuration fields than a pie chart. Select different types to see the range of available options.



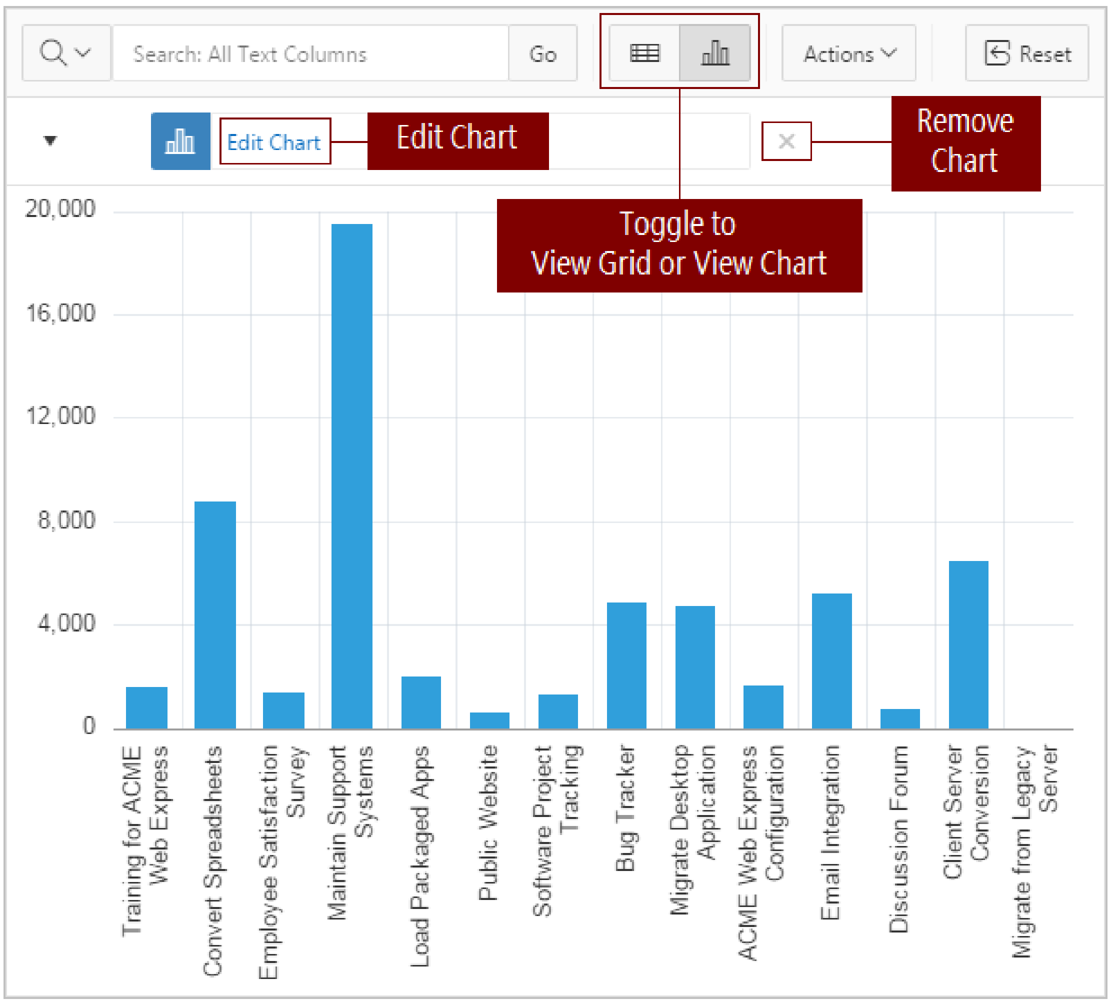
3. Configure the chart settings.

   For example, the following is a configuration for a Bar chart:

- **Orientation** - Select **Vertical** for the bars to increase toward the top of the chart, or **Horizontal** to increase toward the right.
- **Label** - Select the column to be used as the Label (the label appears beneath or beside the bar).
- **Value** - Select the column to be used as the Value (the value is the quantity that determines the size of the bar).
- **Aggregation** - (Optional) Select an additional aggregation to be performed on the column selected for the Value. Valid selections include: Count, Count Distinct, Approx. Count Distinct, Minimum, Maximum, Sum, or Average.

4. Click **Save**.

The chart appears. The following is an example of a bar chart that depicts project budgets with a sum aggregation. To switch the view between **Grid** and **Chart**, click the toggle that now appears at the top of the interactive grid.



To reconfigure the chart, click the **Edit Chart** link.

To remove a chart, click the **Remove Chart** icon (X) adjacent to the chart link.

You can only create one chart at a time in an interactive grid. To create a second chart, reconfigure the existing chart by clicking **Edit Chart**, or delete it by clicking the adjacent **Remove Chart** icon (X).

See Also:

Filtering an Interactive Grid

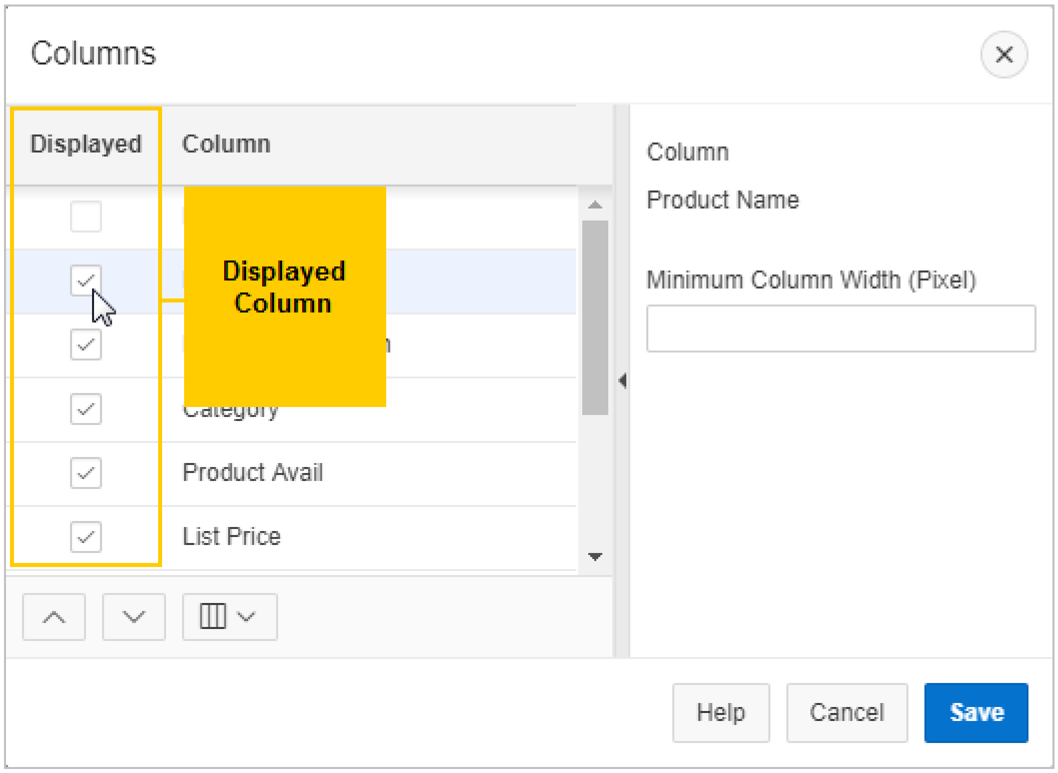
3.4 Customizing an Interactive Grid with the Actions Menu

Reconfigure and augment how an interactive grid displays data by using the Actions menu.

- Changing the Column Display in an Interactive Grid
  Edit which columns display and in what order by selecting Columns in the Actions menu.
- Filtering an Interactive Grid
  Filter an interactive grid by column, row, or both, with text strings and using operators such as *contains* and *equals*.
- Selecting Column Sort Order in an Interactive Grid
  Specify the sort order (ascending or descending) of a column by selecting Sort on the Data submenu. You can also specify how to handle `NULL` values.
- Defining an Aggregation in an Interactive Grid
  Define an aggregation in an interactive grid by selecting Aggregate from the Actions, Format submenu. Aggregates display after each control break and at the end of the interactive grid within the column for which they are defined.
- Creating a Control Break from the Actions Menu in an Interactive Grid
  Apply a hierarchy based on a specific column to an interactive grid by selecting Control Break in the Actions, Format submenu.
- Adding Highlighting to an Interactive Grid
  Apply color effects to an interactive grid by selecting Highlight in the Actions, Format submenu.
- Toggling Stretch Column Widths in an Interactive Grid
  Change the behavior of column widths in an interactive grid by toggling Stretch Column Widths in the Actions, Format submenu.

3.4.1 Changing the Column Display in an Interactive Grid

Edit which columns display and in what order by selecting Columns in the Actions menu.



To edit how columns display in an interactive grid:

1. Click the **Actions** menu and select **Columns**.

   The Columns dialog displays.

2. Edit the columns:
   - **Displayed -** Select the check box to show a column in the grid; deselect a check box to hide a column in the grid.
   - **Move Up** and **Move Down** - Adjust the order in which a column appears in the grid.
   - **Columns** button - Toggle whether the list displays **All**, **Displayed**, or **Not Displayed** (hidden) columns.
   - **Minimum Column Width** (Pixel) **-** Adjust the displayed numeric value to widen or narrow the column.
     a. Set the Minimum Column Width to a smaller number to narrow the column or a larger number to widen the column.
     b. If **Stretch Column Widths** is checked under **Format**, **Actions**, a column may display wider than its Minimum Column Width in order for the grid to stretch to the width of the region. For more information, see Toggling Stretch Column Widths in an Interactive Grid.

3. Click **Save**.

The interactive grid refreshes.

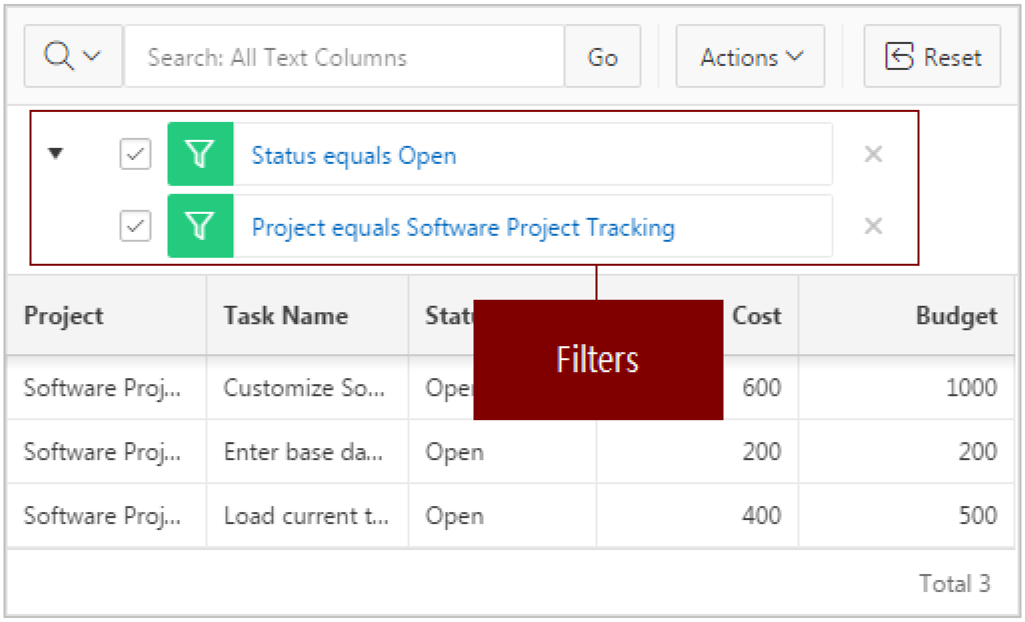
3.4.2 Filtering an Interactive Grid

Filter an interactive grid by column, row, or both, with text strings and using operators such as *contains* and *equals*.

- About Filters in Interactive Grids
  You can narrow the contents of an interactive grid by applying a filter to it. Once applied, filters can be temporarily enabled or disabled or removed permanently directly in the interactive grid. You can also click the filter name for quick reconfiguration.
- Creating a Row Filter in an Interactive Grid
  Create a row filter to limit the number of rows returned in an interactive grid. Filtering by row filters for a term in any filterable column.
- Creating a Column Filter in an Interactive Grid
  Filter a column in an interactive grid with a specified operator and value.
- Editing a Filter in an Interactive Grid
  Edit a filter by clicking the name of a filter to open the Filters dialog. The Filters dialog enables you to edit properties of any filter.
- Disabling a Filter in an Interactive Grid
  Disable a filter by clicking the check box adjacent to the name of the filter.
- Removing a Filter from an Interactive Grid
  Remove a filter by deleting it in the Filters dialog or by clicking the adjacent Remove Filter icon (X).

3.4.2.1 About Filters in Interactive Grids

You can narrow the contents of an interactive grid by applying a filter to it. Once applied, filters can be temporarily enabled or disabled or removed permanently directly in the interactive grid. You can also click the filter name for quick reconfiguration.



Existing filters display between the search bar and the grid.

Rather than deleting a filter, you can disable it by deselecting the adjacent checkbox. You can leave a filter disabled and save your report to preserve it for future usage.

To edit a filter, you can click its name or open the Filters dialog and select it in the list.

You can permanently remove a filter by clicking the adjacent **Remove Filter** icon (X) or by removing it from the list in the Filters dialog.

3.4.2.2 Creating a Row Filter in an Interactive Grid

Create a row filter to limit the number of rows returned in an interactive grid. Filtering by row filters for a term in any filterable column.

To add a filter to the rows in an interactive grid:

1. Click the **Actions** menu.
2. Select **Filter**.

   The Filters dialog displays.
3. In the Filters dialog:
   a. Type - Select **Row**.
   b. Search - Enter the text string to filter.
   c. Case Sensitive - Enable to make the filter case sensitive.
4. Click **Save**.

The interactive grid applies the filter.

3.4.2.3 Creating a Column Filter in an Interactive Grid

Filter a column in an interactive grid with a specified operator and value.

To add a filter to a column in an interactive grid:

1. Click the **Actions** menu.
2. Select **Filter**.

   The Filters dialog displays.
3. In the Filters dialog:
   a. Type - Select **Column**.
   b. Column - Choose the column to filter.
   c. Operator - Choose the filter logic.
   d. Value - Enter the filter criterion.
4. Click **Save**.

The filter is added to the grid.

3.4.2.4 Editing a Filter in an Interactive Grid

Edit a filter by clicking the name of a filter to open the Filters dialog. The Filters dialog enables you to edit properties of any filter.

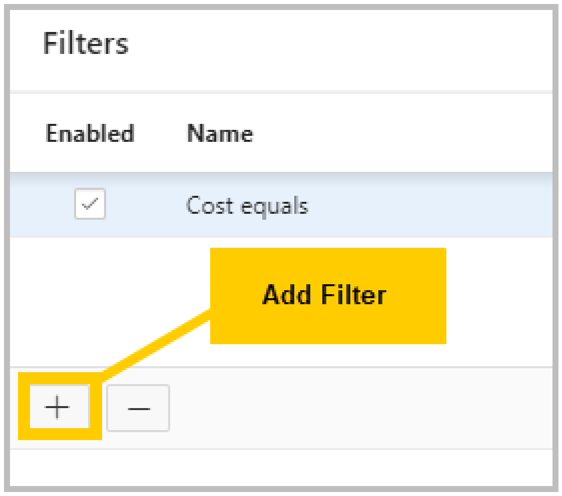
To edit an existing filter:

1. Click the name of a filter.

   The Filters dialog displays.
2. Edit the filter by selecting new values.

   Editable parameters include:
   - the filter type (row, column)
   - the name of the row or column the filter applies to
   - the filter operator
   - the filtered value

   Other filters can also be added, edited, enabled, and removed in this dialog.
3. To add a new filter:
   a. Click the **Add** button (+) adjacent to the Filters list.



b. Configure the appropriate fields.

4. Click **Save** to apply your changes.

3.4.2.5 Disabling a Filter in an Interactive Grid

Disable a filter by clicking the check box adjacent to the name of the filter.

Disabling a filter is often preferable to deleting it because disabling saves the time of recreating and reconfiguring the same filter.

- To disable a filter in an interactive grid:
- Click the check box adjacent to the name of the filter.

The interactive grid reloads and the check box unchecks.
To re-enable the filter, click the check box again.

3.4.2.6 Removing a Filter from an Interactive Grid

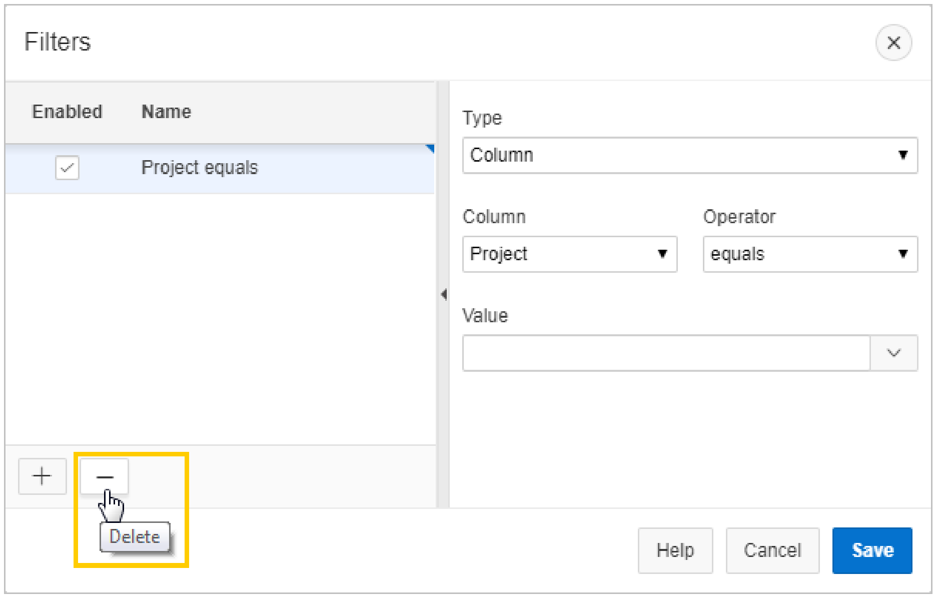
Remove a filter by deleting it in the Filters dialog or by clicking the adjacent Remove Filter icon (X).

> **Tip:**
>
> To temporarily disable a filter, deselect the adjacent check box either within the Filters dialog or above the interactive grid.

To remove a filter, do one of the following:

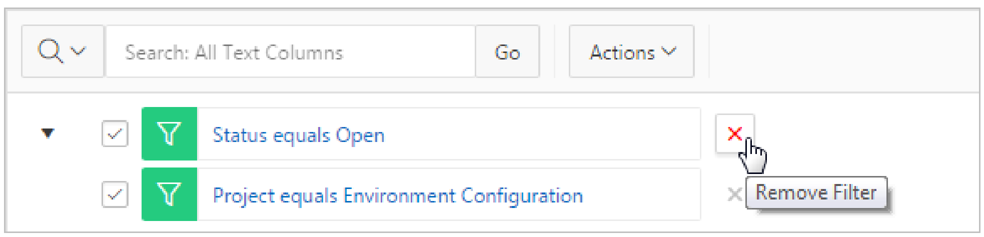
- Open the Filters dialog and delete it:
  1. Click the **Actions** menu and select **Filter**.

     The Filters dialog appears.
  2. In the list of filters, select the filter to remove.
  3. Click the **Delete** button (-).



4. Click **Save**.

- Above the interactive grid, click the **Remove Filter** icon (X) adjacent to a filter.



3.4.3 Selecting Column Sort Order in an Interactive Grid

Specify the sort order (ascending or descending) of a column by selecting Sort on the Data submenu. You can also specify how to handle `NULL` values.

To sort by column:

1. Click the **Actions** menu, select **Data**, then **Sort**.

   The Sort dialog appears.

2. In the Sort dialog: Select a column, the sort direction (**Ascending** or **Descending**), and the null sorting behavior (**Default**, **Nulls Always Last**, or **Nulls Always First**).
   a. Column - Select a column.
   b. Direction - Select **Descending** or **Ascending**.
   c. Nulls - Select **First** or **Last**.

3. To add another sort rule, click the **Add** button (+).

4. Click **Save**.

The interactive grid reloads.

3.4.4 Defining an Aggregation in an Interactive Grid

Define an aggregation in an interactive grid by selecting Aggregate from the Actions, Format submenu. Aggregates display after each control break and at the end of the interactive grid within the column for which they are defined.

- Creating an Aggregation in an Interactive Grid
  Create an aggregation in an interactive grid by selecting Aggregate in the Actions, Data submenu.
- Editing an Aggregation in an Interactive Grid
  Edit an existing aggregations by selecting the Aggregate in the Actions, Data submenu.
- Removing an Aggregation in an Interactive Grid
  Use the Aggregate dialog to remove an aggregation.

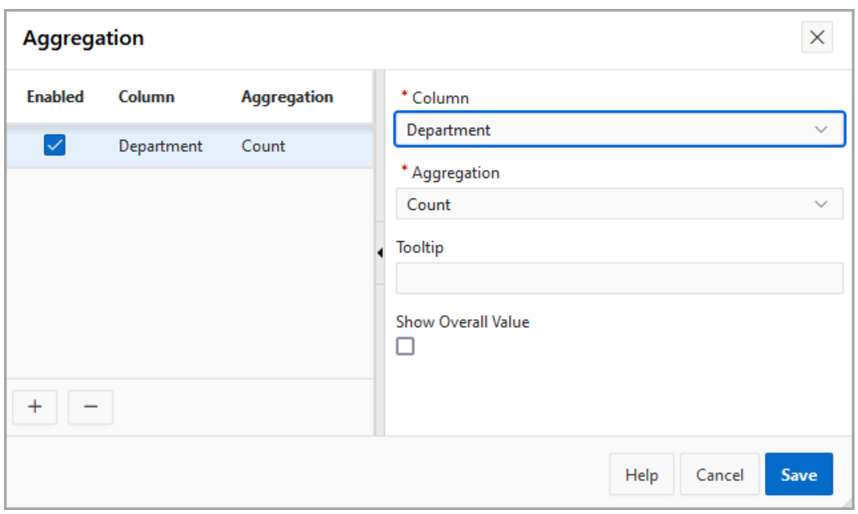
3.4.4.1 Creating an Aggregation in an Interactive Grid

Create an aggregation in an interactive grid by selecting Aggregate in the Actions, Data submenu.

To create an aggregation against a column:

1. Click the **Actions** menu, select **Data**, then **Aggregate**.

   The Aggregation dialog appears. (Some fields may be pre-filled.)

2. In the Aggregation dialog:
   a. Column – Select the column to define against
   b. Aggregation – Select the type of aggregation to apply
   c. Tooltip – (Optional) Add a label that appears when you hover the mouse over the aggregation.
   d. (Optional) Show Overall Value – Select to display the grand total of a column
3. To add another aggregation:
   a. Click the **Add** icon (+).

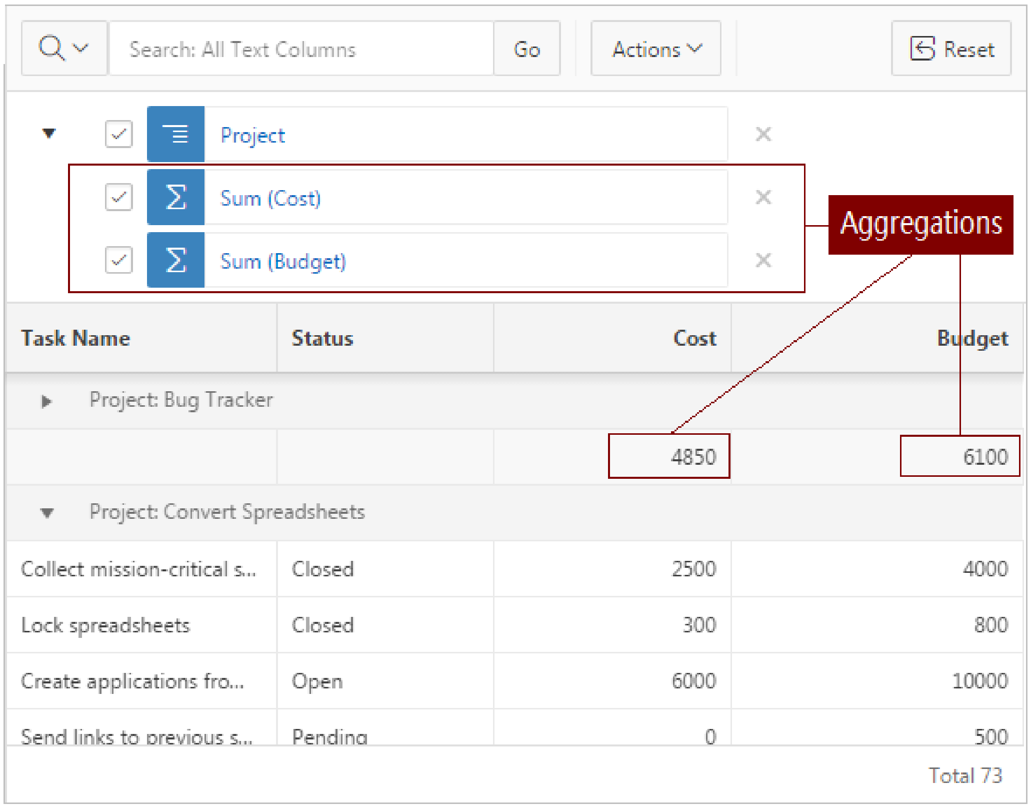
A new Aggregation appears in the list.

   b. Define the new aggregation as described in the previous step.

4. Click **Save**.

The result of the aggregation appears at the bottom of the last page of the report.

The following example is an interactive grid with two *sum* aggregations applied to two different columns (a control break has also been applied to simplify the presentation):



3.4.4.2 Editing an Aggregation in an Interactive Grid

Edit an existing aggregations by selecting the Aggregate in the Actions, Data submenu.

To edit an aggregation with the Aggregate dialog:

1. Click the **Actions** menu.
2. Select the **Data** submenu, then **Aggregate**.

   The Aggregate dialog displays.
3. Select an aggregation.
4. Edit the aggregation. Editable fields include the column to define against, the function type, Tooltip, and Show Overall Value.
5. Click **Save**.

3.4.4.3 Removing an Aggregation in an Interactive Grid

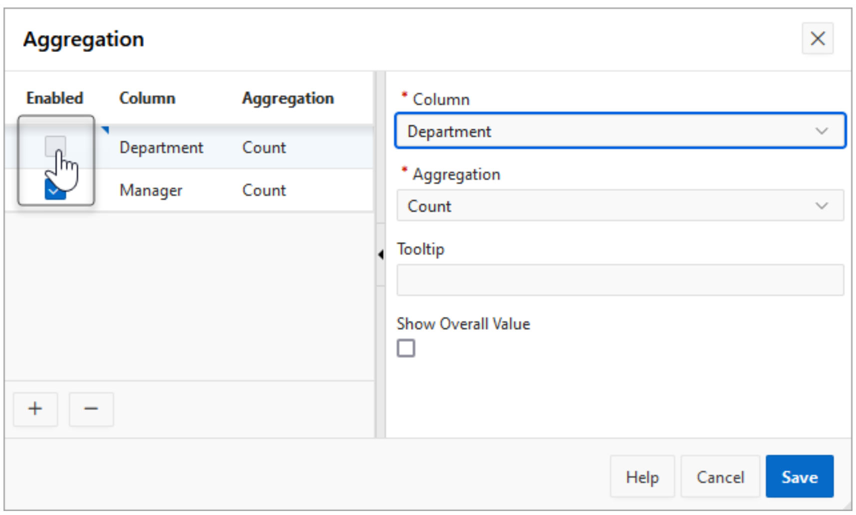
Use the Aggregate dialog to remove an aggregation.

> **Tip:**
>
> You can delete or disable an aggregation by interacting with the aggregation filter above the interactive grid. To delete an aggregation, click the **Remove Aggregation** icon (X); to disable an aggregation, select the adjacent check box.

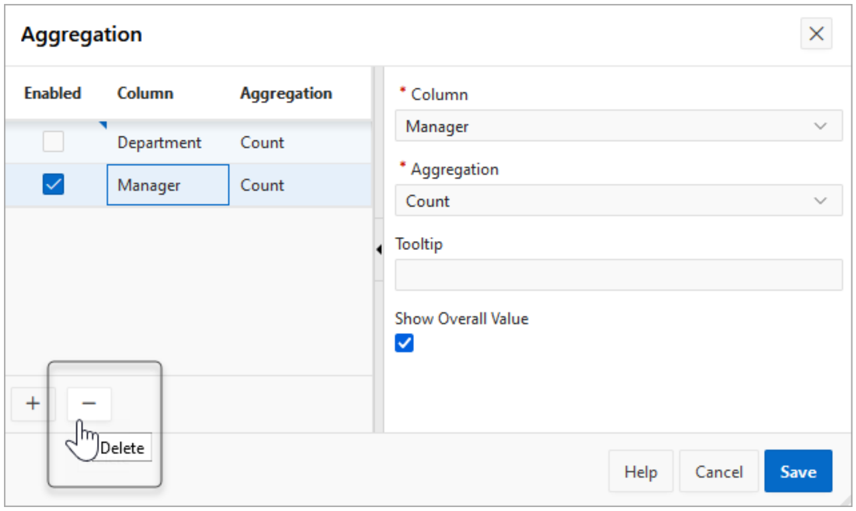
To remove an aggregation with the Aggregation dialog:

1. Click the **Actions** menu.
2. Select the **Data** submenu, then **Aggregate**.

   The Aggregation dialog displays.
3. Do one of the following:
   - To hide an aggregation from view in the grid, click the adjacent checkbox in the Enabled column. This disables the aggregation and stores it for future use in the Aggregation dialog.

   - To remove the selected aggregation from the grid completely and permanently, click the **Delete** icon (**—**).



4. Click **Save**.

3.4.5 Creating a Control Break from the Actions Menu in an Interactive Grid

Apply a hierarchy based on a specific column to an interactive grid by selecting Control Break in the Actions, Format submenu.

Creating a break group pulls the columns out of the interactive grid and displays them as a master record.

To create a control break:

1. Click the **Actions** menu and select **Format** then **Control Break**.

   The Control Break dialog displays.

2. In the Control Break dialog:

   a. Column - Select the name of the column.

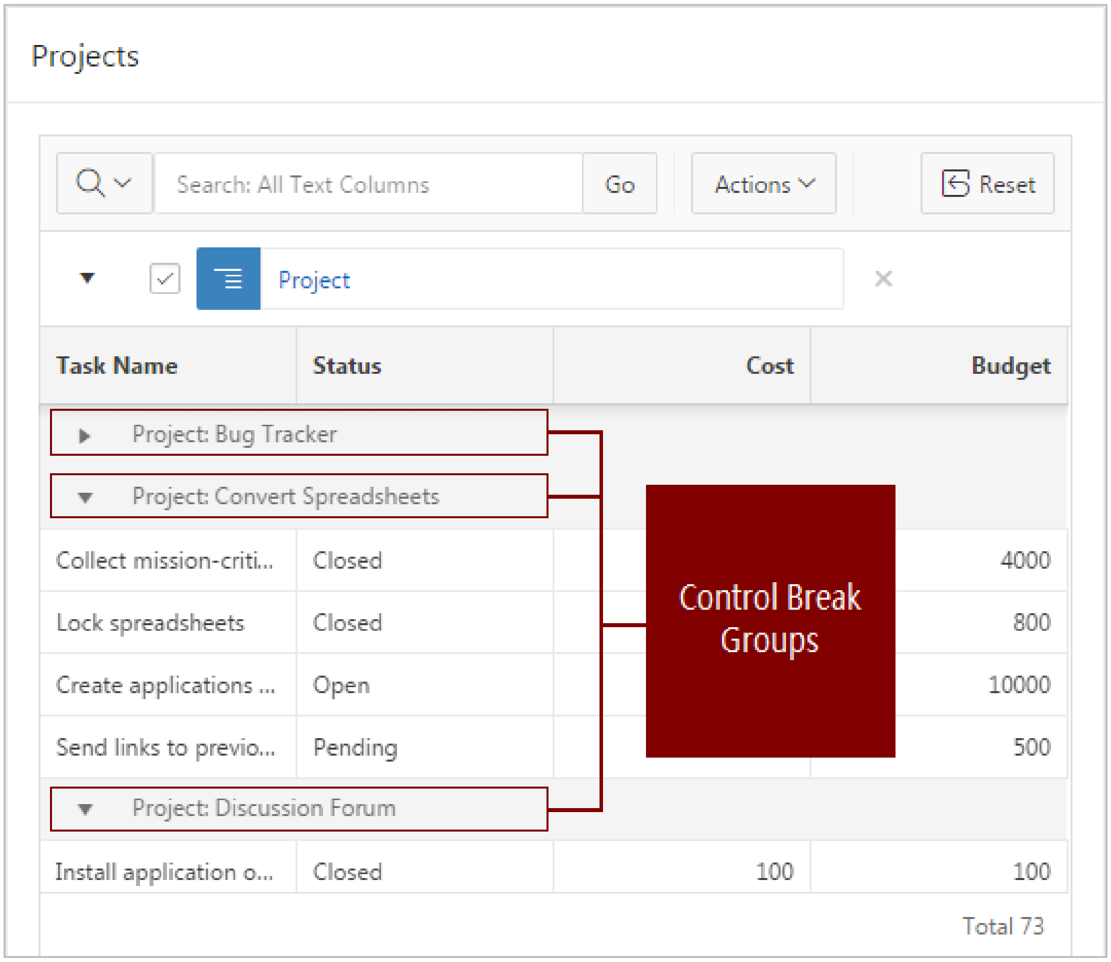
   b. Direction - Select the sort direction (**Ascending** or **Descending**).

   c. Nulls - Select the null sorting behavior (**First** or **Last**).

3. Click **Save**.

The interactive grid reloads with the control break applied for the selected column, and a control break filter appears above the grid near the toolbar.

In the following example, a control break has been applied to the interactive grid for the Project column.



To edit a control break, click the name to display the Control Break dialog. You can also add, edit, and delete other control breaks in the Control Break dialog.

To remove a control break, click the **Remove Control Break** icon (X) on the control break filter.

> **See Also:**
>
> About Filters in Interactive Grids

3.4.6 Adding Highlighting to an Interactive Grid

Apply color effects to an interactive grid by selecting Highlight in the Actions, Format submenu.

To highlight an interactive grid cell:

1. Click **Actions** and select **Format** then **Highlight**.

   The Highlight dialog displays.

2. In the Highlight dialog:

a. Name - Enter the name of the highlight (this name displays as a filter above the interactive grid).
b. Highlight - Choose the **Row** or **Column** to apply the highlight.
c. Background Color - Select the color of the background in a highlighted cell. Choose a specific RGB value or a basic color from a list of presets.
d. Text Color - Select the color of the text in a highlighted cell. Choose a specific RGB value or a basic color from a list of presets.

3. (Optional) In the Highlight dialog, configure advanced highlighting conditions. For example, to conditionally highlight all tasks with a Status of Closed:
   a. Condition Type - Select **Column**.
   b. Column - Select **Status**.
   c. Operator - Select **equals**.
   d. Value - Click the arrow to display the drop-down list of valid values and select **Closed** from the drop-down list.
4. To add an additional highlight, click the **Add** icon (+); click the **Delete** icon (—) to remove an existing highlight.
5. Click **Save**.

3.4.7 Toggling Stretch Column Widths in an Interactive Grid

Change the behavior of column widths in an interactive grid by toggling Stretch Column Widths in the Actions, Format submenu.

When **Stretch Column Widths** is toggled on, the interactive grid automatically takes up the width of your screen, even if you resize some of the columns to be smaller. When **Stretch Column Widths** is toggled off, the grid may be smaller than the width of your screen.

To change the behavior of interactive grid column widths:

1. Click **Actions** and select **Format**.
   - If there is a checkmark next to **Stretch Column Widths**, it is toggled on, and the interactive grid automatically takes up the width of your screen.
   - If there is no checkmark next to **Stretch Column Widths**, it is toggled off, and the interactive grid may be smaller than the width of your screen.
2. Select Stretch Column Widths to change the settings for column widths.

   For more on column widths, see Changing the Column Display in an Interactive Grid.
3. Click **Save**.

3.5 Customizing an Interactive Grid with the Column Heading Menu

Use the Column Heading menu to quickly customize a column in an interactive grid.

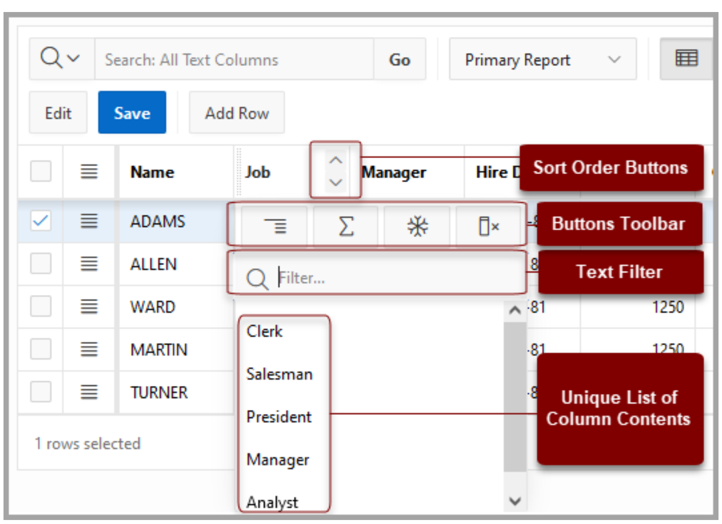
- About the Column Heading Menu in an Interactive Grid
  The Column Heading Menu contains buttons to sort, break, aggregate, freeze, and hide a column, as well as a text filter for searching within a column.
- Displaying the Column Heading Menu
  Display a column's Column Heading menu by clicking the heading of the column.
- Creating a Control Break in an Interactive Grid
  Create a break group in an interactive grid by clicking the Control Break icon in the Column Heading menu.
- Creating an Aggregation with the Column Heading Menu
  Quickly apply an aggregation to an interactive grid by clicking the Aggregate icon in the Column Heading menu.
- Freezing Columns in Place
  Freeze a column in place by clicking the Freeze icon in the Column Heading menu. Freezing a column excludes it from the scrollable area so that the frozen column is always visible.
- Hiding Columns in an Interactive Grid
  Hide a column in an interactive grid from view by clicking the Hide icon in the Column Heading menu.
- Unhiding Columns in an Interactive Grid
  Show a hidden column in an interactive grid by opening the Columns dialog and enabling it in the Displayed column.
- Filtering with the Column Heading Menu
  Filter an interactive grid by the contents of a column by entering keywords in the Search field of the Column Heading menu.

3.5.1 About the Column Heading Menu in an Interactive Grid

The Column Heading Menu contains buttons to sort, break, aggregate, freeze, and hide a column, as well as a text filter for searching within a column.

Overview

The Column Heading menu contains Sort Order buttons, a Toolbar, a Text Filter, and a unique list of the column's contents.



Sort Order Buttons

The **Sort Ascending** and **Sort Descending** buttons appear at the right of every column heading.

See Sorting Columns in an Interactive Grid.

Button Toolbar

The toolbar on the Column Heading menu contains the following buttons and functions.

- **Control Break** - Creates a Control Break in the interactive grid based on the selected column.

  See Creating a Control Break in an Interactive Grid.
- **Aggregate** - Opens the Aggregation dialog to define an aggregation against the selected column.

  See Creating an Aggregation in an Interactive Grid.
- **Freeze** - Freezes the selected column in place, preventing horizontal scrolling.

  See Freezing Columns in Place.
- **Hide** - Hides the selected column from view.

  See Hiding Columns in an Interactive Grid.

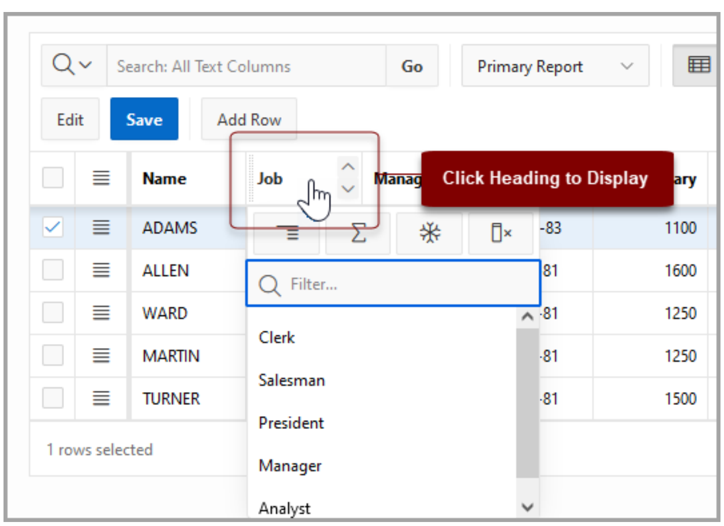
Text Filter

The text filter dynamically limits the list of column contents based on the text string entered into the filter field.

See Filtering with the Column Heading Menu.

3.5.2 Displaying the Column Heading Menu

Display a column's Column Heading menu by clicking the heading of the column.



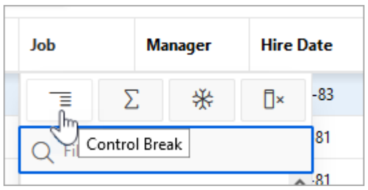
To display a column's Column Heading menu:

- Click the heading of a column in an interactive grid.

The Column Heading menu displays.

3.5.3 Creating a Control Break in an Interactive Grid

Create a break group in an interactive grid by clicking the Control Break icon in the Column Heading menu.



Creating a break group pulls the columns out of the interactive grid and displays them as a master record.

To create a control break:

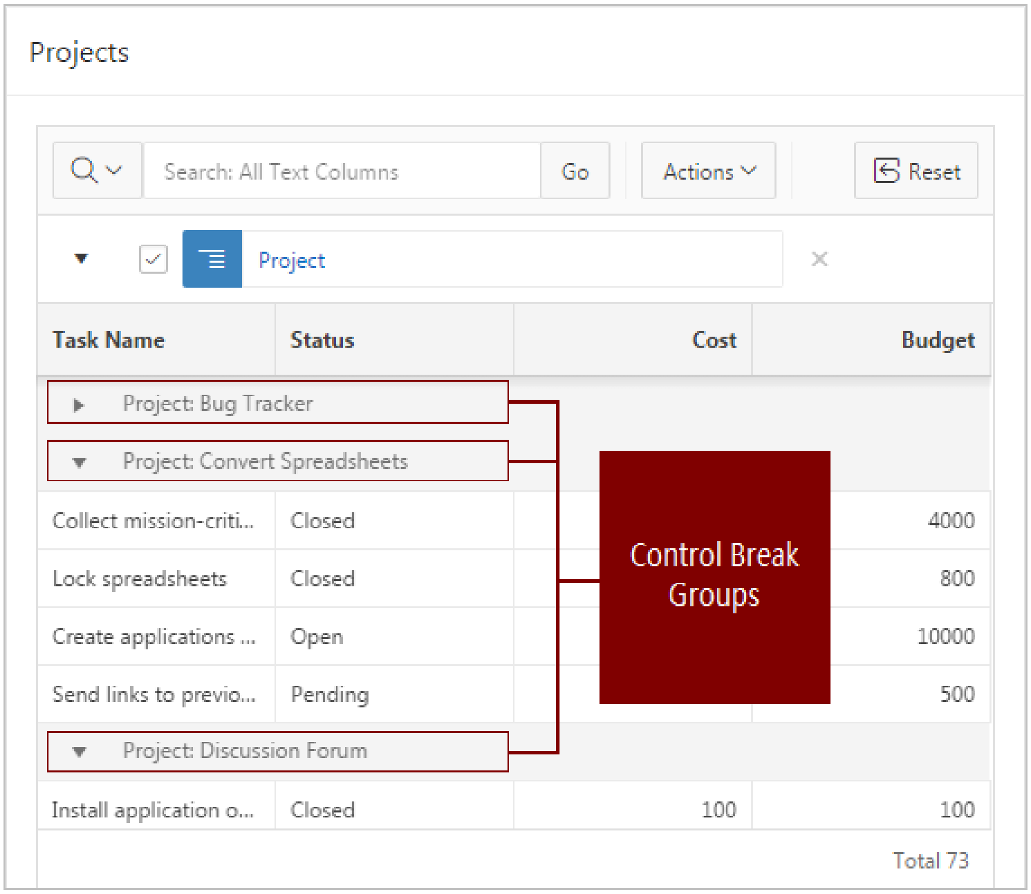
1. Click the heading of the desired break group column.

   The Column Heading menu appears.

2. Click the **Control Break** icon.

The interactive grid reloads with the control break applied for the selected column, and a control break filter appears above the grid near the toolbar.

In the following example, a control break has been applied to the interactive grid for the Project column.



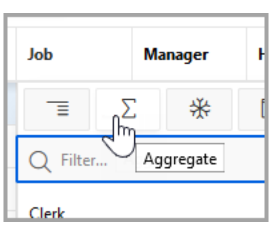
To remove a control break, click the **Remove Control Break** icon (X) on the control break filter.

See Also:

- About Filters in Interactive Grids
- Creating a Control Break from the Actions Menu in an Interactive Grid

3.5.4 Creating an Aggregation with the Column Heading Menu

Quickly apply an aggregation to an interactive grid by clicking the Aggregate icon in the Column Heading menu.



To apply an aggregation against a selected column:

1. Click the heading of the column to display the Column Heading menu.
2. Click the **Aggregate** icon.

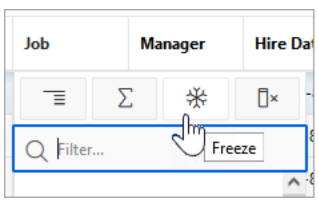
   The Aggregation dialog appears.
3. Configure the aggregation.
4. Click **Save**.

The interactive grid reloads with the aggregation applied.

> **See Also:**
>
> Creating an Aggregation in an Interactive Grid

3.5.5 Freezing Columns in Place

Freeze a column in place by clicking the Freeze icon in the Column Heading menu. Freezing a column excludes it from the scrollable area so that the frozen column is always visible.



To freeze a column in place:

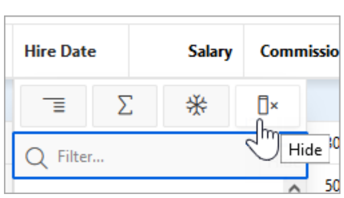
1. Click the heading of the column that you wish to freeze.

   The Column Heading menu appears.
2. Click the **Freeze** icon.

The scroll bar resizes to fit the new scrollable area.
To unfreeze a frozen column, reopen the Column Heading menu and click the **Unfreeze** icon (snowflake).

3.5.6 Hiding Columns in an Interactive Grid

Hide a column in an interactive grid from view by clicking the Hide icon in the Column Heading menu.



To hide a column in an interactive grid:

1. Click the heading of the column to display the Column Heading menu.
2. Click the **Hide** icon.

   The column disappears. Remaining columns shift sideways to fill the space.

To redisplay hidden columns:

3. Click the **Actions** menu.
4. Select **Columns**.

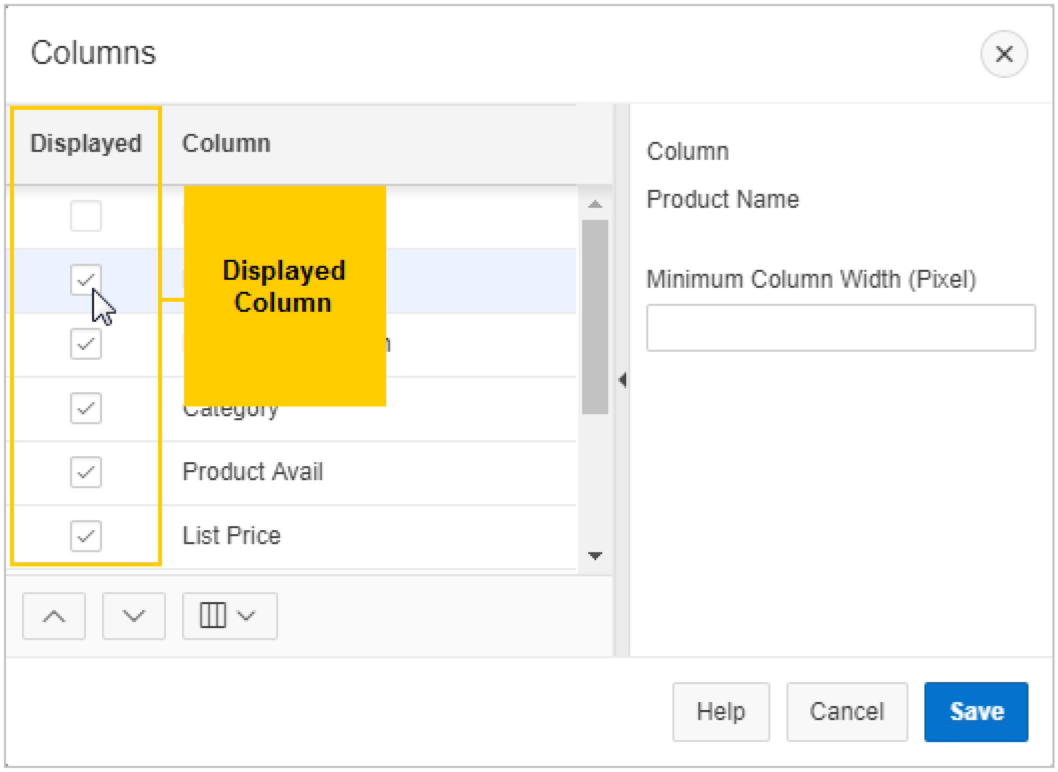
   The Columns dialog displays.
5. In the Displayed column, select the check box adjacent to the name of the hidden column.

   > **Tip:**
   >
   > Narrow the list of columns to only the hidden columns by clicking the **Columns** icon and selecting **Not Displayed**.
6. Click **Save**.

> **Tip:**
>
> You can also reset the grid to redisplay a hidden column. Resetting an interactive grid reverts it to a previously saved state. Any changes since that time may be lost. To reset the grid, click the **Reset** button.

3.5.7 Unhiding Columns in an Interactive Grid

Show a hidden column in an interactive grid by opening the Columns dialog and enabling it in the Displayed column.



To show a hidden column in an interactive grid:

1. Click the **Actions** menu.
2. Select **Columns**.

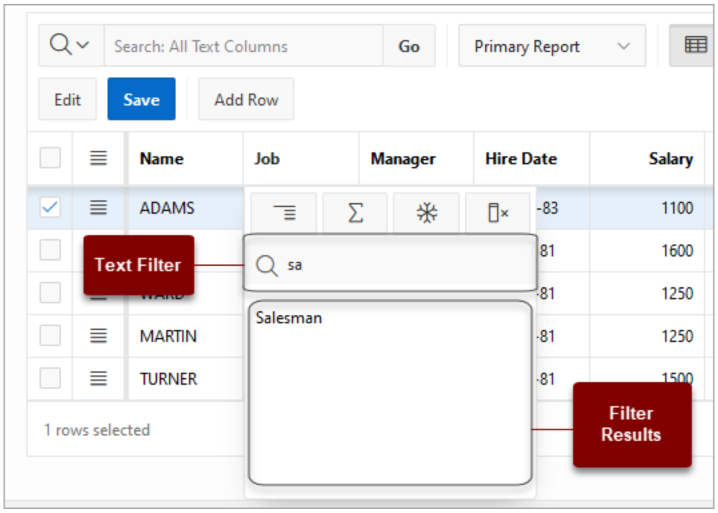
   The Columns dialog displays.
3. In the Displayed column, select the check box adjacent to the name of the hidden column.

   > **Tip:**
   >
   > Narrow the list of columns to only the hidden columns by clicking the **Columns** icon and selecting **Not Displayed**.
4. Click **Save**.

The column appears in the interactive grid.

3.5.8 Filtering with the Column Heading Menu

Filter an interactive grid by the contents of a column by entering keywords in the Search field of the Column Heading menu.



To filter an interactive grid by column:

1. Click the heading of the column that you wish to sort by.

   The Column Heading menu displays.

2. Do one of the following:
   - Click within the **Filter...** text area.
   - Press the **Tab** key until the cursor is within the **Filter...** text area.
3. Enter the text string you wish to filter by. Wildcards (such as quotation marks) are valid.
4. Do one of the following:
   - Press **Enter** to run the filter.
   - Select an entry from a list of valid strings that autogenerates when you start typing.

The interactive grid redisplays with the filter applied.
To remove a filter, click the adjacent **Remove Filter** icon (X).

See Also:

Filtering an Interactive Grid

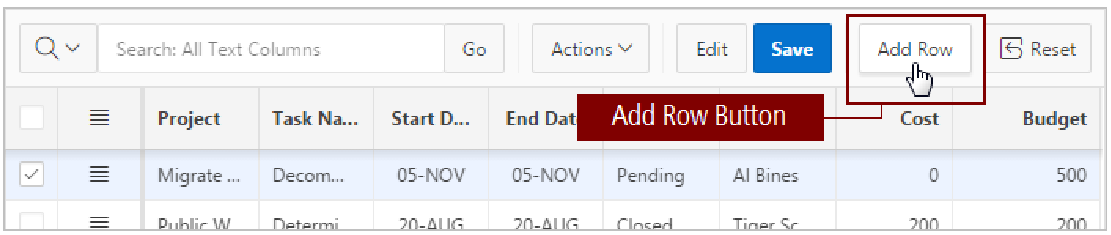
3.6 Using an Editable Interactive Grid

Editable interactive grids expand the functionality of regular interactive grids to enable you to more directly update a grid's structure and contents. You can add and delete rows, edit cell contents, and refresh the grid with the latest updates.

- Adding a Row in an Editable Interactive Grid
  Click the Add Row button to add a new row to an editable interactive grid.
- Editing Rows in an Interactive Grid
  Edit rows of an editable interactive grid with the Row Actions Menu, Edit button, and other functions in the interface.
- Deleting a Row in an Interactive Grid
  Use the Row Actions Menu to delete a row from an editable interactive grid.
- Modifying Multiple Rows and Cells in an Editable Interactive Grid
  Quickly modify the values of multiple rows and cells with the Actions, Selection submenu.

3.6.1 Adding a Row in an Editable Interactive Grid

Click the Add Row button to add a new row to an editable interactive grid.



- To add a new row to the top of an editable interactive grid:
- Click the **Add Row** button.

A blank row appears at the top of the grid or below the currently selected row.

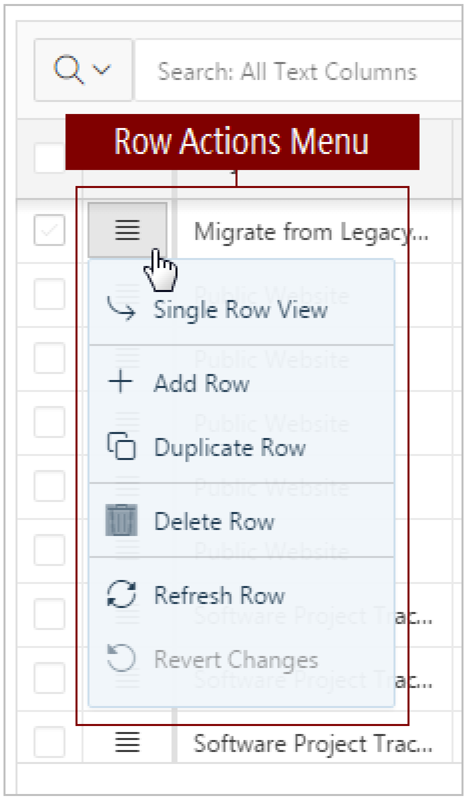
3.6.2 Editing Rows in an Interactive Grid

Edit rows of an editable interactive grid with the Row Actions Menu, Edit button, and other functions in the interface.

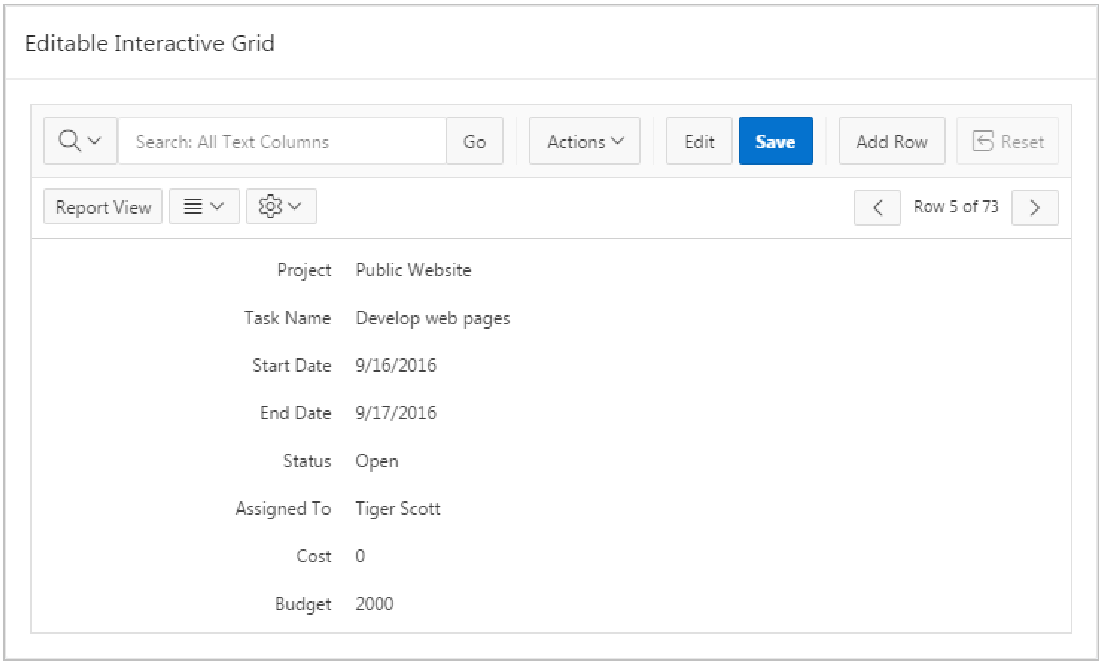
- About the Row Actions Menu in an Editable Interactive Grid
  The Row Actions Menu appears in editable interactive grids. Users can quickly edit the rows of an editable grid with functions such as adding, duplicating, deleting, refreshing, and reverting rows.
- About the Edit Button in an Editable Interactive Grid
- Editing a Cell in an Interactive Grid
  Double-click a cell in an editable interactive grid to edit the contents.
- Editing Multiple Rows in an Editable Interactive Grid
  Select the desired rows of an editable interactive grid to edit, then select an option from the Selection Actions menu.

3.6.2.1 About the Row Actions Menu in an Editable Interactive Grid

The Row Actions Menu appears in editable interactive grids. Users can quickly edit the rows of an editable grid with functions such as adding, duplicating, deleting, refreshing, and reverting rows.



Single Row View
Changes the grid display to a single-page view of a row's contents. Used for viewing an individual row in detail, one row at a time. Click the **Previous** and **Next** buttons to navigate between rows in the grid. Click the **Report View** button to return to the grid.



Add Row
Adds a new row below the current one.

Duplicate Row
Creates a copy of the currently selected row and inserts the copy below the original.

Delete Row
Deletes the row.

Refresh Row
Reloads the row by calling the database and pulling in any updates.

> **Note:**
>
> Refresh a row to update it without reloading the entire application page.

Revert Changes
Undoes any changes to the row since the grid was last saved.

> **See Also:**
>
> Editing Multiple Rows in an Editable Interactive Grid

3.6.2.2 About the Edit Button in an Editable Interactive Grid

The Edit button toggles Editing mode in editable interactive grids. When enabled, you can single-click a cell to edit it; when disabled, you must double-click. While Editing mode enables quicker editing of multiple cells in succession, it can impede navigation in larger grids.

3.6.2.3 Editing a Cell in an Interactive Grid

Double-click a cell in an editable interactive grid to edit the contents.

To edit the contents of a single cell in an editable interactive grid:

1. Double-click a cell.

   Editing mode engages and a cursor displays in the cell.
2. Edit the cell contents.
3. Press **Tab** or **Shift + Tab** to edit an adjacent cell in the row or **Enter** or **Shift + Enter** to edit an adjacent cell in the column.
4. To exit editing mode, press **Escape**.
5. Click **Save** to save your changes.

Changes to the interactive grid are saved.

3.6.2.4 Editing Multiple Rows in an Editable Interactive Grid

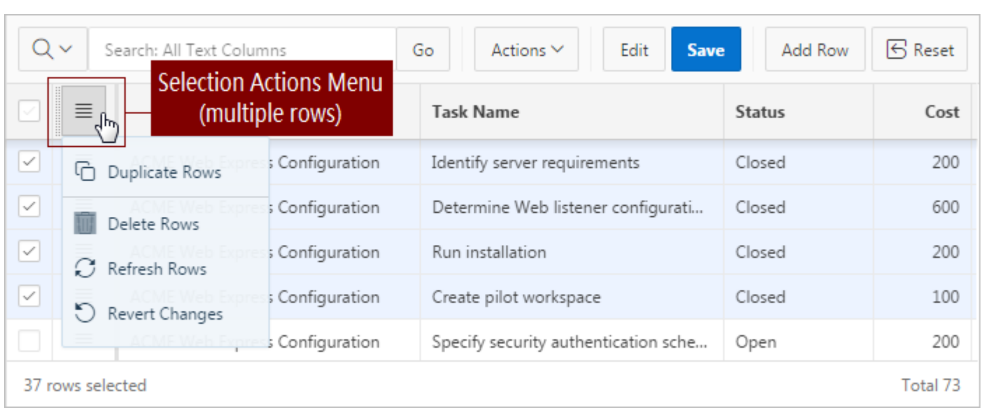
Select the desired rows of an editable interactive grid to edit, then select an option from the Selection Actions menu.

To edit multiple rows in an editable interactive grid:

1. Select rows by selecting check boxes in the check box column.

   > **Tip:**
   >
   > Click the check box in the column heading to select all rows. With all rows selected, click it again to deselect all rows.

2. In the column heading of the interactive grid, click the **Selection Actions** menu icon



3. Select a valid option. Options include Copy to Clipboard, Duplicate Rows, Delete Rows, Refresh Rows, Revert Changes, Copy Down, Fill, and Clear.

The selected change applies.

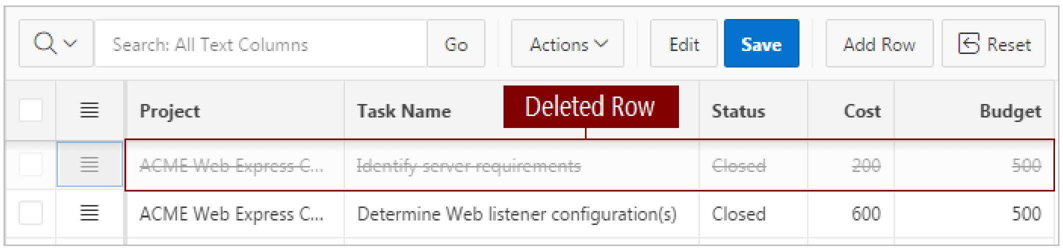
3.6.3 Deleting a Row in an Interactive Grid

Use the Row Actions Menu to delete a row from an editable interactive grid.

To delete a row from an editable grid:

1. Click the **Row Actions** menu icon adjacent to the row.
2. Select **Delete Row**.

   The row is crossed out in the grid.



3. To finalize the deletion, click **Save**.

The grid reloads with the selected row removed.

3.6.4 Modifying Multiple Rows and Cells in an Editable Interactive Grid

Quickly modify the values of multiple rows and cells with the Actions, Selection submenu.

- About Selection Modes in an Editable Interactive Grid
  You can select rows or groups of cells in an interactive grid by toggling between selection modes.
- Changing Selection Mode in an Editable Interactive Grid
  Switch between Cell Selection mode and Row Selection mode by using the Actions, Selection submenu.
- Copying to Multiple Rows in an Editable Interactive Grid
  Copy the value of a row and apply it to a group of rows by using Copy Down in the Actions, Selection submenu.
- Copying to Multiple Cells in an Editable Interactive Grid
  Copy the value of a cell and apply it to a group of cells in the same column by using Copy Down in the Actions, Selection submenu.
- Filling Cells in an Editable Interactive Grid
  Apply a single value to a group of cells in an editable interactive grid by using Fill in the Actions, Selection submenu.
- Clearing Cells in an Interactive Grid
  Delete the contents of multiple cells by using Clear in the Actions, Selection submenu.

3.6.4.1 About Selection Modes in an Editable Interactive Grid

You can select rows or groups of cells in an interactive grid by toggling between selection modes.

Row Selection
Row Selection is the default selection mode in interactive grids. Check boxes appear next to every row in the left-hand column, so you can select multiple individual rows at once by mouse-click. You can also press the arrow keys on the keyboard to navigate up and down between rows, or hold the **Shift** key at the same time to select multiple adjacent rows.
With multiple rows selected, you can use the Selection menus to apply a single change to the entire selection.

Cell Selection
You can switch to Cell Selection mode in the Selection submenu in the Actions menu or by pressing **F8**.
In Cell Selection mode, the check boxes disappear, and you can select individual cells by mouse-click. You can also hold the **Shift** key and use mouse or the arrow keys to select multiple adjacent cells.
With multiple cells selected, you can use the Selection menus to apply a single change to the entire selection.

3.6.4.2 Changing Selection Mode in an Editable Interactive Grid

Switch between Cell Selection mode and Row Selection mode by using the Actions, Selection submenu.

Interactive grids are in Row Selection mode by default. You can switch to selection modes to select groups of rows or cells.

1. To switch selection modes, do one of the following:
   - Click the **Actions** menu, select **Selection**, and click **Cell Selection** or **Row Selection**.
   - Press **F8** on your keyboard (**Tip:** ensure only one or no objects are selected).

   The selection mode switches.
2. To switch back, repeat this step.

3.6.4.3 Copying to Multiple Rows in an Editable Interactive Grid

Copy the value of a row and apply it to a group of rows by using Copy Down in the Actions, Selection submenu.

To apply the value of an existing row to a group of rows below it:

1. Ensure you are in **Row Selection** mode.
2. Select the row you want to copy.
3. Do one of the following to select the rows you want to change:
   - Using the mouse, click the adjacent check boxes. Using the check boxes enables you to apply changes to non-contiguous rows.

    - Using the keyboard, hold **Shift** and press the **Down** arrow key to quickly select a group of adjacent rows below the first row. If you select too many rows, keep holding **Shift** and press the **Up** arrow key to de-select rows.
4. Click the **Actions** menu, select **Selection**, and select **Copy Down**.

    > **Tip:**
    >
    > You can also use the Selection Actions menu in the header row to quickly access several Selection submenu options (including Copy Down).

The first row is copied to the rows selected below it.

> **Tip:**
>
> Undo changes to the data by selecting the affected row(s), and clicking **Actions**, **Selection**, **Revert Changes**.

3.6.4.4 Copying to Multiple Cells in an Editable Interactive Grid

Copy the value of a cell and apply it to a group of cells in the same column by using Copy Down in the Actions, Selection submenu.

To apply the value of an existing cell to a group of cells below it:

1. Ensure you are in **Cell Selection** mode.
2. Select the cell you want to copy.
3. Do one of the following to select the cells you want to change (all cells in a single selection must be contiguous):
    - Using the mouse, hold the **Shift** key and click the last cell in the group.
    - Using the keyboard, hold the **Shift** key and press the **down arrow key** to select cells.
4. Click the **Actions** menu, select **Selection**, and select **Copy Down**.

    > **Tip:**
    >
    > You can also use the Selection Actions menu in the header row to quickly access several Selection submenu options (including Copy Down).

The first cell is copied to the cells selected below it.

You can also select cells in adjacent columns and use Copy Down to copy the value of the different cells in each column to cells below it (values do not copy across columns).

> **Tip:**
>
> Undo changes to the data by selecting the affected row(s), and clicking **Actions**, **Selection**, **Revert Changes**.

3.6.4.5 Filling Cells in an Editable Interactive Grid

Apply a single value to a group of cells in an editable interactive grid by using Fill in the Actions, Selection submenu.

You can also apply a single value to all the cells in a row (or a group of rows) by using Fill in **Row Selection** mode.

To apply a single value to all the cells in a row or group of rows:

1. Ensure you are in **Cell Selection** mode by selecting **Actions**, then **Selection**, and then **Cell Selection**. You can also press **F8**.
2. Select the first cell of the group.
3. Press and hold the **Shift** key, and use the mouse or arrow keys to select a group of cells.

   > **Tip:**
   >
   > All selected cells must be adjacent for a single Fill action. Repeat this procedure for non-adjacent cells.

4. Select the **Actions** menu, select **Selection**, and select **Fill**.

   The Fill Selection dialog displays.
5. Enter a value. Click **OK**.
6. (Optional) Change back to **Row Selection** mode by selecting **Actions**, then **Selection**, and then **Row Selection**. You can also press **F8**.

The entered value applies to the selected cells.

> **Tip:**
>
> Undo changes to the data by selecting the affected row(s), and clicking **Actions**, **Selection**, **Revert Changes**.

3.6.4.6 Clearing Cells in an Interactive Grid

Delete the contents of multiple cells by using Clear in the Actions, Selection submenu.

You can also clear all of the cells in a row (or a group of rows) by using Fill in **Row Selection** mode.

To delete the contents of a group of adjacent cells:

1. Ensure you are in **Cell Selection** mode (select **Actions** menu and then **Selection**, or press **F8**).
2. Select the first cell of the group.
3. Press and hold the **Shift** key, and use the mouse or arrow keys to select a group of cells.

> **Tip:**
>
> All selected cells must be adjacent for a single Clear action. Repeat this procedure for non-adjacent cells.

4. Select the **Actions** menu, select **Selection**, and select **Clear**.

The value of the selected cells is replaced with an empty text string.

You do not need to save the report because Clear directly affects the data in the database.

> **Tip:**
>
> Undo changes to the data by selecting the affected row(s), and clicking **Actions**, **Selection**, **Revert Changes**.

3.7 Saving Interactive Grids

Save your changes as a new report within the application. Name and keep these interactive grid reports Private or make them Public to share with other users.

- About Interactive Grid Report Types
  Reports in interactive grids have different uses and characteristics. You interact with the Primary report of an interactive grid, and save your changes as Private reports.
- Saving a Report in an Interactive Grid
  Save your changes to an interactive grid by clicking Save As in the Actions, Report submenu.
- Renaming a Report in an Interactive Grid
  Change the name of an interactive grid report by selecting Edit in the Actions, Report submenu.
- Deleting a Report in an Interactive Grid
  Delete a Private report from an interactive grid by selecting Delete in the Actions, Report submenu.

3.7.1 About Interactive Grid Report Types

Reports in interactive grids have different uses and characteristics. You interact with the Primary report of an interactive grid, and save your changes as Private reports.

The following is a list of default report types in Oracle APEX, although developers can choose to add more:

Private Report
You can save a Private report of the interactive grid to preserve your changes to it (such as filters, aggregations, column order, visible columns, and other customizations).
Private reports can only be viewed by the user who creates them.

Primary Report
The default view of an interactive grid is the Primary report.

While you can customize the look and organization of a Primary report, you cannot overwrite or rename it. The Primary report is useful as a backup or a starting point for customizing new views of the interactive grid.

After you save at least one private report, a drop-down list appears on the toolbar near the Search bar. You can use this to select between reports.

> **See Also:**
>
> How the User Type Affects Available Save Options in *Oracle APEX App Builder User's Guide*

3.7.2 Saving a Report in an Interactive Grid

Save your changes to an interactive grid by clicking Save As in the Actions, Report submenu.

To save a Private interactive grid:

1. Click the **Actions** menu and select **Report** then **Save As**.

   The Save As dialog displays.

2. In the Save As dialog:

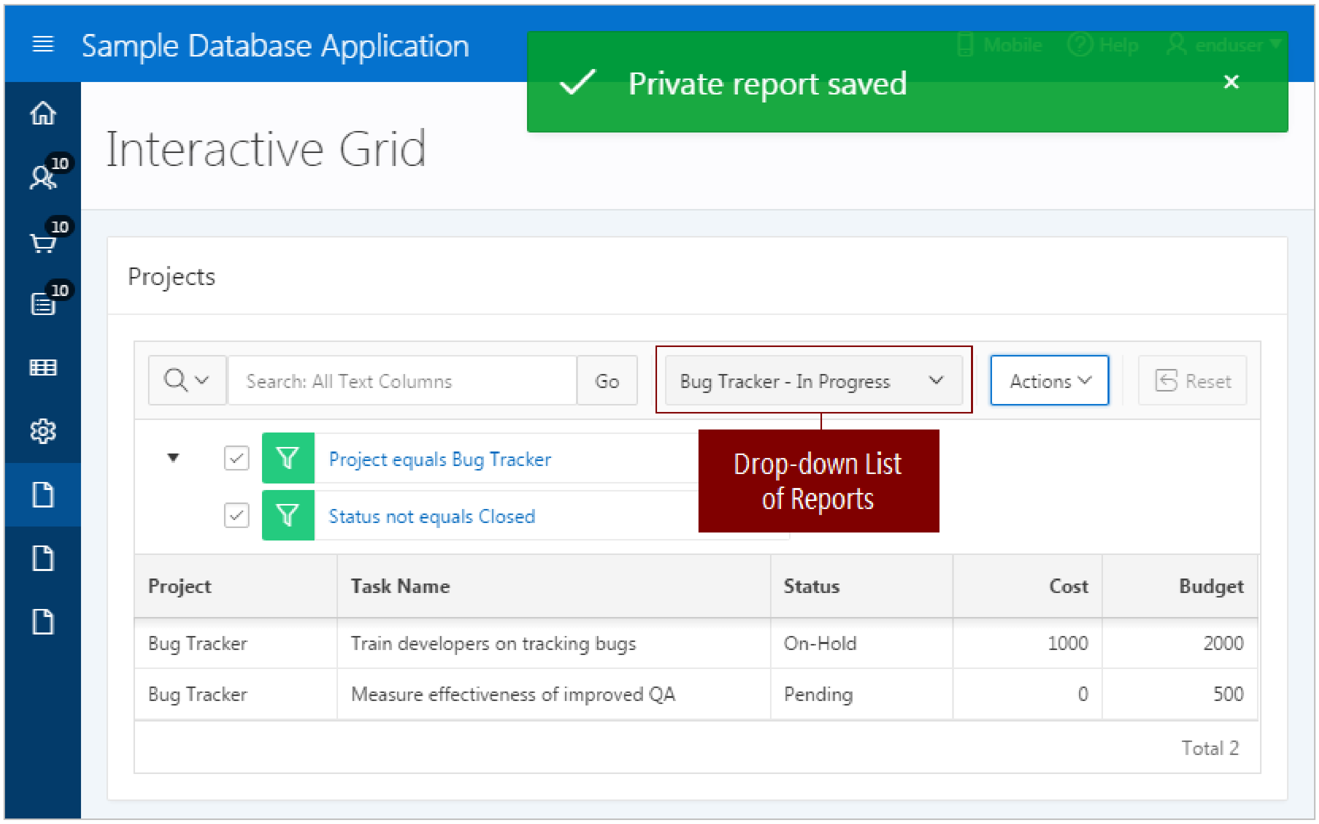
   a. Type - Select **Private**.

   b. Name - Enter a name for the grid.

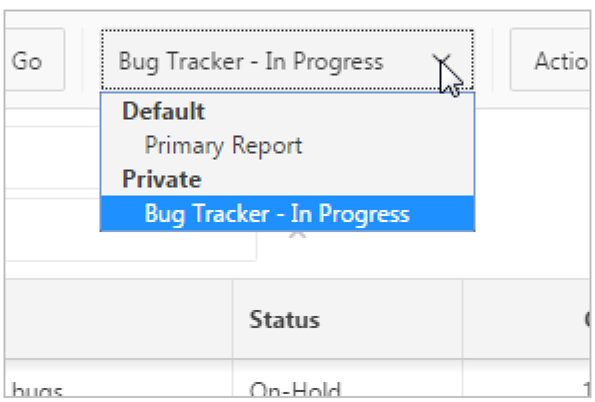
3. Click **Save**.

   Save further changes to the report by selecting **Save** in the Actions, Report Setting submenu.

The report is saved and a confirmation message displays.



If there is now more than one saved report available in the interactive grid, a drop-down list appears on the toolbar between the Search Bar and Actions menu.



3.7.3 Renaming a Report in an Interactive Grid

Change the name of an interactive grid report by selecting Edit in the Actions, Report submenu.

To rename a report:

1. Select the report from the drop-down list.
2. Click the **Actions** menu and select **Report** then **Edit**.

The Report Settings dialog displays.

3. Rename the report.
4. Click **Save**.

The report is saved.

3.7.4 Deleting a Report in an Interactive Grid

Delete a Private report from an interactive grid by selecting Delete in the Actions, Report submenu.

To delete an interactive grid report:

1. Select the report from the drop-down list.
2. Click the **Actions** menu and select **Report** then **Delete**.

   A confirmation dialog appears.
3. Click **OK**.

The report is deleted and the Primary report reloads.

3.8 Resetting Interactive Grids

You can refresh, reset, or flashback a grid to revert your changes to it. Resetting an interactive grid can have different outcomes depending on the report type.

Refresh an interactive grid to update it with the most recent version of the data in the database. Reset an interactive grid to undo any changes since it was last saved. Flashback a grid to a point in the past (in minutes) to retrieve data from the database as it existed at that time, which ignores any changes made to the data in the database since that time.

- Refreshing an Interactive Grid
  Update an interactive grid with the most current data available on the database by selecting Refresh in the Actions, Data submenu.
- Resetting an Interactive Grid
  Undo changes to an interactive grid by clicking the Reset button or by selecting Reset from the Actions, Report submenu.
- How the Reset Button Affects Saved Interactive Grid Reports
  Clicking the Reset button reloads an interactive grid's last saved state. The saved state varies between report types.
- Reverting an Interactive Grid to a Specific Save State
  Revert an interactive grid to a specific point in time by selecting the Flashback in the Actions, Data submenu.

3.8.1 Refreshing an Interactive Grid

Update an interactive grid with the most current data available on the database by selecting Refresh in the Actions, Data submenu.

Refreshing an interactive grid is quicker than reloading the entire page in the browser. Refreshing is also a valuable feature for highly fluid data sets.

To refresh an interactive grid:

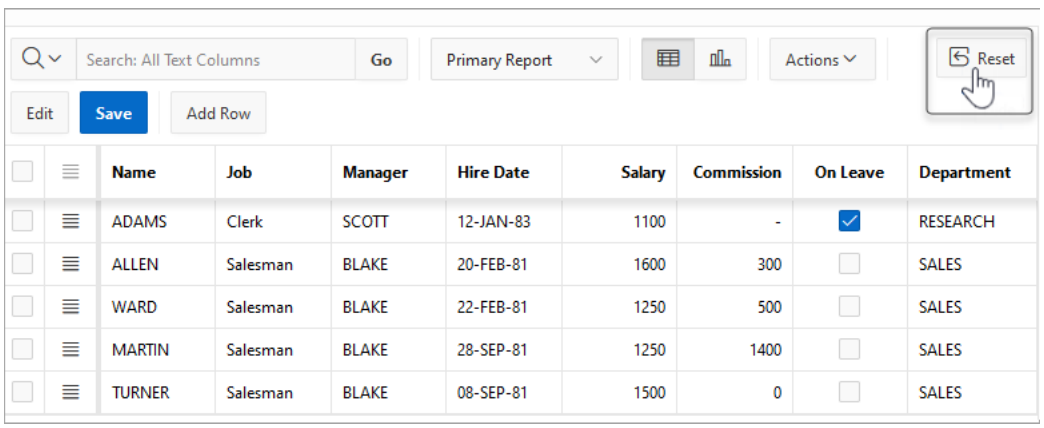
1. Click the **Actions** menu and select **Data**.
2. Select **Refresh**.

The grid refreshes. Updates to the data are applied, but not marked.

3.8.2 Resetting an Interactive Grid

Undo changes to an interactive grid by clicking the Reset button or by selecting Reset from the Actions, Report submenu.

> **WARNING:**
>
> Resetting an interactive grid reverts it to a previously saved state. Any changes since that time may be lost.



To reset an interactive grid, do one of the following:

- Click the **Reset** button.
- Click the **Actions** menu, select **Report**, and select **Reset**.

The grid reloads the last saved state.

3.8.3 How the Reset Button Affects Saved Interactive Grid Reports

Clicking the Reset button reloads an interactive grid's last saved state. The saved state varies between report types.

In a Primary report, the **Reset** button undoes all changes that you have made—including reorganization and new content—because only developers can overwrite Primary reports. To preserve your changes, save a Private report.

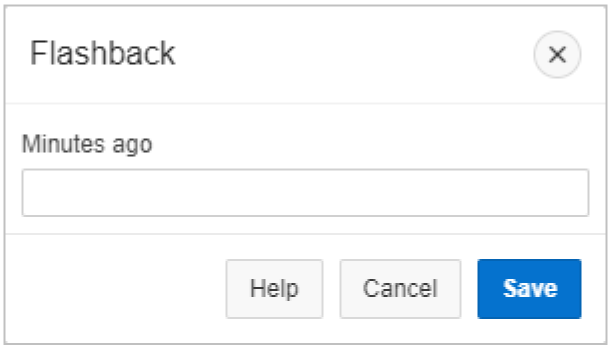
In a Private report, the **Reset** button undoes only the changes that you have made since the last time you saved the report.

> **See Also:**
>
> Saving Interactive Grids

3.8.4 Reverting an Interactive Grid to a Specific Save State

Revert an interactive grid to a specific point in time by selecting the Flashback in the Actions, Data submenu.

Flashback allows you to revert the interactive grid back a specific number of minutes.



To revert an interactive grid:

1. Click the **Actions** menu, select **Data**, and select **Flashback**.

   The Flashback dialog displays.

2. Enter the number of minutes you want to revert. For example, enter `10` to go back ten minutes.

3. Click **Save**.

The grid reverts to the state it was in ten minutes ago.

3.9 Downloading or Emailing an Interactive Grid

Download or email an interactive grid as a CSV, HTML, Excel, or PDF file by selecting Download in the Actions menu.

To download or email an interactive grid:

1. Click the **Actions** menu and select **Download**.

   The Download dialog displays.

2. Choose report download format - Select **CSV**, **HTML**, **PDF**, or **Excel**.

   Extra PDF options may appear if you use native PDF printing without an external print server.

3. For **PDF**, choose the Page Size, Page Orientation, and whether to include Accessibility Tags.

   Enabling **Include Accessibility Tags** enables the document to be read aloud by a screen reader and other text-to-speech tools (this increases the file size of the PDF).

4. **Data Only** - Enable **Data Only** to include only columns and rows, and ignore any active column groups, aggregates, highlights, and control breaks.

   The **Data Only** option only displays if the grid you are downloading has column groups, aggregates, highlights, or control breaks enabled.

5. (Optional) **Strip Rich Text** - Enable **Strip Rich Text** to remove Rich Text formatting from the file output.

   This option only appears for CSV and Excel downloads of interactive grids that have a Rich Text column.

6. Do one of the following:
   - To download the file, click **Download**.
   - To email the file as an attachment to an email:
     a. Enable **Send as Email**.
     b. Complete the fields for the recipients (To, Cc, Bcc, Subject, Message).
     c. Click **Send**.

> **See Also:**
>
> Configuring Interactive Grid Download Formats in *Oracle APEX App Builder User's Guide*

4

Using Interactive Reports

An interactive report is a formatted result of a SQL query.

- About Interactive Reports
  In addition to interactive grids, Oracle APEX includes two main report types: an interactive report and a classic report.
- Using the Search Bar
  A search bar displays above interactive reports and includes the following features.
- Using the Select Columns To Search Icon
  The Select columns to search icon displays to the left of the search bar. Click this icon to display a listing of all columns in the current report.
- Using the Column Heading Menu
  Clicking a column heading in an interactive report displays the Column Heading menu. Positioning the cursor over each icon displays a tooltip that describes its function.
- Using Interactive Report Filters
  When you customize an interactive report, a filter displays between the search bar and the report.
- Customizing an Interactive Report Using the Actions Menu
  Customize an interactive report by selecting options on the Actions menu.

> **See Also:**
>
> Managing Interactive Reports in *Oracle APEX App Builder User's Guide*

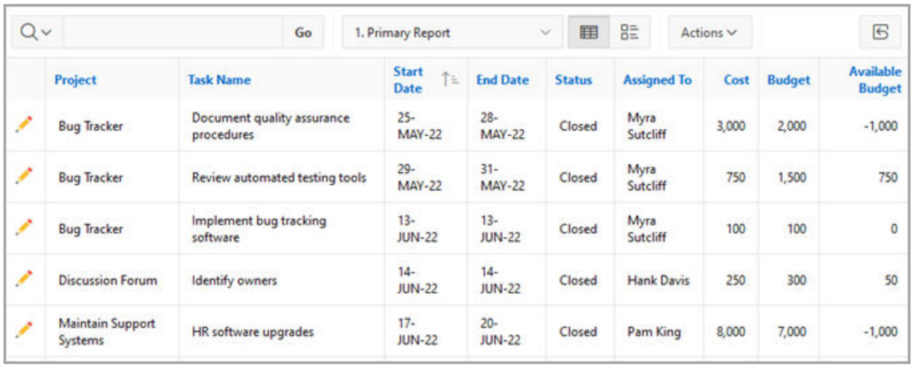
4.1 About Interactive Reports

In addition to interactive grids, Oracle APEX includes two main report types: an interactive report and a classic report.

The main difference between these two report types is that interactive reports enable you to customize the appearance of the data through searching, filtering, sorting, column selection, highlighting, and other data manipulations.

About Interactive Reports

The following is an example of an interactive report in the packaged application, Sample Reporting.



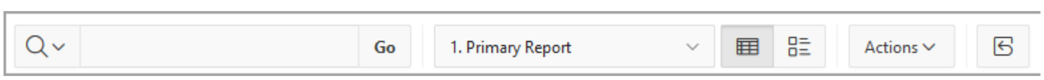
	Project	Task Name	Start Date	End Date	Status	Assigned To	Cost	Budget	Available Budget
	Bug Tracker	Document quality assurance procedures	25-MAY-22	28-MAY-22	Closed	Myra Sutcliff	3,000	2,000	-1,000
	Bug Tracker	Review automated testing tools	29-MAY-22	31-MAY-22	Closed	Myra Sutcliff	750	1,500	750
	Bug Tracker	Implement bug tracking software	13-JUN-22	13-JUN-22	Closed	Myra Sutcliff	100	100	0
	Discussion Forum	Identify owners	14-JUN-22	14-JUN-22	Closed	Hank Davis	250	300	50
	Maintain Support Systems	HR software upgrades	17-JUN-22	20-JUN-22	Closed	Pam King	8,000	7,000	-1,000

Interactive reports enable you to create highly customized reports. You can alter the report layout by hiding or exposing specific columns and applying filters, highlighting, and sorting. You can also define breaks, aggregations, charts, group data, and add their own computations. Once customized, the report can be saved as either a private or public report. Most interactive reports include a search bar, Actions menu, Column Heading menu, and edit icons in the first column of each row.

In contrast, classic reports support general keyword search capability, the ability to specify the number of rows that display, and basic column sorting.

4.2 Using the Search Bar

A search bar displays above interactive reports and includes the following features.



- Select columns to search icon - Resembles a magnifying glass. Click this icon to narrow your search to specific columns. To search all columns, select **All Columns**. See Using the Select Columns To Search Icon.
- Text area - Enter case insensitive search criteria (wildcard characters are implied) and then click **Go**.
- Go button - Executes a search.
- View Report - Displays alternate default and saved private or public reports. See Saving an Interactive Report.
- View icons - Switches between an icon, report and detail view of the default report (if enabled). May also include Chart and Group By View (if defined). Icons do not display by default, but must be configured by the developer.
- Actions menu - Use the Actions menu to customize an interactive report. See Customizing an Interactive Report Using the Actions Menu.

Tip:

Developers can customize what displays on the Search bar. To learn more, see *Oracle APEX App Builder User's Guide* in *Oracle APEX App Builder User's Guide*.

4.3 Using the Select Columns To Search Icon

The Select columns to search icon displays to the left of the search bar. Click this icon to display a listing of all columns in the current report.

To search specific columns:

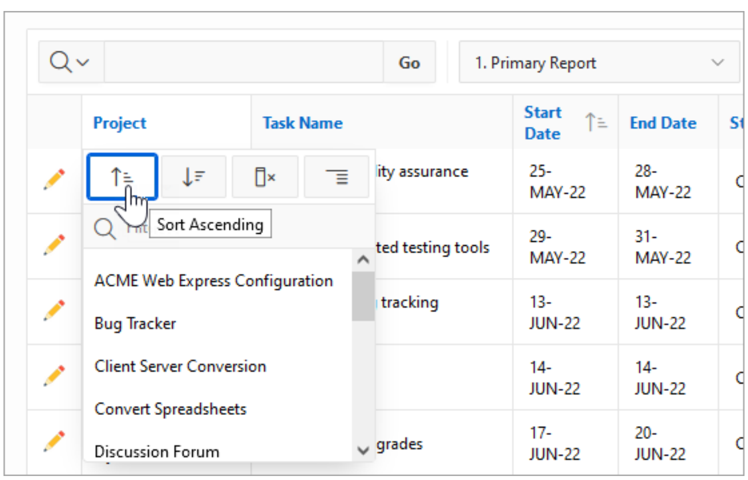
1. Click the **Select columns to search** icon and select a column.
2. Enter keywords in the Text area and click **Go**.
3. To disable the filter, select the **Enable/Disable Filter** check box.
4. To delete the filter, click the **Remove Filter** icon.

See Also:

Selecting Columns to Display

4.4 Using the Column Heading Menu

Clicking a column heading in an interactive report displays the Column Heading menu. Positioning the cursor over each icon displays a tooltip that describes its function.



Column Heading menu options include:

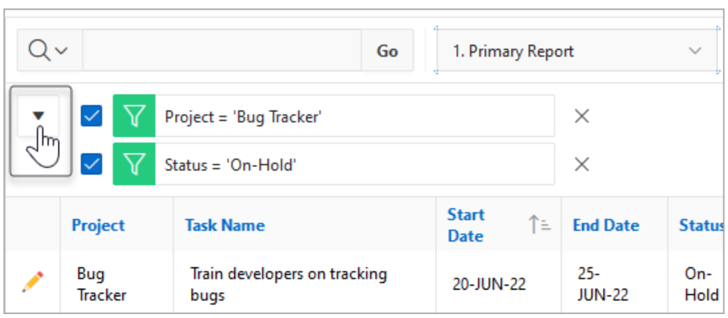
- Sort Ascending - Sorts the report by the column in ascending order.

- Sort Descending - Sorts the report by the column in descending order.
- Hide Column - Hides the column. Not all columns can be hidden. If a column cannot be hidden, the Hide Column icon does not display. To show a hidden column, select **Reset** from the Actions menu.
- Control Break - Creates a break group on the column. This pulls the column out of the report as a master record. See Creating a Control Break.
- Column Information - Displays help text about the column, if available.
- Filter - Enter a case insensitive search criteria. Entering a value reduces the list of values at the bottom of the menu. You can then select a value from the bottom. The selected value will be created as a filter using either the `equal` sign (=) or `contains` depending on the List of Values Column Filter Type.

4.5 Using Interactive Report Filters

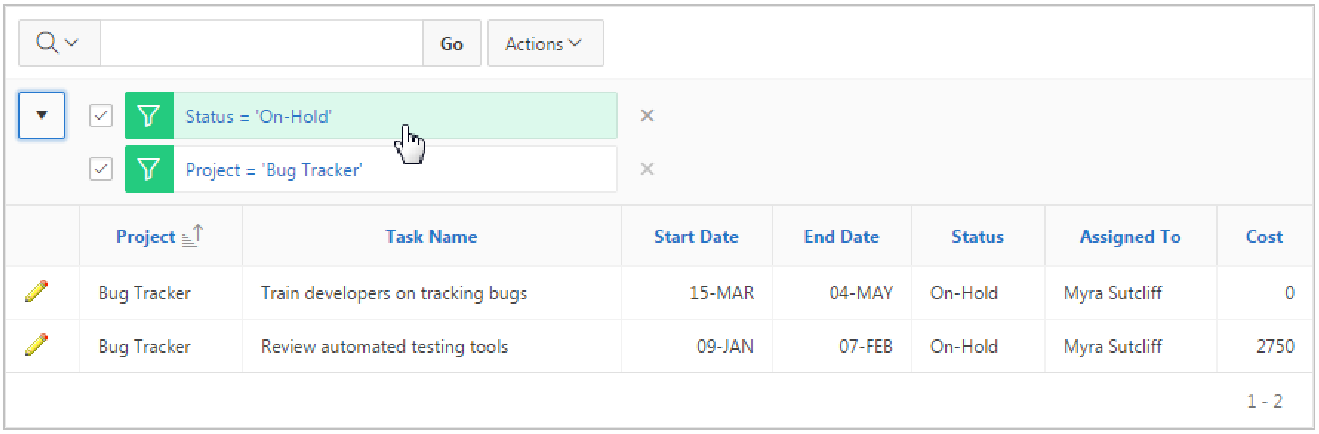
When you customize an interactive report, a filter displays between the search bar and the report.

The following illustration shows a report with two filters `Project = 'Bug Tracker'` and `Status = 'On-Hold'`. By default, filters display in the Report Settings area above the report. You can show or hide the filter details by clicking the arrow to the left of the filter name.



When you expand a filter and view the details, you can edit it as follows:

- **Enable/Disable** - To enable and disable a filter, select and deselect the check box to the left of the filter name.
- **Filter Edit** - To edit a filter, click the filter name.
- **Remove Filter** - To remove a filter, select the Remove Filter icon to the right of the filter name.



4.6 Customizing an Interactive Report Using the Actions Menu

Customize an interactive report by selecting options on the Actions menu.

> **Tip:**
>
> Not all options described in this section are available on every Actions menu. Developers can customize what options appear. To learn more, see Customizing the Interactive Report Search Bar in *Oracle APEX App Builder User's Guide*.

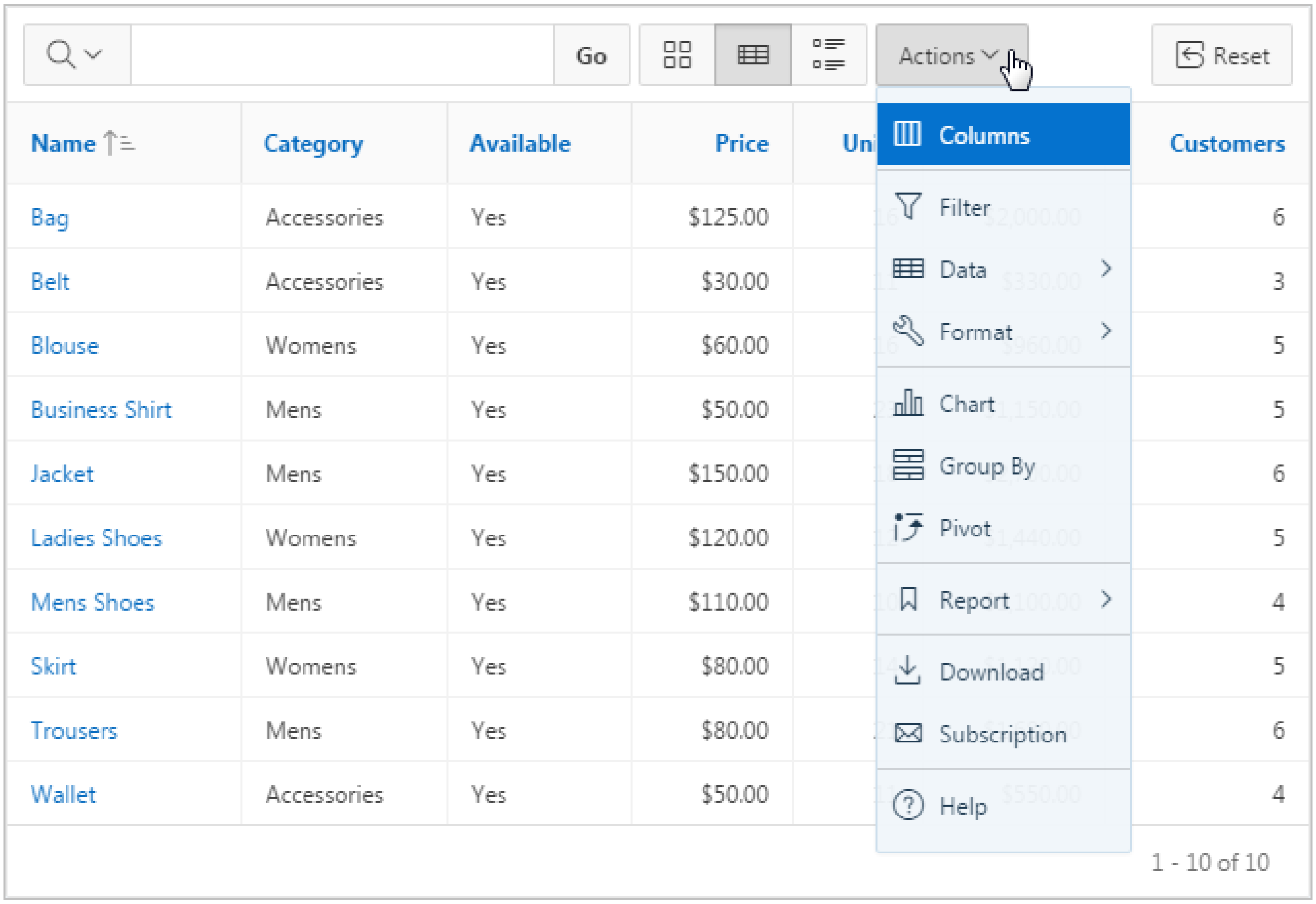
- About the Actions Menu
  The Actions menu appears to the right of the Go button on the Search bar. Use this menu to customize an interactive report.
- Selecting Columns to Display
  Customize a report to include specific columns.
- Adding a Filter
  Create row and column filters on an interactive report.
- Selecting Column Sort Order
  You can specify column display sort order (ascending or descending) by selecting Sort on the Data submenu.
- Creating a Control Break
  You can create a break group of one or several columns by selecting Actions, Format, and Control Break.
- Adding Highlighting
  Customize the display to highlight specific rows in a report by selecting Highlight on the Actions, Format submenu.
- Computing Columns
  Add mathematical computations (for example, `NBR_HOURS/24`) or standard Oracle functions to columns.
- Defining an Aggregation Against a Column
  Define an aggregation against a column with the Actions, Data submenu. Aggregates are displayed after each control break and at the end of the report within the column for which they are defined.

- Creating a Chart from the Actions Menu
  Create charts in an interactive report with the Actions menu. You can create one chart for each interactive report. Once defined, you can switch between the chart and report views using buttons on the Search bar.
- Grouping Columns
  Group sets of results by one or more columns with Group By, then perform mathematical computations against the columns. Once you define the Group By, switch between the Group By and Report views using the View Icon on the Search bar.
- Managing Pivot Reports
  Pivot reports transpose rows into columns to generate results in a crosstab format.
- Executing a Flashback Query
  View the data as it existed at a previous point in time by running a flashback query on the Actions, Data submenu.
- Saving an Interactive Report
  Save a private or public interactive report. Only the user who creates a private report can view, save, rename, or delete that private report.
- Resetting a Report
  Reset a report back to the default settings by selecting Reset from the Actions, Report submenu. Resetting a report removes any customizations you have made.
- Downloading a Report
  Download or email an interactive report as a CSV, HTML, Excel, or PDF file by selecting Download in the Actions menu.
- Subscribing to Report Updates by Email
  Subscribe to an interactive report to receive emails when the report is updated.

4.6.1 About the Actions Menu

The Actions menu appears to the right of the Go button on the Search bar. Use this menu to customize an interactive report.

Actions Menu



The Actions menu contains the following options:

Columns
Specifies which columns to display and in what order. See Selecting Columns to Display.

Filter
Focuses the report by adding or modifying the filter clause on the query. See Adding a Filter.

Data
Contains the Data submenu (see below).

Format
Contains the Format submenu (see below).

Chart
Displays the report data as a chart. See Creating a Chart from the Actions Menu.

Group By
Enables users to group the result set by one or more columns and perform mathematical computations against columns. See Grouping Columns.

Pivot
Enables users to define a Pivot report. See Managing Pivot Reports.

Report
Contains the Report submenu.
Manage your private and public reports of the interactive grid.
Saves the interactive report. Depending upon their user credentials, users can save different types of reports. See Saving an Interactive Report.
Revert the grid to its last saved state with the **Reset** function.

Reset
Resets the report back to the default report settings. See Resetting a Report.

Download
Downloads a report. Available download formats depend upon your installation and report definition. See Downloading a Report.

Subscription
Send an interactive report by email. See Subscribing to Report Updates by Email.

Help
Provides descriptions of how to customize interactive reports.

Data Submenu

The Actions Menu also contains the Data submenu. The Data submenu contains the following options:

Sort
Changes the columns to sort on and determines whether to sort in ascending or descending order. See Selecting Column Sort Order.

Aggregate
Enables users to perform mathematical computations against a column. See Defining an Aggregation Against a Column.

Compute
Enables users to add computed columns to a report. See Computing Columns.

Flashback
Enables users to view the data as it existed at a previous point in time. See Executing a Flashback Query.

Format Submenu

The Actions Menu also contains the Format submenu. The Format submenu contains the following options:

Control Break
Creates a break group on one or several columns. This pulls the columns out of the interactive report and displays them as a master record. See Creating a Control Break.

Highlight
Defines a filter that highlights the rows that meet the filter criteria. See Adding Highlighting.

Rows Per Page
Select the number of rows that display per page.

4.6.2 Selecting Columns to Display

Customize a report to include specific columns.

To use the Select Columns option:

1. Click the **Actions** menu and select **Columns**.

   The Select Columns dialog appears.

2. Select the columns you want to move. Click the center arrows to move a column from Display in Report to Do Not Display. To select multiple columns at once, press and hold the **CTRL** key.
3. To change the order of the columns, click the **Top**, **Up**, **Down**, and **Bottom** arrows on the right.
4. Click **Apply**.

   A revised report appears.

> **See Also:**
>
> Resetting a Report

4.6.3 Adding a Filter

Create row and column filters on an interactive report.

- About Creating Filters
  You can create a filter on an interactive report by using the Actions menu to create or modify a column filter or row filter.
- Adding, Editing, and Removing a Column Filter
  Use the Actions menu to add, edit, or remove a column filter in an interactive report.
- Adding, Editing, and Removing a Row Filter
  Use the Actions menu to add, edit, or remove a row filter in an interactive report.

4.6.3.1 About Creating Filters

You can create a filter on an interactive report by using the Actions menu to create or modify a column filter or row filter.

You can create two types of filters on an interactive report to search or narrow down the report data:

1. **Column** - Creates a simple filter based on a column.
2. **Row** - Creates a complex filter that allows multiple filter conditions, including column alias names and any Oracle functions, operators, or expressions.

- For example, a Row filter could contain an `OR` operator, or an `AND` operator.

4.6.3.2 Adding, Editing, and Removing a Column Filter

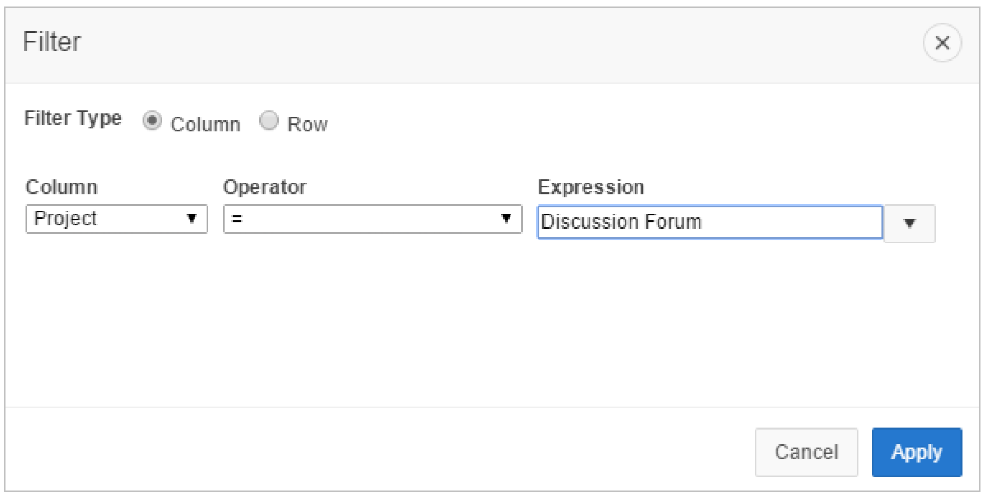
Use the Actions menu to add, edit, or remove a column filter in an interactive report.

To add a column filter:

1. Click the **Actions** menu and select **Filter**.

   The Filter dialog appears.

2. For Filter Type, select **Column**.
3. In the Filter region, specify a column, an operator, and an expression and click **Apply**.

   Notice the filter that displays in the Report Settings area above the report. You can show or hide the filter details by clicking the arrow to the left of the filter name.

To revise the filter:

4. Click the filter name (in this example, `Project = 'Discussion Forum'`).
5. Edit your selections and click **Apply**.
6. To disable the filter, select the **Enable/Disable Filter** check box.
7. To delete the filter, click **Remove Filter**.

4.6.3.3 Adding, Editing, and Removing a Row Filter

Use the Actions menu to add, edit, or remove a row filter in an interactive report.

To add a row filter:

1. Click the **Actions** menu and select **Filter**.

   The Filter dialog appears.

2. For Filter Type, select **Row**.
3. In the Filter dialog:

a. Name - Enter a name that describes this filter.
b. Filter Expression - Enter an expression. Select a column and function or operator at the bottom of the region. For example, `I >=2500` displays projects costing more than $2,500.
c. Click **Apply**.

   Notice the filter that displays in the Report Settings area above the report. You can show or hide the filter details by clicking the arrow to the left of the filter name.

4. To revise the filter:
   a. Click the filter name.
   b. Edit your selections and click **Apply**.
5. To disable the filter, select the **Enable/Disable Filter** check box.
6. To delete the filter, click **Remove Filter**.

4.6.4 Selecting Column Sort Order

You can specify column display sort order (ascending or descending) by selecting Sort on the Data submenu.

You can also specify how to handle `NULL` values. Using the default setting always displays `NULL` values last or always displays them first.

To sort by column:

1. Click the **Actions** menu and select **Data** and then **Sort**.

   The Sort dialog appears.
2. Select a column, the sort direction (**Ascending** or **Descending**), and Null Sorting behavior (**Default**, **Nulls Always Last**, or **Nulls Always First**).
3. Click **Apply**.

4.6.5 Creating a Control Break

You can create a break group of one or several columns by selecting Actions, Format, and Control Break.

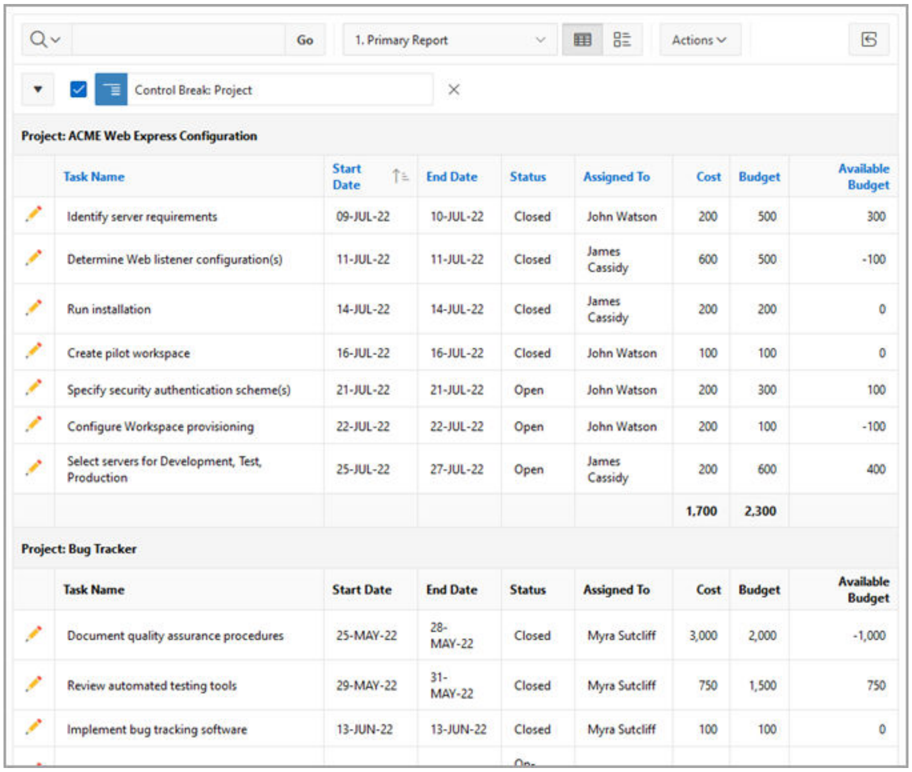
Creating a break group pulls the columns out of the interactive report and displays them as a master record.

To create a break group:

1. Click the **Actions** menu and select **Format** and then **Control Break**.

   The Control Break dialog appears.
2. Select a column and then a status (**Enable** or **Disable**).
3. Click **Apply**.

   A revised report displays.



Note the defined filter displays in the Report Settings area above the report.

4. Click the left arrow to expand the filter.
5. To disable the Control Break filter, deselect the **Enable/Disable Filter** check box. To activate a disabled filter, select the **Enable/Disable Filter** check box again.
6. To delete the filter, click **Remove Control Break**.

4.6.6 Adding Highlighting

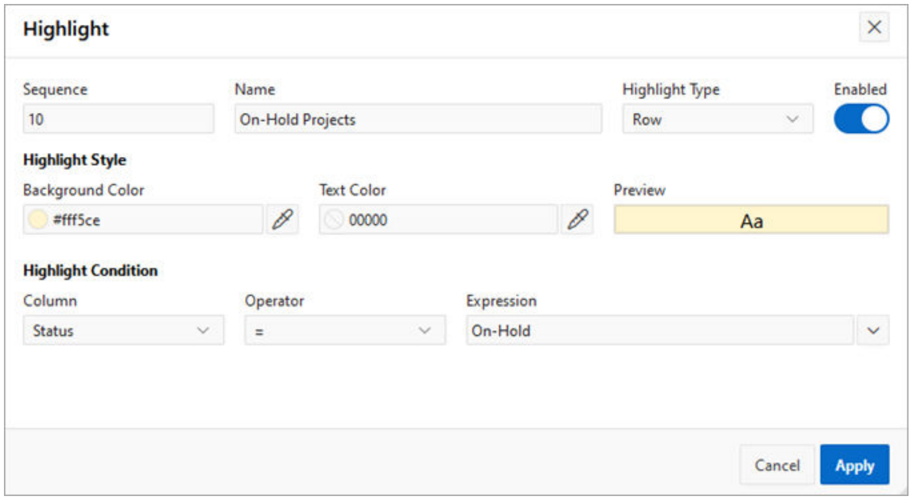
Customize the display to highlight specific rows in a report by selecting Highlight on the Actions, Format submenu.

To add highlighting:

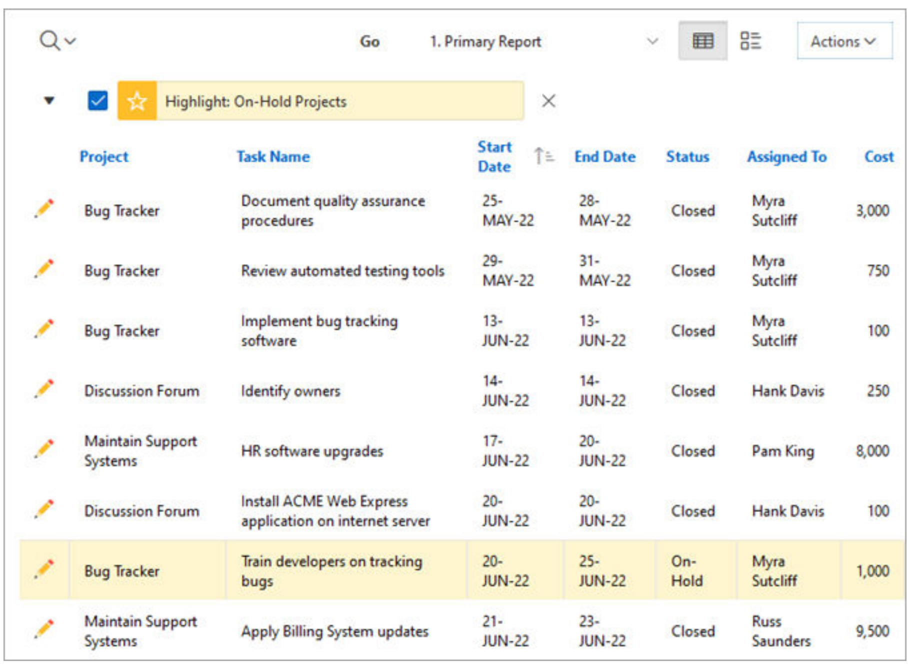
1. Click the **Actions** menu and select **Format** and then **Highlight**.

   The Highlight dialog appears.
2. Edit the following information:
   a. Sequence - Enter a numeric value to identify the sequence in which highlighting rules are evaluated.
   b. Name - Enter a name that describes this filter.
   c. Highlight Type - Select **Cell** or **Row**.
   d. Enabled - Select **Yes**.
   e. Background Color - Select a new color for the background of the highlighted area.
   f. Text Color - Select a new color for the text in the highlighted area.

g. Highlight Condition - Select a column, an operator, and an expression.



h. Click **Apply**.



Tip:

Note the highlight `On-Hold Projects` displays in the Report Settings area above the report. You can show or hide the filter details by clicking the arrow to the left of the filter name.

3. To revise the highlight, click the highlight name and make the following edits:

   a. Background Color - Select **Black**.

   b. Text Color - Select **White**.
   c. Click **Apply**.
4. To disable the highlight, select the **Enable/Disable** check box.
5. To delete the highlight, click **Remove Highlight**.

4.6.7 Computing Columns

Add mathematical computations (for example, `NBR_HOURS/24`) or standard Oracle functions to columns.

- Creating a Computation
  Use the Compute function in the Actions, Data submenu to add a computation to a column.
- Deleting a Computation
  Open the Compute dialog to remove a computation.

4.6.7.1 Creating a Computation

Use the Compute function in the Actions, Data submenu to add a computation to a column.

To create a computation:

1. Click the **Actions** menu and select **Data** and then **Compute**.

   The Compute dialog appears.
2. In the Compute dialog:
   a. Computation - Select **New Computation**.
   b. Column Label - Enter the name of the new column to be created. For example, `Available Budget`.
   c. Format Mask - Select an Oracle format mask to be applied to the new column. For example, `$5,234.10`.
3. Create the computation:
   a. Column Aliases - Select a column to add the column alias in the computation expression.
   b. Keypad - Select a shortcut for commonly used keys.
   c. Functions - Select the appropriate function.

   In the following example, a new column compares the actual cost to the budgeted amount, using the formula `I - H`, where `I` is the budgeted amount and `H` is the cost.
4. Click **Apply**.

	Project	Task Name	Start Date	End Date	Status	Assigned To	Cost	Budget	Available Budget
	Bug Tracker	Document quality assurance procedures	25-MAY-22	28-MAY-22	Closed	Myra Sutcliff	3,000	2,000	-1,000
	Bug Tracker	Review automated testing tools	29-MAY-22	31-MAY-22	Closed	Myra Sutcliff	750	1,500	750
	Bug Tracker	Implement bug tracking software	13-JUN-22	13-JUN-22	Closed	Myra Sutcliff	100	100	0
	Discussion Forum	Identify owners	14-JUN-22	14-JUN-22	Closed	Hank Davis	250	300	50

The revised report appears with the new Available Budget column.

4.6.7.2 Deleting a Computation

Open the Compute dialog to remove a computation.

To delete a computation:

1. Click the **Actions** menu and select **Data** and then **Compute**.

   The Compute dialog appears.

2. From Computation, select the computation.

   The computation appears.

3. Click **Delete**.

4.6.8 Defining an Aggregation Against a Column

Define an aggregation against a column with the Actions, Data submenu. Aggregates are displayed after each control break and at the end of the report within the column for which they are defined.

- Creating an Aggregation Against a Column
  Create an aggregation by selecting Aggregate in the Actions, Data submenu.
- Removing a Column Aggregation
  Open the Aggregate dialog to remove an aggregation.

4.6.8.1 Creating an Aggregation Against a Column

Create an aggregation by selecting Aggregate in the Actions, Data submenu.

To create an aggregation against a column:

1. Click the **Actions** menu and select **Data** and then **Aggregate**.

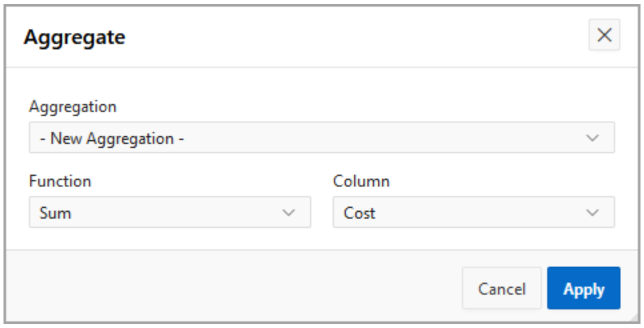
   The Aggregate dialog appears.

2. In the Aggregate dialog:

   a. Aggregation - Select **New Aggregation**.

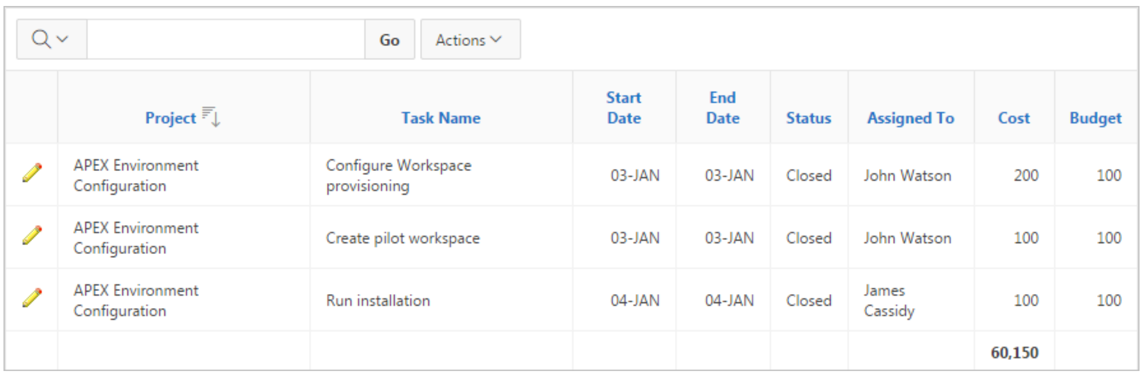
   b. Function - Select one of the following: **Sum**; **Average**, **Count**, **Count Distinct**, **Minimum**, **Maximum**, or **Median**.

   c. Column - Select a column.



This example creates a sum of the Cost column.

d. Click **Apply**.



	Project	Task Name	Start Date	End Date	Status	Assigned To	Cost	Budget
	APEX Environment Configuration	Configure Workspace provisioning	03-JAN	03-JAN	Closed	John Watson	200	100
	APEX Environment Configuration	Create pilot workspace	03-JAN	03-JAN	Closed	John Watson	100	100
	APEX Environment Configuration	Run installation	04-JAN	04-JAN	Closed	James Cassidy	100	100
							60,150	

The computation appears at the bottom of the last page of the report. In this example, the aggregate shows the sum of all amounts in the Cost column.

4.6.8.2 Removing a Column Aggregation

Open the Aggregate dialog to remove an aggregation.

To remove column aggregation:

1. Click the **Actions** menu and select **Data** and then **Aggregate**.

   The Aggregate dialog appears.

2. From Aggregation, select a previously defined aggregation.
3. Click **Delete**.

4.6.9 Creating a Chart from the Actions Menu

Create charts in an interactive report with the Actions menu. You can create one chart for each interactive report. Once defined, you can switch between the chart and report views using buttons on the Search bar.

- Creating a Chart
  Use the Chart function in the Actions menu to create a chart in an interactive report.

- Editing a Chart
  Open the Chart dialog to edit a chart in an interactive report.
- Deleting a Chart
  Open the Chart dialog to remove a chart in an interactive report.

4.6.9.1 Creating a Chart

Use the Chart function in the Actions menu to create a chart in an interactive report.

To create a chart:

1. Click the **Actions** menu and select **Chart**.

   The Chart dialog appears.

2. In the Chart dialog, specify the appropriate options.

   a. Chart Type - Select the type of chart you want to create. The options are Bar, Line with Area, Pie, and Line.

   b. Label - Select the column to be used as the label.

   c. Axis Title for Label - Enter the title to display on the axis associated with the column selected for Label (not available for pie chart)

   d. Value - Select the column to be used as the Value. If your function is a `COUNT`, a Value does not need to be selected.

   e. Axis Title for Value - Enter the title to display on the axis associated with the column selected for Value (not available for pie chart).

   f. Function - (Optional) Select a function to be performed on the column selected for Value.

   g. Orientation - Select whether chart elements extend up and down or sideways. (Not applicable for pie charts.)

   h. Sort - Select a sorting method.

3. Click **Apply**.

The chart appears.

> **Tip:**
>
> The Search bar now contains two icons: **View Report** and **View Chart**. Click these icons to toggle between chart and report views.

4.6.9.2 Editing a Chart

Open the Chart dialog to edit a chart in an interactive report.

To edit a chart:

1. While viewing a report:

   a. Click the **Actions** menu and select **Chart**.

      The Chart dialog appears.

   b. Edit your selections and click **Apply**.

2. While viewing a chart:
   a. Click **Edit Chart**.
   b. Edit your selections and click **Apply**.

4.6.9.3 Deleting a Chart

Open the Chart dialog to remove a chart in an interactive report.

To delete a chart:

1. While viewing a report:
   a. Click the **Actions** menu and select **Chart**.

      The Chart dialog appears.
   b. Click **Delete**.
2. While viewing a chart:
   a. Click **Edit Chart**.
   b. Click **Delete**.

> **Tip:**
>
> You can also click the **Remove Chart** icon to the right of the Edit Chart filter.

4.6.10 Grouping Columns

Group sets of results by one or more columns with Group By, then perform mathematical computations against the columns. Once you define the Group By, switch between the Group By and Report views using the View Icon on the Search bar.

- Creating a Group By
  Use the Group By function in the Actions menu to reorganize an interactive grid.
- Editing a Group By
  Edit the properties of a grouping in the Group By dialog.
- Selecting a Group By Sort Order
  Specify Group By column sort order (ascending or descending) by either clicking on the group by column heading or selecting Group By Sort on the Data submenu.
- Deleting a Group By
  Delete a grouping in the Group By dialog.

4.6.10.1 Creating a Group By

Use the Group By function in the Actions menu to reorganize an interactive grid.

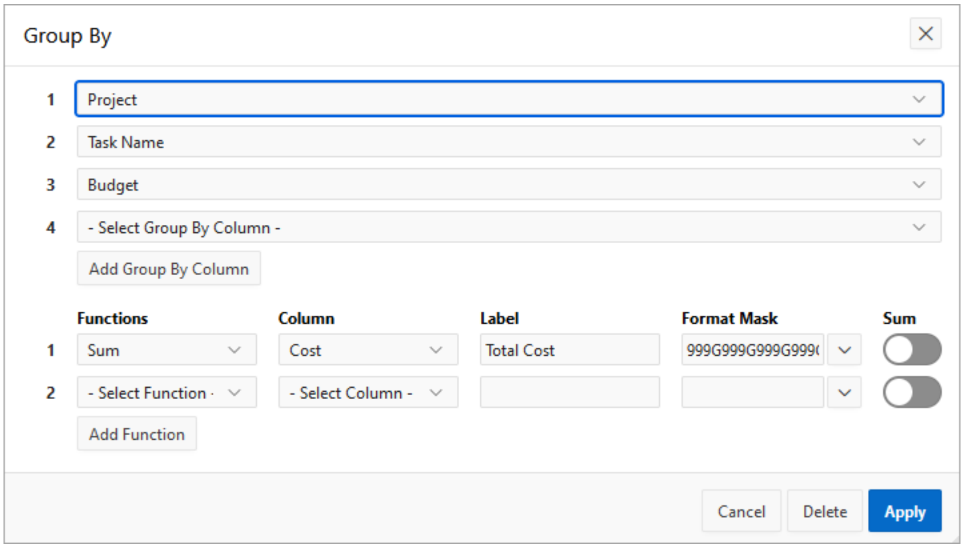
To use Group By:

1. Click the **Actions** menu and select **Group By**.

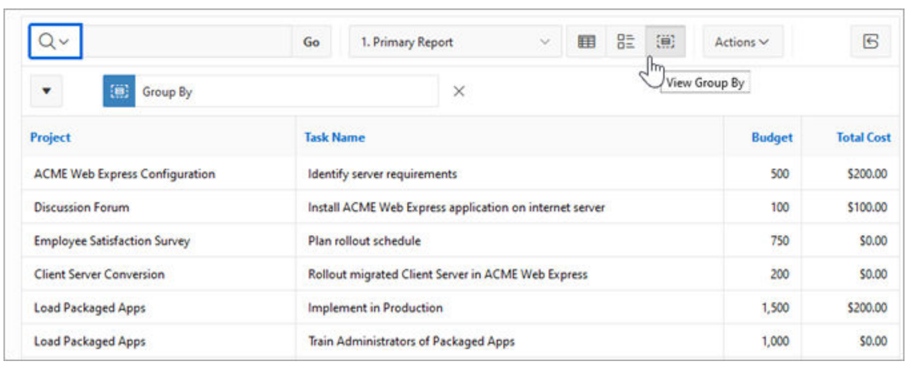
   The Group By dialog appears.
2. In the Group By dialog:

a. Select a column to display. To add additional columns, click **Add Group By Column**.

b. Select the function, column, label, and format mask. To create a sum, click the **Sum** toggle. To add another function, click **Add Function**.



c. Click **Apply**.



A Group By icon appears to the left of the Actions menu. The resulting report displays the Project, Task Name, and Budget columns. Additionally, a new column, Total Cost, displays on the right side.

4.6.10.2 Editing a Group By

Edit the properties of a grouping in the Group By dialog.

To edit a Group By:

1. Click **Edit Group By**.

   The Group By dialog appears.

2. Edit the attributes.

3. To remove a previously defined Group by Column, select the default setting **Select Group By Column**.

4. Click **Apply**.

4.6.10.3 Selecting a Group By Sort Order

Specify Group By column sort order (ascending or descending) by either clicking on the group by column heading or selecting Group By Sort on the Data submenu.

You can also specify how to handle NULL values. Using the default setting always displays NULL values last or always displays them first.

To sort a group by column:

1. Access a Group By view.
2. Click the **Actions** menu, select **Data**, and select **Group By Sort**.

   > **Tip:**
   >
   > The Group By Sort menu is only visible when you are viewing Group By view.

   The Group By Sort dialog appears.
3. Select a column, the sort direction (Ascending or Descending), and Null Sorting behavior (Default, Nulls Always Last, or Nulls Always First).
4. Click **Apply**.

> **See Also:**
>
> Creating a Group By

4.6.10.4 Deleting a Group By

Delete a grouping in the Group By dialog.

To delete a Group By:

1. Click **Edit Group By**.

   The Group By dialog appears.
2. Click **Delete**.

> **Tip:**
>
> You can also click the Remove Group By icon to the right of the Edit Group By filter.

4.6.11 Managing Pivot Reports

Pivot reports transpose rows into columns to generate results in a crosstab format.

Select pivot columns and rows and then provide the functions to be represented in the pivot report. Once created, pivot reports display a new icon in the search bar.

- Creating a Pivot Report
  Create a pivot report by opening the Pivot dialog from the Actions menu.
- Editing a Pivot Report
  Edit a pivot report by clicking the Edit Pivot filter in an interactive report and opening the Pivot dialog.
- Deleting a Pivot Report
  Remove a pivot report from an interactive report in the Pivot dialog.

4.6.11.1 Creating a Pivot Report

Create a pivot report by opening the Pivot dialog from the Actions menu.

To create a pivot report:

1. Click the **Actions** menu and select **Pivot**.

   The Pivot dialog appears.

2. In the Pivot dialog:

   a. Pivot Columns - Select the columns to display (for example, **Status**). To add additional columns, click **Add Pivot Column**.

   b. Row Columns - Select the rows to display (for example, **Project**). To add additional columns, click **Add Row Column**.

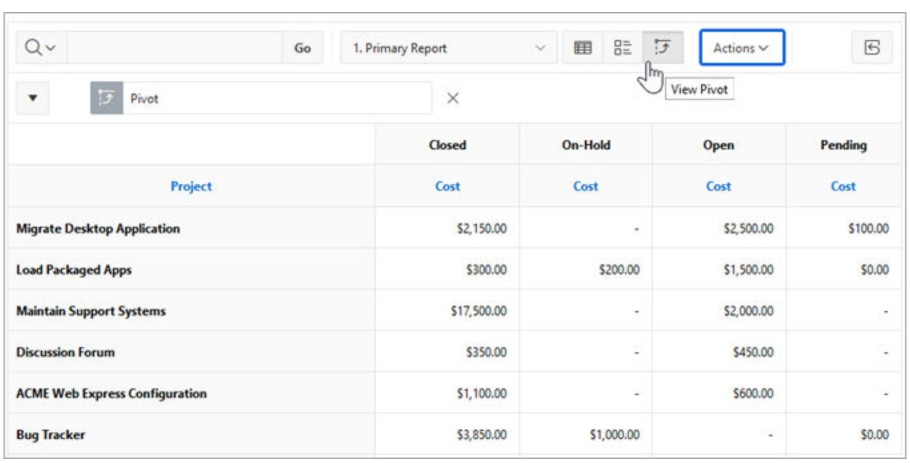
   c. Functions:

      - Select a function, column, label, and format mask.
      - To create a sum, click the **Sum** check box (optional).

   d. Click **Apply**.

The Search Bar now contains at least two icons, including **View Report** and **View Pivot**. Click these icons to toggle between the report view and the pivot view.

The following example shows a Pivot report that displays the number of closed, on-hold, open, and pending tasks associated with each project.



4.6.11.2 Editing a Pivot Report

Edit a pivot report by clicking the Edit Pivot filter in an interactive report and opening the Pivot dialog.

To edit a pivot report:

1. Click the **Edit Pivot** filter.

   The Pivot dialog appears.

2. Edit the attributes.
3. To remove a previously defined column or row, select the default setting, **Select Pivot Column** and **Select Row Column**.
4. Click **Apply**.

4.6.11.3 Deleting a Pivot Report

Remove a pivot report from an interactive report in the Pivot dialog.

To delete a pivot report:

1. Click the **Edit Pivot** filter.

   The Pivot dialog appears.

2. Click **Delete**.

> **Tip:**
>
> You can also click the **Remove Pivot** icon to the right of the Edit Pivot filter.

4.6.12 Executing a Flashback Query

View the data as it existed at a previous point in time by running a flashback query on the Actions, Data submenu.

The default amount of time that you can flashback is 3 hours (or 180 minutes) but the actual amount is different for each database.

- Creating a Flashback Query
  Create a flashback query by using the Actions, Data submenu.
- Editing a Flashback Query
  Edit a flashback query by clicking the flashback query filter in an interactive report.
- Deleting a Flashback Query
  Delete a flashback query by using the flashback query filter dialog in an interactive report.

4.6.12.1 Creating a Flashback Query

Create a flashback query by using the Actions, Data submenu.

To run a flashback query:

1. Click the **Actions** menu and select **Data** then **Flashback**.
2. In the Flashback field, enter the number of minutes.
3. Click **Apply**.

4.6.12.2 Editing a Flashback Query

Edit a flashback query by clicking the flashback query filter in an interactive report.

To edit a flashback query:

1. Click **flashback query** filter.

   The Flashback dialog appears.
2. Edit minute ago attribute.
3. Click **Apply**.

4.6.12.3 Deleting a Flashback Query

Delete a flashback query by using the flashback query filter dialog in an interactive report.

To delete a flashback query:

1. Click the **flashback query** filter.

   The Flashback dialog appears.
2. Click **Delete**.

> **Tip:**
>
> You can also click the Remove Flashback icon to the right of the **flashback query** filter.

4.6.13 Saving an Interactive Report

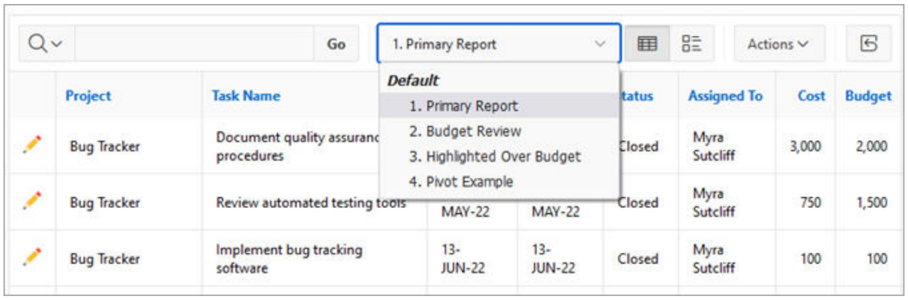
Save a private or public interactive report. Only the user who creates a private report can view, save, rename, or delete that private report.

- About the Report List
  You can view different versions of an interactive report by selecting from a drop-down list of default or primary reports and private reports.
- About Configuration Dependencies
  The ability to save an interactive report is configurable by the application developer who creates the interactive report.
- Saving a Public or Private Interactive Report
  End users can save an interactive report and classify it as Public or Private.
- Renaming a Public or Private Interactive Report
  Rename a public or private report that you have created by clicking its report name.
- Deleting a Public or Private Interactive Report
  Remove a public or private report that you have created by clicking its Remove Report icon.

4.6.13.1 About the Report List

You can view different versions of an interactive report by selecting from a drop-down list of default or primary reports and private reports.

The following illustration shows the Reports list on the Search bar of an interactive report.



This example shows two reports:

Default - Primary Report
This is the initial report created by the application developer. Default, Primary reports cannot be renamed or deleted.

Private - 1. Open Projects
This is a Private report. Only the user who creates a private report can view, save, rename, or delete it.

4.6.13.2 About Configuration Dependencies

The ability to save an interactive report is configurable by the application developer who creates the interactive report.

> **See Also:**
>
> - Customizing the Interactive Report Search Bar in *Oracle APEX App Builder User's Guide*
> - Saving Interactive Reports in *Oracle APEX App Builder User's Guide*

4.6.13.3 Saving a Public or Private Interactive Report

End users can save an interactive report and classify it as Public or Private.

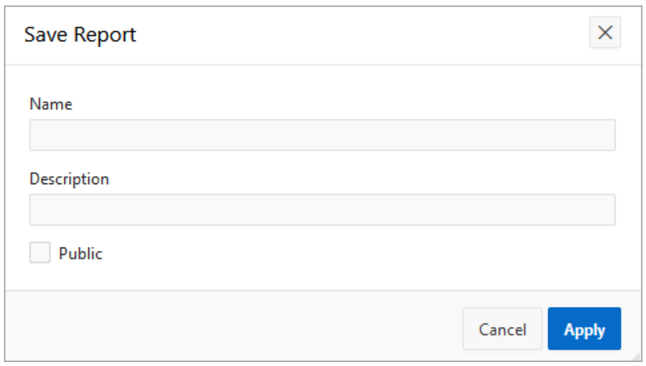
Public
The report can be saved, renamed, or deleted by the end user who created it. Other users can view and save the layout as another report.

Private
Only the user that created the report can view, save, rename, or delete the report.

To save a public or private interactive report:

1. Go to the page containing the interactive report you want to save.
2. Customize the report (for example, hide columns, add filters, and so on).
3. Click the **Actions** menu and select **Report** then **Save Report**.

   The Save Report dialog appears.



4. In Save Report:
   a. Select either **As Named Report** or **As Default Report Settings** option.

      > **Tip:**
      >
      > This option is only available for developers.

   b. **Name** - Enter a name for the report.
   c. **Description** - Enter an optional description.
   d. **Public** - Select this check box to make the report viewable to all users. Deselect this check box to make the report private.

      > **Tip:**
      >
      > Your application developer determines whether you have the ability to save an interactive report as a Public report.

   e. Click **Apply**.

> **See Also:**
>
> - Customizing an Interactive Report Using the Actions Menu
> - About Configuration Dependencies

4.6.13.4 Renaming a Public or Private Interactive Report

Rename a public or private report that you have created by clicking its report name.

To rename a public or private interactive report:

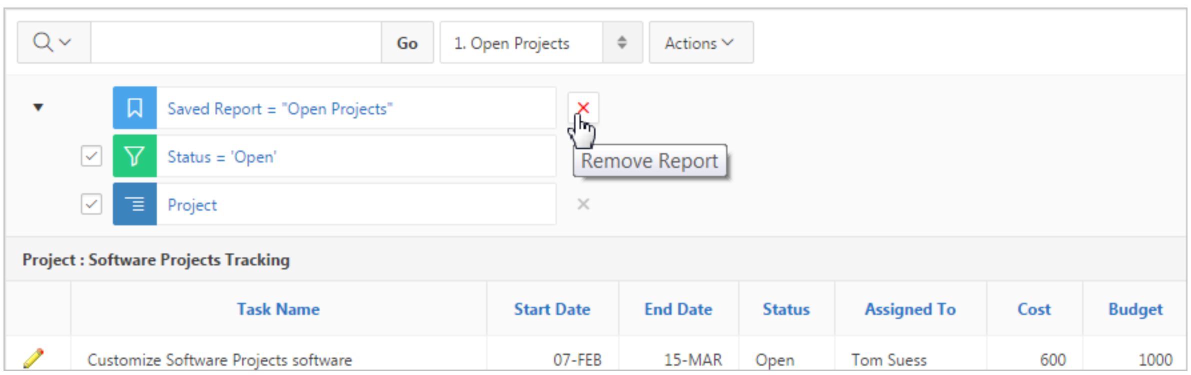
1. Select a public or private interactive report to rename.
2. Click the Saved Report filter which displays between between the search bar and the report.
3. In the Rename Report dialog, edit the attributes (for example, enter a new name).
4. Click **Apply**.

4.6.13.5 Deleting a Public or Private Interactive Report

Remove a public or private report that you have created by clicking its Remove Report icon.

To delete a public or private interactive report:

1. Click the **Remove Report** icon next to the report name link.



2. Click **Apply**.

4.6.14 Resetting a Report

Reset a report back to the default settings by selecting Reset from the Actions, Report submenu. Resetting a report removes any customizations you have made.

To reset a report:

1. Click the **Actions** menu and select **Report** then **Reset**.
2. Click **Apply**.

4.6.15 Downloading a Report

Download or email an interactive report as a CSV, HTML, Excel, or PDF file by selecting Download in the Actions menu.

To download or email an interactive report:

1. Click the **Actions** menu and select **Download**.

The Download dialog displays.

2. Choose report download format - Select **CSV**, **HTML**, **Excel**, or **PDF**.

   All options may not be available depending on how your developer has configured the application. Extra PDF options may appear if you use native PDF printing without an external print server.

3. For **PDF**, choose the Page Size, Page Orientation, and whether to include Accessibility Tags.

   Enabling **Include Accessibility Tags** enables the document to be read aloud by a screen reader and other text-to-speech tools (this increases the file size of the PDF).

4. **Data Only** - Select **Data Only** to include only columns and rows and ignores any active column groups, aggregates, highlights and control breaks.

5. (Optional) **Strip Rich Text** - Enable **Strip Rich Text** to remove Rich Text formatting from the file output. (Option only appears for interactive grids containing a Rich Text column.)

6. Do one of the following:
   - To download the file, click **Download**.
   - To email the file as an attachment:
     a. Enable **Send as Email**.
     b. Complete the fields for the recipients (To, Cc, Bcc, Subject, Body).
     c. Click **Send**.

> **See Also:**
>
> Configuring Interactive Report Actions Menu Download Options in *Oracle APEX App Builder User's Guide*

4.6.16 Subscribing to Report Updates by Email

Subscribe to an interactive report to receive emails when the report is updated.

- How Report Subscriptions Work
  You can subscribe to a report by clicking Subscription on the Actions menu.
- Subscribing to Updated Report Results
  Subscribe to a report by selecting Subscription in the Actions menu.

> **See Also:**
>
> Managing Interactive Report Subscriptions in *Oracle APEX Administration Guide*

4.6.16.1 How Report Subscriptions Work

You can subscribe to a report by clicking Subscription on the Actions menu.

Emails sent from an interactive report contain a system-generated email signature that cannot be overwritten. The signature identifies who originated the email.

To use Subscription:

- An APEX administrator must configure email at the Instance level.
- The application developer must select the report Attributes and enable the Actions Menu, Subscription attribute.
- The application developer must enable Download.

See Also:

- Customizing the Interactive Report Actions Menu in *Oracle APEX App Builder User's Guide*
- Configuring Interactive Report Actions Menu Download Options in *Oracle APEX App Builder User's Guide*

4.6.16.2 Subscribing to Updated Report Results

Subscribe to a report by selecting Subscription in the Actions menu.

Note:

Emails sent from a subscription include a system-generated signature that indicates who created the subscription. This signature cannot be removed.

To receive updated report results by email:

1. Click the **Actions** menu and select **Subscription**.

   The Subscription dialog appears.
2. Under Subscription:
   a. Report Format - Choose the format you want to receive the report in.
   b. Email Address - Enter the email addresses to receive the report. To include multiple email addresses, separate each email address with a comma.
   c. Subject - Enter text to display in the email subject line.
   d. Frequency - Select the interval at which the report is sent.
   e. Starting From - Select a start date and time.
   f. Ending - Select an end date and time. Select a day, week, month, or year.
   g. Click **Apply**.

5

Using Tasks

Tasks are part of the Approvals Component. When configured in Oracle APEX, tasks allow users to approve or reject items.

- About Tasks
  You can use tasks to approve or reject items. Depending on your role, you may be able to interact with tasks by leaving comments, submitting additional information, or updating due dates.
- Working with Tasks
  Your ability to update tasks depends on the role you have for the task, the state the task is in, and the way the application is configured.
- About Unified Task Lists
  Unified Task Lists allow you to see a summary of your tasks.
- Troubleshooting Tasks
  Common questions and solutions for tasks.

> **See Also:**
>
> Managing Approvals in *Oracle APEX App Builder User's Guide*

5.1 About Tasks

You can use tasks to approve or reject items. Depending on your role, you may be able to interact with tasks by leaving comments, submitting additional information, or updating due dates.

Developers can use the Approvals Component to add tasks to applications. The Approvals Component deals with all aspects of human approval in Oracle APEX.

As a user, you usually interact with two areas in the Approvals Component:

1. **Unified Task List** - A summary of your tasks that functions like an inbox.
2. **Task Details Page** - A page that displays information specific to an individual task.

Tasks are created according to a **task definition** configured by the application developer. This ensures that each instance of a specific type of task (for example, an approval tasks for an employee's proposed job change) goes through the same approval process. The task definition specifies who is able to participate in specific types of tasks.

The actions you can take with tasks depend on the role you have as a task participant.

- About Task Due Dates
  Developers can specify the due date for tasks. If a task has a due date, it may expire after that due date. Expired tasks may renew automatically.

- About Task Participants
  Task Participants can take action on tasks. A participant can be an initiator, owner, or business administrator.
- About Task Actions
  Task actions are any operations that you can do on a task instance, including editing the task details, approving or rejecting the task. or leaving a comment on the task.
- About Task Details
  The task details page displays information about a specific task instance.

5.1.1 About Task Due Dates

Developers can specify the due date for tasks. If a task has a due date, it may expire after that due date. Expired tasks may renew automatically.

Developers can configure tasks to have **Due Dates**. If the actual owner for the task does not complete the task before the due date, the task may:

1. Stay in the owner's task list. The task is **Overdue**, and the owner can approve or reject the task at any time.
2. Expire. The task is **Expired** and is no longer visible in the initiator's task list or the owner's task list. The business administrator can see expired tasks by selecting **Show expired tasks**, and can renew the task.
3. Renew. The original task is **Expired**, and APEX automatically creates a new task with a new due date. After the task is automatically renewed a certain number of times, the task expires and does not renew automatically.

The business administrator can renew tasks that have expired or tasks that have already reached their maximum number of renewals. See Renewing a Task for more details.

5.1.2 About Task Participants

Task Participants can take action on tasks. A participant can be an initiator, owner, or business administrator.

You must a task participant to update or modify individual tasks. There are multiple participant **roles**:

- As a **Task Initiator**, you can cancel your tasks, or update your task's priority. The actual owner of the task may ask you to provide more information about the task.
- As a **Potential Owner**, you can claim unassigned tasks to become the **Actual Owner** of those tasks. Tasks can have multiple potential owners. You cannot claim tasks that you initiated.
- As an **Actual Owner**, you can make changes to tasks you own, including requesting more information about the task from the initiator, delegating the task, approving the task, or rejecting the task. You cannot act as an owner on tasks you initiated. You cannot approve or reject tasks you initiated.
- As a **Business Administrator**, you can manage tasks for a specific task definition by updating the task's priority, changing the task due date, adding new potential owners, or renewing expired tasks. Any changes you make only impact the individual task. You cannot modify the underlying task definition.

Each task has at least one potential owner and one business administrator.

5.1.3 About Task Actions

Task actions are any operations that you can do on a task instance, including editing the task details, approving or rejecting the task. or leaving a comment on the task.

You can perform various **actions** on tasks. The actions you can do depend on your role and the task state. For example, you can't update tasks that are already completed, errored, or canceled. You also cannot approve or reject tasks that you initiated.

Table 5-1 Task Actions by Role

Action	Initiator	Potential Owner	Actual Owner	Business Administrator
Claim	No	Yes, if task is Unassigned.	No	No
Complete (Approve/Reject)	No	Yes, either directly from the Unified Task List, or from the Task Details page by Claiming the task and then completing it.	Yes, either directly from the Unified Task List, or from the Task Details page.	No
Delegate	No	No	Yes	Yes
Release	No	No	Yes	No
Cancel	Yes	No	No	No
Add Potential Owner	No	No	No	Yes
Add Comment	Yes	Yes	Yes	Yes
Set Priority	Yes	No	No	Yes
Request Information	No	No	Yes	No
Submit Information	Yes	No	No	No
Update Due Date	No	No	No	Yes
Renew	No	No	No	Yes, if the task is expired. Tasks can be manually renewed as many times as needed.

See Also:

About Task States and Transitions in *Oracle APEX App Builder User’s Guide*

5.1.4 About Task Details

The task details page displays information about a specific task instance.

The task details page shows information about a specific task instance. This information is more detailed than the information shown on the Unified Task List.

For example, say you use the **Sample Approvals App** to put in a salary change request for Allen from 1600 to 1800. The **My Requests** Unified Task List displays "Salary Change for Allen from 1600 to 1800" and indicates the task is assigned to Jane, due six days from now. However, clicking on the task title to access the task details page provides more information about the task, including the task priority, the user who initiated the task, the percentage change this request represents, a graph indicating Allen's salary changes over time, comments on the task, and the history of the task.

5.2 Working with Tasks

Your ability to update tasks depends on the role you have for the task, the state the task is in, and the way the application is configured.

- Claiming a Task
  You can claim a task to assign it to you.
- Approving or Rejecting a Task
  You can complete tasks by approving or rejecting them.
- Requesting Information for a Task
  If you are the actual owner for a task, you can request more information from the task initiator.
- Submitting Information for a Task
  If you are the task initiator, you may be asked to submit information about the task to the task owner.
- Commenting on a Task
  You can comment on a task to provide additional information about the task.
- Changing the Priority of a Task
  You can change the priority of a task.
- Delegating a Task
  Delegating a task allows you assign a task to another user.
- Inviting a Participant to a Task
  As a business administrator, you can invite a participant to a specific instance of a task.
- Updating the Due Date for a Task
  As a business administrator, you can update the due date for a specific instance of a task.
- Releasing a Task
  Releasing a task allows you to remove yourself as the actual owner, and make the task available for other potential owners to claim.
- Canceling a Task
  You can cancel a task you have initiated if you no longer need it.
- Renewing a Task
  As a business administrator, you can renew an expired task,
- Viewing the Task History
  You can view the history of a task to see what has already happened with the task.

5.2.1 Claiming a Task

You can claim a task to assign it to you.

If there are multiple potential owners for a task, the task is **Unassigned**.

To claim a task, you must be a Potential Owner. If you are not a potential owner, the Business Administrator can add you as a potential owner.

1. Open the application.
2. Open the appropriate Unified Task List. For the **Sample Approvals App**, the task list is called **My Approvals**.
3. Locate the unassigned task you want to claim, and click on the task to access the task details page.
4. Click **Claim Task** to claim the task.

   The position of the Claim Task button varies by application depending on how the developer customizes the task details page.

The task is now assigned to you.

5.2.2 Approving or Rejecting a Task

You can complete tasks by approving or rejecting them.

To approve or reject a task, you must be a **Potential Owner** or an **Actual Owner** for the task. You cannot be the **Task Initiator**. You cannot approve or reject tasks you initiated.

1. Open the application.
2. Access the appropriate Unified Task List. For the **Sample Approvals App**, the task list is called **My Approvals**.
3. Locate the task you want to approve or reject.
4. To approve the task from the Unified Task List, click **Approve** or **Reject**.

   If you complete a task from the Unified Task List, you cannot add comments.
5. To approve the task from the Task Details page:
   a. Click on the task.
   b. If necessary, claim the task by clicking **Claim Task**.
   c. (Optional) Add a comment to the task.
   d. Click **Approve** or **Reject**.

   The position of the Approve or Reject buttons varies by application, depending on how the task details page is configured.

The task state updates. The task is now complete.

5.2.3 Requesting Information for a Task

If you are the actual owner for a task, you can request more information from the task initiator.

To request information for a task, you must be the **Actual Owner** for the task.

1. Open the application.
2. Access the appropriate Unified Task List. For the **Sample Approvals App**, the task list is called **My Approvals**.
3. Locate the task you want to request more information for.
4. Click on the task to open the Task Details page.
5. Click **Request Information**.

   The position of the Request Information button varies by application, depending on how the developer configured the task details page.
6. Type in the details of your request in the Message field, and click **Request Information**.

APEX assigns the task to the initiator, with your request information text in the comments section of the task details page.

5.2.4 Submitting Information for a Task

If you are the task initiator, you may be asked to submit information about the task to the task owner.

If one of your tasks is in the **Information Requested** status, you can submit information to send the task back to the task owner.

1. Open the application.
2. Access the appropriate Unified Task List. For the **Sample Approvals App**, the task list is called **My Tasks**.
3. Locate the task in the **Information Requested** status.
4. Click on the task to open the Task Details page.
5. Click **Submit Information**.

   The position of the Request Information button varies by application, depending on how the developer configured the task details page.
6. Type in the details of your request in the Message field, and click **Submit Information**.

APEX reassigns the task back to the actual owner, with your submitted information text in the comments section of the task details page.

5.2.5 Commenting on a Task

You can comment on a task to provide additional information about the task.

You can comment on a task that is in progress. If you want to comment on a completed task, you need to be the business administrator for that task.

1. Open the application.
2. Access the appropriate Unified Task List.
3. Locate the task you want to update, and click on the task to access the task details page.
4. Type your comment in the comment text box.
5. Click **Add Comment**.

The comment displays on the task.

5.2.6 Changing the Priority of a Task

You can change the priority of a task.

To change the priority of a task, you must be the **Initiator** or **Business Administrator** for the task.

1. Open the application.
2. Access the appropriate Unified Task List.
3. Locate the task you want to update, and click on the task to access the task details page.
4. Click **Priority**.

   The position of the Priority button varies by application, depending on how the task details page is configured.
5. Select the new priority from the list.
6. Click **Set Priority**.

The priority is updated.

5.2.7 Delegating a Task

Delegating a task allows you assign a task to another user.

An assigned task can be **Delegated** to another user. That user becomes the new Actual Owner for the task.

To delegate a task, you must be a Business Administrator or the Actual Owner of the task. Tasks that have already been approved or rejected cannot be delegated. The user you delegate the task to must be listed as a potential owner for the task.

1. Open the application.
2. Access the appropriate Unified Task List.
3. Locate the task you want to delegate, and click on the task to access the task details page.
4. Click **Delegate**.

   The position of the Delegate button varies by application, depending on how the task details page is configured.
5. Select the new actual owner for the task.
6. Click **Delegate**.

The task is delegated to the selected user.

5.2.8 Inviting a Participant to a Task

As a business administrator, you can invite a participant to a specific instance of a task.

You may want to invite a participant to a task if the actual owner is away from the office. The new participant can claim the specific task they are added to, but does not have access to any future tasks created from the same task definition.

To invite a participant, you must be a Business Administrator for the task. You cannot invite a participant to a completed task.

1. Open the application.
2. Access the appropriate Unified Task List.
3. Locate the task you want to invite a participant to, and click on the task to access the task details page.
4. Click **Invite Participant**.

   The position of the Invite Participant button varies by application, depending on how the task details page is configured.
5. Type in the login name for the participant you want to add.
6. Click **Invite Participant**.

If the task is unassigned, the new participant can claim the task. If the task is assigned, either you, as the Business Administrator, or the actual owner of the task can delegate the task to the new participant.

5.2.9 Updating the Due Date for a Task

As a business administrator, you can update the due date for a specific instance of a task.

To update the due date, you must be the business administrator for the task. You cannot update the due date if a task is already approved, rejected, or expired.

1. Open the application.
2. Access the appropriate Unified Task List.
3. Locate the task you want to update the due date on, and click on the task to access the task details page.
4. Click **Due**.

   The position of the Due button varies by application, depending on how the task details page is configured.
5. Select the new due date for the task.
6. Click **Set Due Date**.

The due date updates.

5.2.10 Releasing a Task

Releasing a task allows you to remove yourself as the actual owner, and make the task available for other potential owners to claim.

Releasing a task you own makes the task available for other Potential Owners to claim.

To release a task, you must be the Actual Owner of the task. Tasks that you have already approved or rejected cannot be released.

1. Open the application.
2. Access the appropriate Unified Task List. For the **Sample Approvals App**, the task list is called **My Approvals**.

3. Locate the task you want to release, and click on the task to access the task details page.
4. Click **Release**.

   The position of the Release button varies by application, depending on how the task details page is configured.

The task is now unassigned, and available for potential owners to claim.

5.2.11 Canceling a Task

You can cancel a task you have initiated if you no longer need it.

Canceling a task you initiated stops the task from continuing.

To cancel a task, you must be the task initiator. Tasks that are already approved or rejected cannot be canceled.

1. Open the application.
2. Access the appropriate Unified Task List. For the **Sample Approvals App**, the task list is called **My Tasks**.
3. Locate the task you want to cancel, and click on the task to access the task details page.
4. Click **Cancel Task**.

   The position of the Cancel Task button varies by application, depending on how the task details page is configured.
5. Click **Cancel Task** on the dialog window.

The task is now canceled.

5.2.12 Renewing a Task

As a business administrator, you can renew an expired task,

Renewing an expired task creates a new task from the same task definition.

As a business administrator, you can renew a task once it is expired.

1. Open the application.
2. Access the appropriate Unified Task List. For the **Sample Approvals App**, the task list is called **Approvals Administration**.
3. Locate the task you want to renew, and click on the task to access the task details page.
4. Click **Renew Task**.

   The Renew Task button is only visible if the task is expired. Tasks cannot be renewed prior to expiring.

APEX creates a new task from the same task definition. The renewed task has a new due date.

5.2.13 Viewing the Task History

You can view the history of a task to see what has already happened with the task.

The **Task History** show a log of everything that has occurred with the task.

To view the task history, you must be able to open the task details page.

1. Open the application.
2. Access the appropriate Unified Task List.
3. Locate the task you want to view, and click on the task to access the task details page.
4. Click the dropdown arrow next to **History**.

   The position of the History region varies by application, depending on how the task details page is configured.
5. The task history displays. Events are logged in chronological order, and details for each event are in the Message column.

5.3 About Unified Task Lists

Unified Task Lists allow you to see a summary of your tasks.

Unified Task Lists allow you to see a summary of your tasks, similar to an inbox. Although the name and exact configuration of a task list is specific to the application you're using, there are different **Report Contexts** available:

- **Initiated by Me** - For any tasks where you are the Initiator. You can update the task priority, cancel the task, or submit information on the task.
- **My Tasks** - For any tasks where you are a Potential or Actual Owner. You can claim tasks, approve or reject tasks, or request information on tasks.
- **Admin Tasks** - For any tasks where you are the Business Administrator. You can update the task priority, delegate the task, or renew the task.

In the **Sample Approvals App**, the My Tasks context is represented by the **My Approvals** page, the Admin Tasks context by the **Approvals Administration** page, and the Initiated by Me context by the **My Requests** page. Depending on your role, you may not be able to see all pages in the application.

- Searching for a Task
  Learn how to search for specific tasks using filters.

5.3.1 Searching for a Task

Learn how to search for specific tasks using filters.

1. Open the application.
2. Access the appropriate Unified Task List. For the **Sample Approvals App**, the task list with tasks assigned to you is called **My Approvals**.
3. In the Search bar, you can:
   a. Type the search criteria into the search bar
   b. Select a suggestion chip from the dropdown, and choose criteria for the search.
   c. Select whether or not to show expired tasks (Business Administrator only).

The search results automatically update, displaying the results.

See Also:

Example Smart Filters in *Oracle APEX App Builder User's Guide*

5.4 Troubleshooting Tasks

Common questions and solutions for tasks.

Table 5-2 Frequently Asked Questions for the Tasks and Approvals Component

Question	Solution	Responsible Person	Further Reading
I have multiple tasks assigned to me, but when I click on a task, I don't see the approve or reject button. How can I complete the task?	You must claim the task so that it is assigned to you before you can access the approve or reject buttons.	Potential Owner	• Claiming a Task • Approving or Rejecting a Task
I accidentally claimed a task, but don't want to complete it. What can I do?	You have two options: 1. Delegate the task to someone else. 2. Release the task so another potential owner can claim it.	Actual Owner	• Delegating a Task • Releasing a Task
Someone assigned a task to me, but I can't find it in the Unified Task List. How do I find the task?	You can use Smart Filters to search by keyword, due date, priority, and other information.	Actual Owner	• Searching for a Task • Example Smart Filters in *Oracle APEX App Builder User's Guide*
I can see a task in the Unified Task List, but when I click on the task, I get a "Your session has ended." error. How can I see the Task Details?	This happens when the Unified Task List and the Task Details page are in different applications. An application developer can set up Session Sharing, which will let you view the Task Details.	Application Developer	• Managing Session State Values in *Oracle APEX App Builder User's Guide*
The application I'm using sends an email to the task initiator when the task is completed, but I don't receive emails. How do I fix this?	APEX sends emails from the email queue every fifteen minutes. Wait fifteen minutes, and if the email still hasn't arrived, contact your application developer.	User / Instance Administrator	• Sending Email from an Application in *Oracle APEX App Builder User's Guide*
The actual owner for a task has left the organization, and cannot complete the task. How can I reroute the task?	The Business Administrator can delegate the task to another potential owner.	Business Administrator	• Delegating a Task

Table 5-2 (Cont.) Frequently Asked Questions for the Tasks and Approvals Component

Question	Solution	Responsible Person	Further Reading
My task list no longer shows tasks that were completed last week. How do I view historical tasks?	Tasks that are completed, canceled, or errored are automatically purged by APEX. The retention period is application-specific, and a report of purged tasks is available for the workspace administrator.	Application Developer / Workspace Administrator	• About the Archive of Purged and Task Files Report in *Oracle APEX App Builder User's Guide* • Configuring Workflow Settings in *Oracle APEX Administration Guide*
What actions can I take on a task?	Task actions depend on the task state, and the role you have for the task.	All	• About Task Actions

A

Keyboard Shortcuts

Reference keyboard shortcuts for Oracle APEX.

> **Note:**
>
> The Oracle APEX interface is intended for use with the US keyboard layout. Users of other keyboard layouts should refer to the US keyboard layout in conjunction with this documentation as there may be incompatibilities regarding number and special character keys, such as the `'` (quote) key.

- General Keyboard Shortcuts
  Learn about general keyboard shortcuts for Oracle APEX.
- Component-Specific Keyboard Shortcuts
  Learn about component-specific keyboard shortcuts.

A.1 General Keyboard Shortcuts

Learn about general keyboard shortcuts for Oracle APEX.

You can use general keyboard shortcuts throughout Oracle APEX.

If a page incorporates specialized keyboard shortcuts, click the **Help** icon located in the top-right of the page and select **Shortcuts**, or press **Alt+Shift+F1** to display a list of valid keyboard shortcuts. Not all pages have specialized shortcuts.

Table A-1 General Keyboard Shortcuts

Action	Where	Keys
Display the list of valid keyboard shortcuts for the page	Any page with special keyboard shortcuts	Windows: Alt+Shift+F1 Mac: Option+Shift+F1
Open field help dialog	When focus is on any field with a (?) help icon	Windows: Alt+F1 Mac: Option+F1
Move focus back to field without closing dialog	When focus is on a field help dialog	Windows: Alt+F6 Mac: Option+F6
Close dialog	When focus is on any dialog	Escape
Select the previous/next tab	Any page with focus in region display selector tabs	Arrow keys

A.2 Component-Specific Keyboard Shortcuts

Learn about component-specific keyboard shortcuts.

Component-specific keyboard shortcuts only work for specific components.

If a page incorporates specialized keyboard shortcuts, click the **Help** icon located in the top-right of the page and select **Shortcuts**, or press **Alt+Shift+F1** to display a list of valid keyboard shortcuts. Not all pages have specialized shortcuts.

- Date Picker
  Learn about Date Picker keyboard shortcuts.
- CSS Calendar
  Learn about CSS Calendar keyboard shortcuts.
- Chart Region
  Learn about chart region keyboard shortcuts.
- Map Region
  Learn about map region keyboard shortcuts.
- Interactive Grid
  Learn about interactive grid keyboard shortcuts.
- Markdown Editor Keyboard Shortcuts
  Learn about markdown editor keyboard shortcuts.
- Rich Text Editor Keyboard Shortcuts
  Learn about rich text editor keyboard shortcuts.

A.2.1 Date Picker

Learn about Date Picker keyboard shortcuts.

Table A-2 Date Picker Keyboard Shortcuts

Action	Keys
Open the popup, when the input has focus and Display Mode is set to popup	Down arrow
Close the popup and focus the input, when Display Mode is set to popup	Escape
Focus the next element	Tab • Note: When the **Display Mode** is set to popup and the last element is focused, pressing Tab moves focus to the first element
Focus the previous element	Shift+Tab • Note: When the **Display Mode** is set to popup and the first element is focused, pressing Tab moves focus to the last element
Move focus to the same day of the previous week	Up arrow
Move focus to the same day of the next week	Down arrow
Move focus to the previous day	Left arrow
Move focus to the next day	Right arrow
Move focus to the first day of the current week	Home
Move focus to the last day of the current week	End
Change the grid of dates to the previous month	Page Up
Change the grid of dates to the next month	Page Down

Table A-2 (Cont.) Date Picker Keyboard Shortcuts

Action	Keys
Change the grid of dates to the previous year	Shift+Page Up
Change the grid of dates to the next year	Shift+Page Down
Select the focused date, when **Show Time** is off	Enter or Space
Select the focused date, when **Show Time** is on	Enter or Space, then Done

A.2.2 CSS Calendar

Learn about CSS Calendar keyboard shortcuts.

When you focus on the calendar grid (month, week or day view), you can use the arrow keys to navigate within the calendar. There are two calendar browsing modes:

1. **Event Browsing -** Focuses on existing calendar events
2. **Calendar Browsing -** Allows you to freely select dates or date ranges

The keyboard shortcut behavior depends on the current view.

Table A-3 Event Browsing CSS Calendar Keyboard Shortcuts

Action	Keys
Go to the previous event **Note:** If on the first event in the given view, move to the last event.	Up arrow
Go to the next event **Note:** If on the last event in the given view, move to the first one.	Down arrow
Switch to **Calendar Browsing** mode	N
Leave browsing mode	Escape

Table A-4 Month View CSS Calendar Keyboard Shortcuts

Action	Keys
Go to the previous day **Note:** If on the first day of a month, switch to the previous month.	Left arrow
Go to the next day **Note:** If on the last day of a month, switch to the next month.	Right arrow
Go to the next week; same day	Down arrow
Go to the previous week; same day	Up arrow
Extend the selection by one day, up to the end of the current view	Shift+Right arrow
Decrease the selection by one day, only until the selection spans one day	Shift+Left arrow
Move to the next month	Page Down
Move to the previous month	Page Up
Run the **Create Link** given as Plug-in attribute by the developer or fire the **Calendar Date Select** event	Enter / Space
Leave **Calendar Browsing** and go back to **Event Browsing**	Escape

Table A-5 Week View CSS Calendar Keyboard Shortcuts

Action	Keys
Go to the previous day **Note:** If on the first day of a week, switch to the previous week.	Left arrow

Table A-5 (Cont.) Week View CSS Calendar Keyboard Shortcuts

Action	Keys
Go to the next day **Note:** If on the last day of a month, switch to the next month.	Right arrow
Extend the selection by one day, up to the end of the current view	Shift+Right arrow
Decrease the selection by one day until the selection spans one day	Shift+Left arrow
Move selection 30 minutes back in time	Up arrow
Move selection 30 minutes forward in time	Down arrow
Extend selection range by 30 minutes	Shift+ Down arrow
Decrease selection by 30 minutes, until the selection is 30 minutes long	Shift+Up arrow
Move to the next week	Page Down
Move to the previous week	Page Up
Run the **Create Link** given as plug-in attribute by the developer or fire **Calendar Date Select** event	Enter / Space
Leave **Calendar Browsing** and go back to **Event Browsing**	Escape

Table A-6 Day View CSS Calendar Keyboard Shortcuts

Action	Keys
Go to the previous day	Left arrow
Go to the next day	Right arrow
Move selection 30 minutes back in time	Up arrow
Move selection 30 minutes forward in time	Down arrow
Extend selection range by 30 minutes	Shift+Down arrow
Decrease selection by 30 minutes, until the selection is 30 minutes long	Shift+Up arrow
Move to the next day	Page Down
Move to the previous day	Page Up
Run the **Create Link** given as plug-in attribute by the developer or fire **Calendar Date Select** event	Enter / Space
Leave **Calendar Browsing** and go back to **Event Browsing**	Escape

A.2.3 Chart Region

Learn about chart region keyboard shortcuts.

Table A-7 Chart Region Keyboard Shortcuts

Action	Keys
Move focus to next element	Tab
Move focus to previous element	Shift+Tab
Move focus and selection to previous data item	Up arrow
Move focus and selection to next data item	Down arrow
Move focus and selection to previous data item (on left)	Left arrow
Move focus and selection to next data item (on right)	Right arrow
Move focus and multiselect previous data item	Shift+Up arrow
Move focus and multiselect next data item	Shift+Down arrow
Move focus and multiselect previous data item (on left)	Shift+Left arrow
Move focus and multiselect next data item (on right)	Shift+Right arrow
Move focus to previous data item, without changing the current selection	Ctrl+Up arrow
Move focus to next data item, without changing the current selection	Ctrl+Down arrow
Move focus to previous data item (on left), without changing the current selection	Ctrl+Left arrow
Move focus to next data item (on right), without changing the current selection	Ctrl+Right arrow
Multiselect data item with focus	Ctrl+Space
Zoom in one level if zooming is enabled	= or +
Zoom out one level if zooming is enabled	- or _
Pan up if scrolling is enabled	Page Up
Pan down if scrolling is enabled	Page Down
Pan left in left-to-right locales/Pan right in right-to-left locales	Shift+Page Up
Pan right in left-to-right locales/Pan left in right-to-left locales	Shift+Page Down
Drill on data item, categorical axis label, or legend item when drilling is enabled	Enter

A.2.4 Map Region

Learn about map region keyboard shortcuts.

Table A-8 Map Region Keyboard Shortcuts

Action	Keys
Increase the zoom level by 1	= / +
Increase the zoom level by 2	Shift-= / Shift-+
Decrease the zoom level by 1	-
Pan by 100 pixels	Arrow keys

Table A-8 (Cont.) Map Region Keyboard Shortcuts

Action	Keys
Increase the rotation by 15 degrees	Shift+Right arrow
Decrease the rotation by 15 degrees	Shift+Left arrow
Increase the pitch by 10 degrees	Shift+Up arrow
Decrease the pitch by 10 degrees	Shift+Down arrow

A.2.5 Interactive Grid

Learn about interactive grid keyboard shortcuts.

Interactive grid regions come with many keyboard shortcuts and keyboard-specific features to help the keyboard-only and power user. Specifically, they are designed to provide all functionality that is available with the mouse to keyboard users.

In addition, the grid containing the data provides two distinct modes of interaction: **Navigation** and **Edit** mode. **Navigation** mode is designed for use when the grid is not currently editable and allows fast and easy navigation around the grid using keyboard. **Navigation** mode is the default and the only mode if the interactive grid is not editable. **Edit** mode is designed for use when the grid is currently editable, and keyboard behavior differs slightly.

The interactive grid region consists of multiple separate user interface elements, some of which handle tab stops differently depending on the element type and the expected keyboard semantics. For example, the toolbar and pagination controls are implemented as separate tab stops, while the grid view and icon view are implemented as a single tab stop where cursor key navigation is used to move around the view elements when the view has focus.

The following tables list available keyboard shortcuts in interactive grid regions. General shortcuts work in both navigation mode and in edit mode.

Table A-9 General Interactive Grid Keyboard Shortcuts

Action	Keys
Move to the next tab stop	Tab
Move to the previous tab stop	Shift+Tab
Toggle between row selection and cell selection	F8
Open the column header menu, when focus is on the column header	Enter or Space
Increase column width, when focus is on the column header	Windows: Ctrl+Right arrow Mac: Ctrl+Cmd+Right arrow
Decrease column width, when focus is on the column header	Windows: Ctrl+Left arrow Mac: Ctrl+Cmd+Left arrow
Move column to next column position, when focus is on the column header	Shift+Right arrow
Move column to the previous column position, when focus is on the column header	Shift+Left arrow
Sort ascending on the current column, when focus is on the column header	Windows: Alt+Up arrow Mac: Option+ Up arrow

Table A-9 (Cont.) General Interactive Grid Keyboard Shortcuts

Action	Keys
Sort ascending on the current column in addition to the existing search columns, when focus is on the column header	Windows: Shift+Alt+Up arrow Mac: Shift+Option+ Up arrow
Sort descending on the current column, when focus is on the column header	Windows: Alt+Down arrow Mac: Option+ Down arrow
Sort descending on the current column in addition to the existing search columns, when focus is on the column header	Windows: Shift+Alt+Down arrow Mac: Shift+Option+Down arrow
Move to next tab stop in column header menu, when column header menu is open	Tab
Move to previous tab stop in the column header menu, when column header menu is open	Shift+Tab
Close the column header menu, when the column header menu is open	Escape
Show help (if defined) for an item, when a single row is viewed and focus is on the column	Windows: Alt+F1 Mac: Option+F1

Table A-10 Navigation Mode Interactive Grid Keyboard Shortcuts

Action	Keys
Move around the grid, including column headers	Arrow keys
Move without changing the selection	Windows: Ctrl+Up arrow or Ctrl+Down arrow Mac: Ctrl+Alt+Up arrow or Ctrl+Alt+Down arrow
Select	Space
Toggle selection	Windows: Ctrl+Space Mac: Ctrl+Alt+Space
Range select and deselect multiple rows	Shift+Up arrow or Shift+Down arrow
Move one page up in the current column	Page Up
Move one page down in the current column	Page Down
Move to first cell in current row	Home
Move to last cell in current row	End
Move to the first cell in the grid	Windows: Ctrl+Home Mac: Option+Up arrow
Move to the last cell in the grid	Windows: Ctrl+End Mac: Option+Down arrow
Add a row after the last selected row, if grid is editable	Windows: Insert Mac: No equivalent
Delete the selected rows, if grid is editable	Delete
Move around the icons, while in icon view	Arrow keys
Move to the first icon, while in icon view	Home
Move to the last icon, while in icon view	End
Switch from navigation mode to edit mode, if the interactive grid is editable	Enter or F2

Table A-11 Edit Mode Interactive Grid Keyboard Shortcuts

Action	Keys
Move to the next cell in the same row	Tab
Move to the previous cell in the same row	Shift+Tab
Move to the next cell in the same column	Enter
Move to the previous cell in the same column	Shift+Enter
Exit edit mode and return to navigation mode	Escape

A.2.6 Markdown Editor Keyboard Shortcuts

Learn about markdown editor keyboard shortcuts.

Table A-12 Markdown Editor Keyboard Shortcuts

Action	Keys
Leave Markdown Editor and go to next tab stop	Ctrl+Shift+.
Leave Markdown Editor and go to previous tab stop	Ctrl+Shift+,

A.2.7 Rich Text Editor Keyboard Shortcuts

Learn about rich text editor keyboard shortcuts.

Table A-13 Content Editing Shortcuts in the Rich Text Editor

Action	Keys
Copy	Ctrl+C
Paste	Ctrl+V
Paste plain text and inherit target formatting	Ctrl+Shift+V
Undo	Ctrl+Z
Redo	Ctrl+Y or Ctrl+Shift+Z
Select all	Ctrl+A
Bold	Ctrl+B
Italic	Ctrl+I
Link	Ctrl+K
Insert a hard break/new paragraph	Enter
Insert a soft break/` `	Shift+Enter
Nest the current list item (when in a list)	Tab
Move out of link or inline style	Arrow keys
Revert autoformatting action	Backspace

Table A-14 Content Editing Shortcuts When a Widget is Selected in the Rich Text Editor

Action	Keys
Insert a new paragraph directly after a widget	Enter
Insert a new paragraph directly before a widget	Shift+Enter
Display the caret to allow typing directly before a widget	Up arrow or Left arrow
Display the caret to allow typing directly after a widget	Down arrow or Right arrow

Table A-15 Content Editing Shortcuts in a Table Cell in the Rich Text Editor

Action	Keys
Move the selection to the next cell	Tab
Move the selection to the previous cell	Shift+Tab
Insert a new table row (when in the last cell of a table)	Tab
Navigate through the table	Arrow keys

Table A-16 User Interface and Navigation Shortcuts in the Rich Text Editor

Action	Keys
Close contextual balloons and UI components (dropdowns, etc.)	Esc
Move focus to the visible contextual balloon	Tab
Move focus between fields (inputs and buttons) in contextual balloons	Tab
Move focus to the toolbar	Windows: Alt+F10 Mac: Option+F10
Navigate through the toolbar	Arrow keys
Execute the currently focused button	Enter

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