Oracle® Application Express

End User's Guide

Release 5.0

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Oracle Application Express End User's Guide, Release 5.0

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Preface

Oracle Application Express End User's Guide offers an introduction to using Oracle Application Express applications from an end user's perspective. This guide explains how to use Websheets and interactive reports and use applications that include the ability to upload data.

- Audience
- Documentation Accessibility
- Related Documents
- Conventions

Audience

Oracle Application Express End User's Guide is intended for end users who are running Oracle Application Express 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 Oracle Application Express.

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`.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info` or visit `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs` if you are hearing impaired.

Related Documents

For more information, see these Oracle resources:

- *Oracle Application Express Release Notes*
- *Oracle Application Express Installation Guide*
- *Oracle Application Express Application Builder User's Guide*
- *Oracle Application Express Administration Guide*

- *Oracle Application Express SQL Workshop Guide*
- *Oracle Application Express API Reference*
- *Oracle Application Express Migration 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.

Changes in This Release

This preface contains:

-

Changes in Oracle Application Express Release 5.0

The following are changes in *Oracle Application Express End User's Guide* for Oracle Application Express release 5.0

New Features

The following features are new in this release:

- Websheets feature a new modernized user interface.

  See "Using Websheets" on page 2-1.

- Interactive report enhancements

  Interactive reports feature an new more accessible user interface for displaying data and report settings and support for fixed column headers. Additionally, end users can now define a pivot report at runtime.

  See "Using Interactive Reports" on page 3-1.

- Data Loading Wizard Enhancements

  Data Load Wizards now include support for application-level date and time formats.

  See "Data Loading Wizard Examples" on page 4-1.

Deprecated and Desupported Features

See "Deprecated Features" and "Desupported Features" in *Oracle Application Express Release Notes*.

Other Changes

The following are additional changes in the release:

- All content has been updated to reflect new functionality.
- Screen captures and graphics have been added and updated to reflect Oracle Application Express release 5.0 user interface enhancements.

1

About Oracle Application Express

This section offers an introduction to using Oracle Application Express applications from an end user's perspective. This section describes Oracle Application Express and explains the differences between Websheet applications and database applications.

- Browser Requirements
- About Oracle Application Express
- About Websheet Applications
- About Database Applications

See Also: "Quick Start" in *Oracle Application Express Application Builder User's Guide*

Browser Requirements

Because Oracle Application Express relies upon standards-compliant HTML5, CSS3, and JavaScript, Oracle recommends that you use the latest web browser software available for the best experience. To learn more, see "Browser Requirements" in *Oracle Application Express Installation Guide*.

About Oracle Application Express

Oracle Application Express is a rapid web application development tool for the Oracle Database. Through wizards or direct input, developers can assemble an HTML interface (or application) on top of database objects. Each application is a collection of linked pages using tabs, buttons, or hypertext links.

By creating an application, users can manage, manipulate, and display data in the Oracle Database. Using Oracle Application Express, developers can build two types of applications:

- Websheet applications
- Database applications

About Websheet Applications

Websheet applications are interactive web pages that combine text with data. These applications are highly dynamic and defined by their users. Websheet applications include navigation controls, search capabilities, and the ability to add annotations such as files, notes, and tags. Websheet applications can be secured using access control lists and several built-in authentication models.

See Also: "Using Websheets" on page 2-1

About Database Applications

Using only a web browser and with limited programming experience, Oracle Application Express enables developers to create powerful database applications. A database application is an interactive user interface (UI) that enables users to quickly add, update, or display information stored in the Oracle Database. This UI can display information in many formats, including static and interactive reports, forms, maps, charts, and maps.

This guide explains how end users can customize an interactive report. With an interactive report, end users can customize the appearance of report data through searching, filtering, sorting, column selection, highlighting, and other data manipulations. Plus, end users can save their customizations and download the report locally.

This guide also explains how to import data into an Oracle Application Express application using an existing application Data Loading Wizard.

See Also: "Using Interactive Reports" on page 3-1 and "Data Loading Wizard Examples" on page 4-1

2 Using Websheets

This section describes how end users can use and customize Websheet applications.

- About Websheet Applications
- Running a Websheet
- Using Websheets
- Managing Websheet Pages
- Adding and Editing Page Sections
- Adding and Editing Text Sections
- Adding Navigation Sections
- Managing Data Grids
- Adding and Editing Data Content
- Adding Data Reports
- Creating Data Sections Based on a Data Grid or Report
- Creating Chart Sections
- Understanding Markup Syntax
- Managing Annotations
- Managing Websheet Applications
- Viewing Websheets

> **See Also:** "Creating Websheet Applications" in *Oracle Application Express Application Builder User's Guide*

About Websheet Applications

Websheet applications are interactive web pages that combine text with data. These applications are highly dynamic and defined by their users. Websheet applications include navigation controls, search capabilities, and the ability to add annotations such as files, notes, and tags. Websheet applications can be secured using access control lists and several built-in authentication models.

Running a Websheet

To run a Websheet, a developer provides you with a URL and login credentials (that is, a username and password).

To run a Websheet:

1. Click the supplied URL, or enter it in your browser's Address field.
2. Enter your Websheet credentials:
   a. Username - Enter your username.
   b. Password - Enter your password.
   c. Click **Log In** or **Sign In**.

      Tip: The language that displays differs depending upon who creates the application. For Oracle-supplied applications, including packaged applications and the Oracle Application Express development environment, **Sign In/Sign out** displays. For applications you or your developers create, **Log In/Log Out** displays.

   The Websheet application appears in a new window.

   See Also: "Running a Websheet" in *Oracle Application Express Application Builder User's Guide*

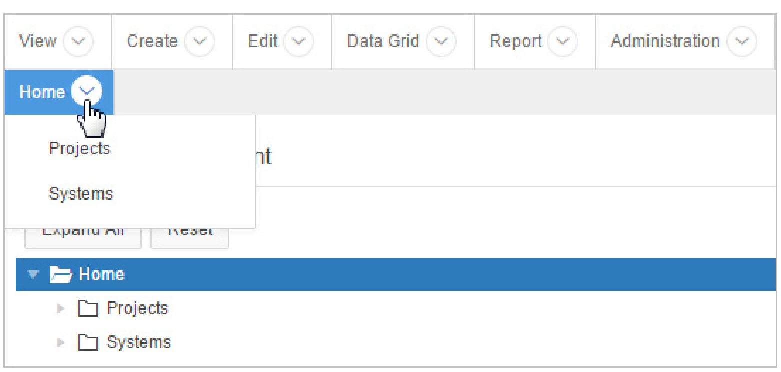
Using Websheets

This section describes interface elements common to all Websheet applications.

- Breadcrumb Sections
- Navigation Sections
- Showing and Hiding Page Sections
- Online Help
- Sign out Link
- Searching a Websheet
- Control Panel

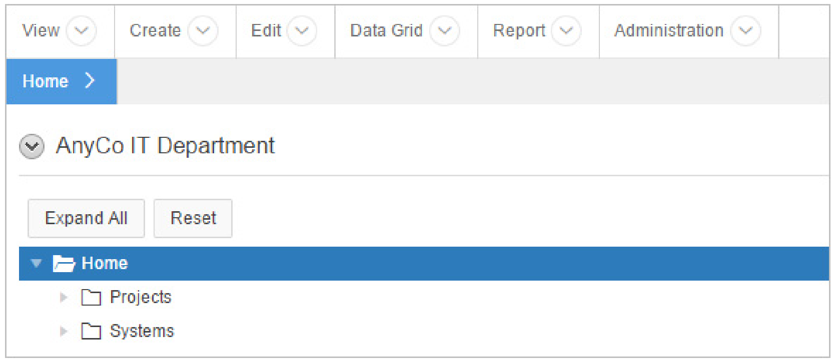
Breadcrumb Sections

A breadcrumb displays at the top of every Websheet page. Click the down arrow next to the home breadcrumb to display a submenu of links to all Websheet pages. To view another page, click the child breadcrumb entry.



Navigation Sections

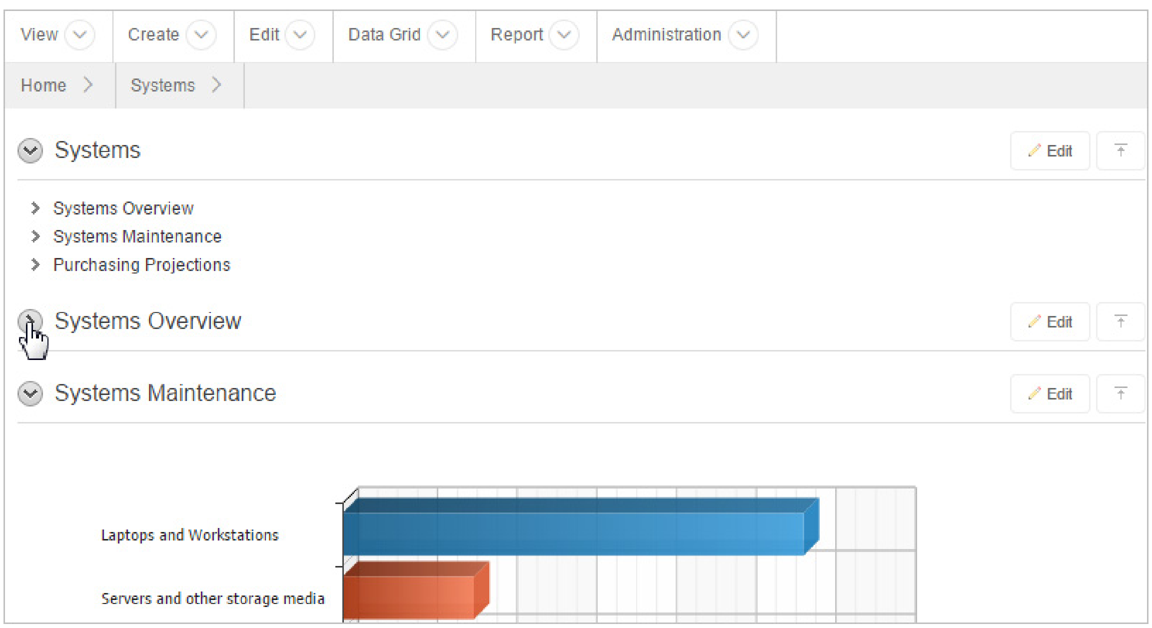
Websheets can contain multiple pages. Each navigation section includes a hierarchical tree that enables you to navigate between pages or page sections.



Click the arrows on the left to expand or collapse the tree. To link to a specific section or page, click it. Click **Expand All** to view all pages and page subsections. Click **Reset** to return the tree to the default display. To learn more, see "Adding Navigation Sections" on page 2-11.

Showing and Hiding Page Sections

You can hide and show page sections. To hide and show a section, click the arrow to the left of a section name.

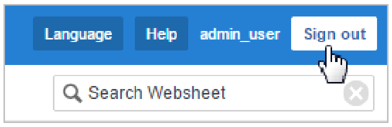


Online Help

A **Help** button displays in the upper right corner of each page. Clicking **Help** displays a small Help system that provides an overview of Websheet functionality. Available tabs include: About, Overview, Access Control, Markup Syntax, Data Grid, Application Content, and FAQ.

> **Tip:** The content of this online Help system is also covered in depth in "About Websheet Applications" in *Oracle Application Express Application Builder User's Guide*

Sign out Link

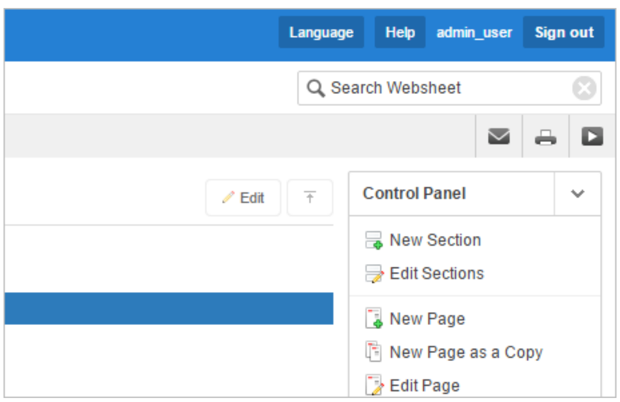


To exit a running Websheet, click **Sign out** in the upper right corner.

> **Tip:** The language that displays differs depending upon who creates the application. For Oracle-supplied applications, including packaged applications and the Oracle Application Express development environment, **Sign In/Sign out** displays. For applications you or your developers create, **Log In/Log Out** displays.

Searching a Websheet

The Search Websheet field displays in the upper right of each Websheet page.



Use **Search Websheet** to perform case insensitive searches of application content. Search results display in a report.

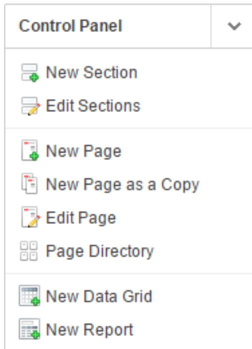
Once the search results display, use the Search region on the right side of the page to control what content to search. Searchable Content options include:

- Page Name
- Page Alias
- Page Description
- Section title
- Section content
- File Name, Alias, Description
- Tags
- Notes
- Data Grid Data

To refresh the view, click the **Search** button.

Control Panel

For users with developer and administrator rights, the Control Panel displays on the right side of most Websheet pages. To hide or display the Control Panel, click the arrow to the right of the region title.



The Websheet Control Panel contains the following options:

- New Sections. See "Adding and Editing Page Sections" on page 2-6.
- Edit Sections. See "Adding and Editing Page Sections" on page 2-6.
- New Page. See "Adding a New Page" on page 2-5.
- New Page as a Copy. See "Copying an Existing Page" on page 2-6.
- Edit Page. See "Editing Page Details" on page 2-6.
- Page Directory. See "Viewing the Page Directory" on page 2-35.
- New Data Grid. See "Creating a Data Grid" on page 2-12.

Managing Websheet Pages

You can add pages to a Websheet manually, or copy existing pages.

- Adding a New Page
- Copying an Existing Page
- Editing Page Details

> **Tip:** You can also add a new page by clicking **New Page** and **New Page as a Copy** on the Control Panel.

Adding a New Page

To add a new Websheet page:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Create menu, select **New Page**.
3. On Create Page:
   a. Name - Enter a page name. The page name displays as the window title and in the breadcrumb.
   b. Page Alias - Identify the page alias. This alias enables you to link to this page. See "Linking to a Page" on page 2-26.

c. Parent Page - If this page is part of a page hierarchy, then select the parent page.

d. Click **Create Page**.

Copying an Existing Page

To copy an existing page:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Create menu, select **New Page as a Copy**.
3. In New Page Name, enter the name of the new page.
4. Click **Copy Page**.

   A success message appears.
5. Select one of the following:
   - **View Current Page**
   - **View New Page**

   Tip: You can change the parent page by editing the Page Details. See "Editing Page Details" on page 2-6.

Editing Page Details

On Page Details, you can change the page name, alias, parent page, or page description.

To edit page details:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Edit menu, select **Edit Page**.
3. On the Details Page:
   - Name - Identifies the name of the page. The page name displays in the window title and in the breadcrumb.
   - Alias - A page alias enables you to create links in page sections to other pages. A page alias must be unique within an application. See "Linking to a Page" on page 2-26.
   - Owner - Identifies the owner of the page.
   - Parent Page - Identifies the parent page. The defined parent page is used to construct breadcrumbs and navigation between pages.
   - Page Description - Descriptive text that describes the page.
4. Click **Apply Changes**.

   A success message appears.

   Tip: You can also edit page details by clicking **Edit Page** on the Control Panel.

Adding and Editing Page Sections

This section describes how to add and edit page sections.

About Page Section Types

Websheets are organized into pages which consist of containers called **sections**. To each Websheet page, you can add the following section types:

- **Text** - Display entered text, inline images, and inline reports, and links to reports, data grids, other pages, files, external URLs, and so on. You can create and modify text sections using an intuitive WYSIWIG editor. See "Adding and Editing Text Sections" on page 2-8.
- **Navigation** - Add dynamically generated navigation to subordinate pages or page sections. See "Adding Navigation Sections" on page 2-11.
- **Data** - Create inline reports based upon a data grid or report. See "Creating Data Sections Based on a Data Grid or Report" on page 2-23 and "Adding Data Reports" on page 2-21.
- **Chart** - Create inline charts based upon a data grid or report. See "Creating Chart Sections" on page 2-24.

Editing Page Sections

To edit a page section:

1. Run the Websheet as described in "Running a Websheet" on page 2-1.
2. Click the **Edit** icon that displays in the upper right of each section.

The Edit Section page appears.

> **Tip:** The left side of the Edit Section page lists all sections on the current page. The current section is highlighted. To access another section, select it.

3. Edit the section and click **Apply Changes**.

Deleting Page Sections

To delete a page section:

1. Run the Websheet as described in "Running a Websheet" on page 2-1.
2. Click the **Edit** icon that displays in the upper right of the section.

   The Edit Section page appears.
3. Click **Delete**.

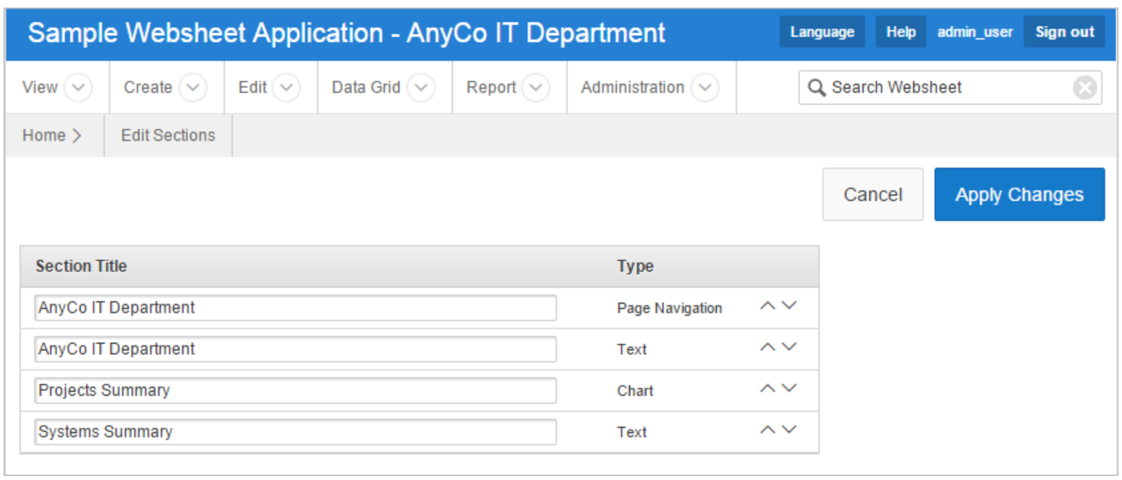
Editing Section Titles and Display Order

You can change the section title or display order on the Edit Sections page.

To edit all sections:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Edit menu, select **Edit Sections**.

   The Edit Sections page appears.



3. To edit the section title, enter a new title.
4. To change the section order, click the **Up** and **Down** arrows adjacent to the section title.
5. Click **Apply Changes**.

> **Tip:** You can also edit sections by clicking **Edit Sections** on the Control Panel.

Adding and Editing Text Sections

To add text to a Websheet page, you create a Text section. You can type directly into a text section, or copy and paste content from a spreadsheet. Copying and pasting from a spreadsheet creates a new section for each spreadsheet row.

- Adding a Text Section
- Editing a Text Section

> **See Also:** "Deleting Page Sections" on page 2-8 and "Understanding Markup Syntax" on page 2-26

Adding a Text Section

To add a text section:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Create menu, select **New Section**.
3. When prompted for the section type, select **Text** and click **Next**.
4. On Create Text Sections select either:
   - **Create single text section**
   - **Create multiple text section from Spreadsheet**
5. If you select **Create single text section**, specify the following:
   a. Sequence - Enter the section display sequence.
   b. Title - Enter a section title.
   c. Content - Enter text. To learn more about formatting text, see "Editing a Text Section" on page 2-9.
   d. Click **Create Section**.
6. If you select **Create multiple text section from Spreadsheet**,specify the following:
   a. First Row Contains Column Headings - Select this option if applicable.
   b. Paste Spreadsheet Data - Paste a two column spreadsheet or other tab delimited data. The first column must contain the section title and the second column must contain the section content.
   c. Click **Create Section**.

   Tip: You can also add a new section by selecting **New Section** on the Control Panel.

Editing a Text Section

You can edit and format text sections using an intuitive WYSIWIG editor.

To edit a text section:

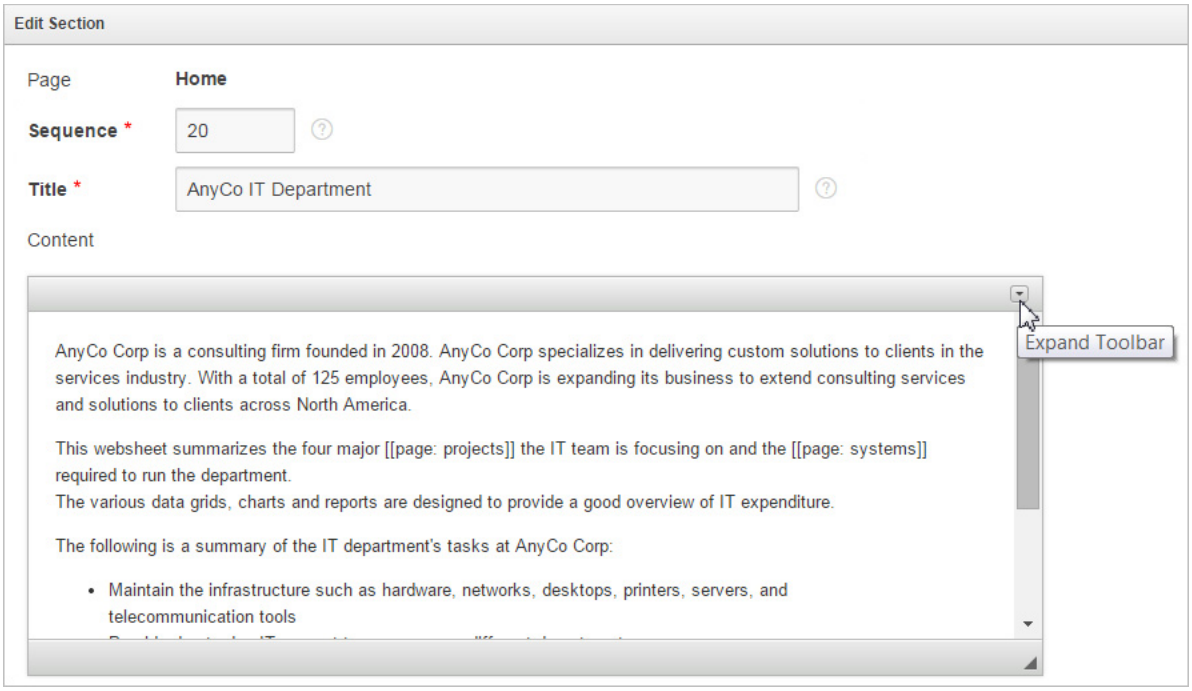
1. Run the Websheet as described in "Running a Websheet" on page 2-1.
2. Click the **Edit** icon that displays in the upper right of the section.

The Edit Section page appears.

3. Edit the text in the field provided.

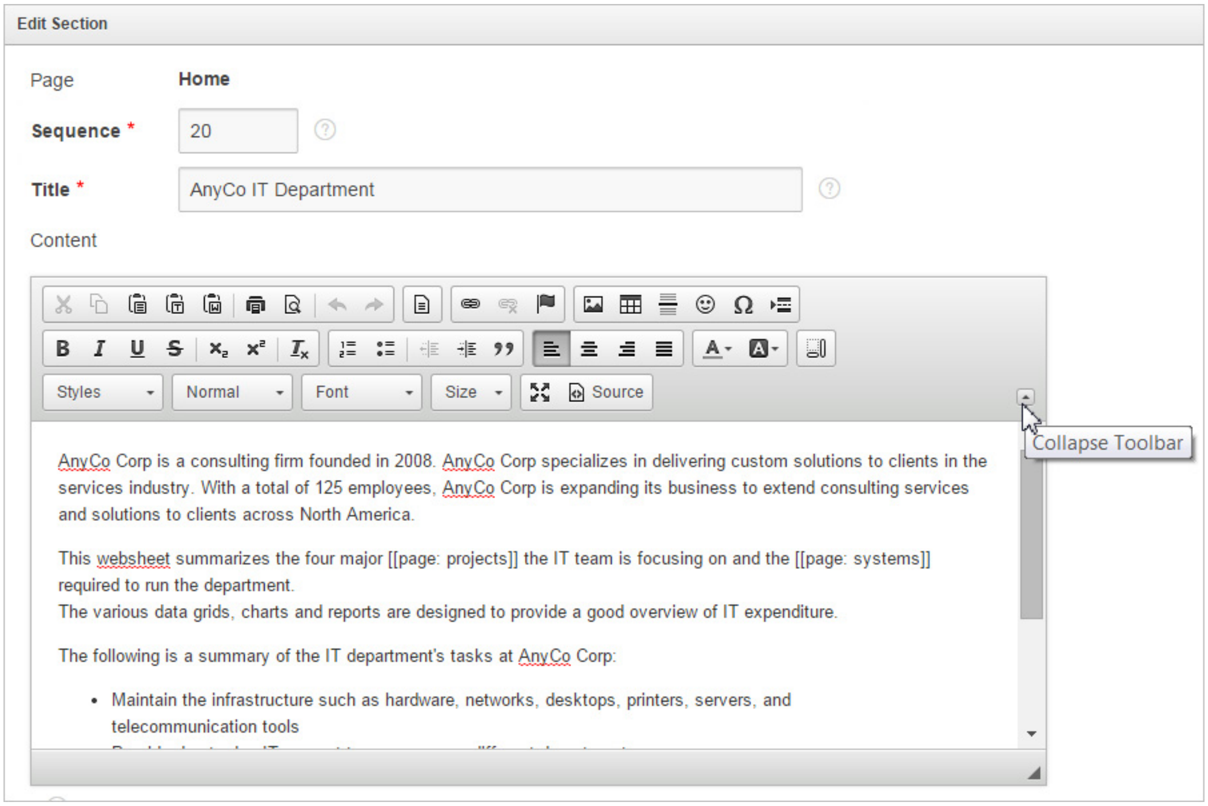
   Tip: To learn more about adding or embedding links, see "Understanding Markup Syntax" on page 2-26

4. To change the formatting, click the **Expand Toolbar** icon in the upper right corner.



The Toolbar appears. When you pass your cursor over an icon, a descriptive tooltip displays.

5. To hide the toolbar, click the **Collapse Toolbar** icon.



6. To save your changes, click **Apply Changes**.

Adding Navigation Sections

By creating a Navigation section, you can add dynamically generated navigation to subordinate pages or page sections.

See Also: "Adding Navigation Sections" on page 2-11, "Deleting Page Sections" on page 2-8, and "Editing Section Titles and Display Order" on page 2-8

Adding a Navigation Section

To add a navigation section:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Create menu, select **New Section**.
3. When prompted for the section type, select **Navigation** and click **Next**.
4. For Navigation Type:
   a. Select either:
      – **Page Navigation** - Creates navigation of all pages in the Websheet.
      – **Section Navigation** - Creates navigation for all section on a page.
   b. Click **Next**.
5. If you select **Page Navigation**, specify the following:
   a. Sequence - Enter the section display sequence.

b. Title - Enter a section title.

c. Starting Page - Select the starting page from which to display hierarchical navigation.

d. Maximum Levels - Select the maximum number of levels (or tree depth) to display.

e. Order Siblings By - Select the order of siblings by column. If not defined, then the siblings are sorted by the page name.

f. Click **Create Section**.

6. If you select **Section Navigation**, specify the following:

a. Sequence - Enter the section display sequence.

b. Title - Enter a section title.

c. Click **Create Section**.

Managing Data Grids

Data grids are sets of data displayed in rows and columns. Data grids store data in a similar way to how spreadsheets store data. Once created, the structure can be modified as needed over time.

- About Data Grids
- Creating a Data Grid
- Copying a Data Grid
- Viewing and Editing a Data Grid
- Viewing the Data Grid Change History Log
- Deleting a Data Grid

See Also: "Adding and Editing Data Content" on page 2-20 and "Understanding Markup Syntax" on page 2-26

About Data Grids

You can define the structure of a data grid using column names, data sources, and basic validations, or you can create a data grid by pasting spreadsheet data. Once created, the structure can be modified as needed.

Users can alter the layout of report data by selecting columns or by applying filters, highlighting, and sorting. Users can also define breaks, aggregations, group bys, computations, and different charts. Additionally, users can create multiple variations of a data grid and save them as named reports, for either public or private viewing. You can also use the data from a data grid and include it as a chart or report within any page.

See Also: "Creating Chart Sections" on page 2-24

Creating a Data Grid

You can create a data grid by either defining the structure (that is, the column names, data sources, and basic validations), or by pasting in spreadsheet data. In addition to the defined columns, the following standard columns are always included within each data grid: owner, created by, created on, updated by, updated on, row order, and annotation (files, notes, links, and tags).

- Creating a Data Grid from Scratch
- Creating a Data Grid by Copying and Pasting Spreadsheet Data

Creating a Data Grid from Scratch

When you create a data grid from scratch you must define the column names, datatypes, and basic values. Once you have created the basic structure, you can then populate it with data.

To create a data grid from scratch:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Create menu, select **New Data Grid**.

   Tip: You can also select **New Data Grid** on the Control Panel.

3. When prompted for the section type, select **From Scratch** and click **Next**.
4. Specify the following:
   a. Name - Enter a data grid name.
   b. Alias - Enter a data grid alias. Use this alias to link to this data grid within other page sections. A data grid alias must be unique within an application.
   c. Define the data grid structure by specifying the column name and data type. To change the order, click the **Up** and **Down** arrow under Move.

      To add more columns, click **Add Column**.
   d. Click **Create Data Grid**.

   The data grid appears.
5. To add data, click **Add Row**. See "Editing Data Grid Data" on page 2-16.

Creating a Data Grid by Copying and Pasting Spreadsheet Data

To create a data grid by copying and pasting spreadsheet data:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Create menu, select **New Data Grid**.

   Tip: You can also select **New Data Grid** from the Create menu or the Control Panel.

3. When prompted for the section type, select **Copy and Paste** and click **Next**.
4. Specify the following:
   a. Name - Enter a data grid name.
   b. Alias - Enter a data grid alias. You can use this alias to link to this data grid within page sections. A data grid alias must be unique within an application.
   c. First Row Contains Column Headings - Select this option if applicable.
   d. Paste Spreadsheet Data - Copy and paste the data you want to load from a spreadsheet program.
   e. Click **Upload.**

A data grid appears.

Copying a Data Grid

To copy a data grid:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Data Grid menu, select an existing data grid.

   The data grid appears.
3. From the Manage menu, select **Copy**.
4. Enter a new data grid name and click **Copy**.

Viewing and Editing a Data Grid

Once you create a data grid, you can view and edit it on the Data page.

- Accessing the Data Page
- Editing Data Grid Data
- Editing Data Grid Columns Manually
- Editing Data Grid Rows Manually
- Editing a Single Data Grid Row
- Adding Annotations to a Single Data Grid Row
- Displaying Annotation Columns in a Data Grid Report
- Managing Pseudo Columns in a Data Grid Report
- Editing Data Grid Properties
- Creating a Bookmark Link to a Data Grid

> **Tip:** Data grids display as an interactive report. To learn more about interactive reports and using the Actions menu, see "Using Interactive Reports" on page 3-1 and "Customizing an Interactive Report Using the Actions Menu" on page 3-5.

Accessing the Data Page

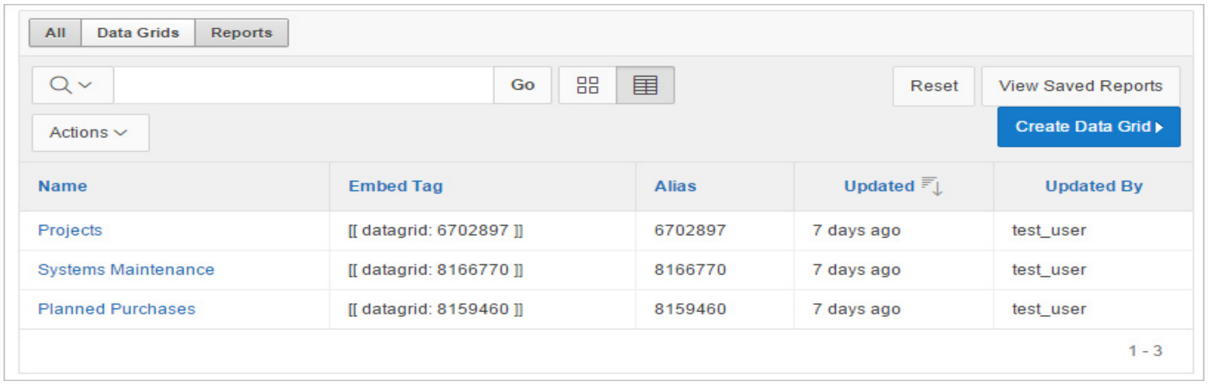
To access the Data page:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Data Grid menu, select **View All**.

   An interactive report appears displaying all data grids.

   > **Tip:** If icons display, then click the **View Report** icon.

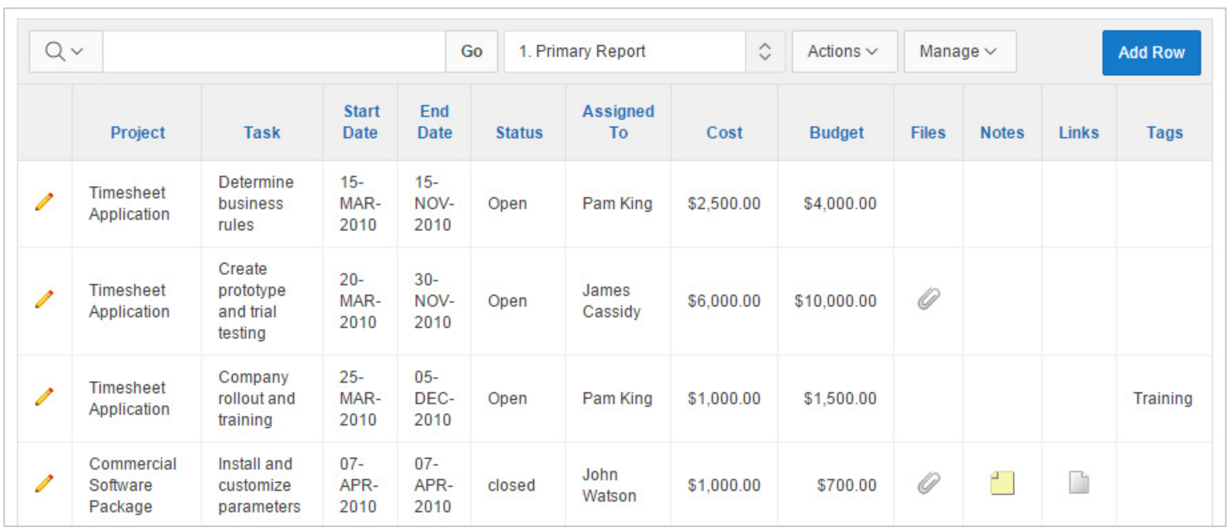
   The Report view appears.



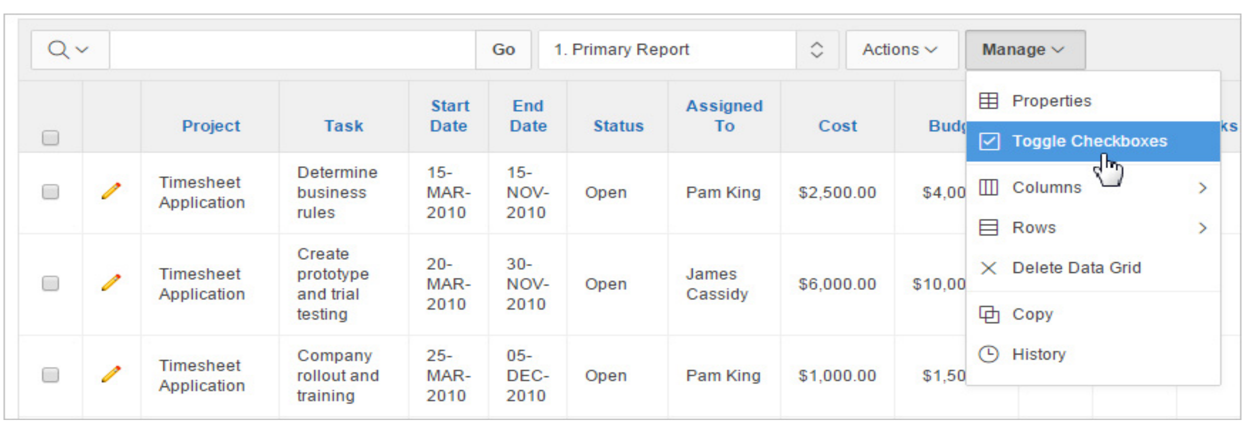
By default, the Report view displays the data grid Name, Alias, Updated, and Updated By columns. The Embed Tag column displays the syntax used to include a link to the report or data grid from within a section of a page.

3. Select a data grid.

   The data grid appears.



Toggling Check Boxes When viewing a data grid, you can enable and disable check boxes. From the Manage menu, select **Toggle Checkboxes**. By selecting this option, check boxes display to the left of each row.



Editing Data Grid Data

To edit data grid data:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Data Grid menu, select a data grid.

   The data grid appears.
3. To add another row:
   a. Click the **Add Row** button.

      A form appears.
   b. Edit the fields provided and click either **Save** or **Save and Add Another**.

Editing Data Grid Columns Manually

To manually edit data grid columns:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Data Grid menu, select a data grid.

   The data grid appears.
3. From the Manage Menu, select **Columns**.

   The following submenu displays:

   - **Add** - Adds a new column. Enables you to define all column properties such as the column name, group, type, value required, display as, list of values, default type, and so on.
   - **Column Properties** - Editable properties include sequence, group, required value, display as, label, format, heading alignment, column alignment, default text, help text, and so on.
   - **List of Values** - Enables you to restrict the values a user can enter. You associate a list of values with a column on Column Properties.
   - **Column Groups** - Create a group and add columns to the group. Enables you to define the group name and provide a description. You can select the columns for the new column group in the Column region by using the arrow keys.
   - **Validation** - Enables you to define a column validation, sequence, validation expression, and error message.
   - **Delete Columns** - Select columns to delete.
4. Select a submenu option and follow the on-screen instructions.

Editing Data Grid Rows Manually

To manually edit data grid rows:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Data Grid menu, select a data grid.

   The data grid appears.
3. From the Manage Menu, select **Rows**.

   The following submenu displays:

- **Add** row - Adds a new row. Enables you to define the project, task, start date, end date, and so on.

  Tip: You can also click the **Add Row** button in the data grid to add a new row.

- **Set Column Values** - Set a predefined value for a column for all rows, selected rows, or empty rows.
- **Replace** - Search and replace row values for all rows or selected rows.
- **Fill** - Fill NULL column values with a column value from the above cell. Select a column from which you want to fill the NULL column value.
- **Delete Rows** - Select to delete all rows, selected rows, or rows with empty columns.

4. Select a submenu option and follow the on-screen instructions.

Editing a Single Data Grid Row

To manually edit a single data grid row:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Data Grid menu, select a data grid.

   The data grid appears.
3. Locate the row to be edited and click the **Edit Row** icon.

   The Add/Edit Row page appears.
4. Edit the appropriate rows and click **Apply Changes**.

   Tip: You can use the Actions region on the Add/Edit Row page to add a new row, add a file, add annotations, add links, add tags, view a history of changes, add a column, edit column properties and group, delete columns, and create a list of values or a validation.

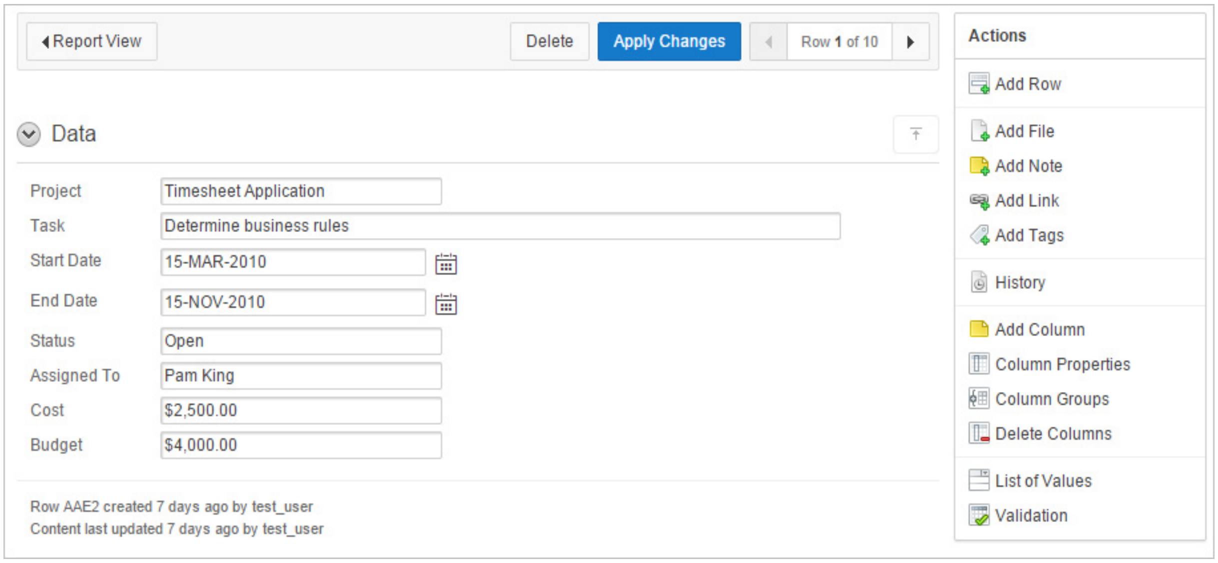
Adding Annotations to a Single Data Grid Row

To add annotations (that is, files, notes, links, and tags) to a single data grid row:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Data Grid menu, select a data grid.

   The data grid appears.
3. Locate the row to be edited and click the **Edit Row** icon.

   The Add/Edit Row page appears.



4. From the Actions region, select one of the following:
   - Add File
   - Add Note
   - Add Link
   - Add Tags
5. Follow the on-screen instructions.

   See Also: "Managing Annotations" on page 2-29

Displaying Annotation Columns in a Data Grid Report

To display annotation columns in a data grid report:

1. Add annotations to the data grid report as described in "Adding Annotations to a Single Data Grid Row" on page 2-17.
2. To include the columns in the data grid report:
   a. View the data grid report.
   b. Click the **Actions** menu and then **Select Columns**.
   c. In the Select Columns region, move the columns (for example, Files, Notes, Links, and Tags) to Display in Report.
   d. Click **Apply**.
3. To ensure that all users can see the columns, developers can save the revised layout as the default report.

   To save a new default report:

   a. Click the **Actions** menu and select **Save Report**.

      The Save Report Region appears.

   b. In Save Report:
      a. **Save** - Select **As Default Report Settings**.
      b. **Name** - Enter a name for the report.

c. **Description** - Enter an optional description.
d. Click **Apply**.

Managing Pseudo Columns in a Data Grid Report

This section describes how to manage pseudo columns in a data grid report.

- About Pseudo Columns in Data Grid Reports
- Displaying Pseudo Columns in a Data Grid Report

About Pseudo Columns in Data Grid Reports Data grids include the following pseudo columns:

- Owner - The username who created the row.
- Row Key - The user-friendly alphanumeric unique key to identify a row.
- Row Order - The unique number to identify a row.
- Created By - The username who created the row.
- Created On - The date when the row was created.

Displaying Pseudo Columns in a Data Grid Report To display pseudo columns in a data grid report:

1. Include the pseudo columns in the data grid report:
   a. View the data grid report.
   b. Click the **Actions** menu and then **Select Columns**.
   c. In the Select Columns region, move the pseudo columns to Display in Report.
   d. Click **Apply**.
2. To save a new default report:
   a. Click the **Actions** menu and select **Save Report**.

      The Save Report Region appears.
   b. In Save Report:
      a. **Save** - Select **As Default Report Settings**.
      b. **Name** - Enter a name for the report.
      c. **Description** - Enter an optional description.
      d. Click **Apply**.

Editing Data Grid Properties

You can change the name, alias, and description of a data grid on the Data Grid Properties page.

To edit data grid properties:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Data Grid menu, select a data grid.

   The data grid appears.
3. From the Manage menu, click **Properties**.

   The Data Grid Properties page appears.

4. Edit the fields provided and click **Apply**.

Creating a Bookmark Link to a Data Grid

To bookmark directly to a data grid or a row, use the following syntax:

```
ws?p=100000:DG_<data grid alias>
ws?p=100000:DG_<data grid alias>::ROW_ID:<data grid row ID>
```

The *`data grid row ID`* is an ID column value of the `APEX$_WS_ROWS` table.

To get a link to a specific data grid row:

1. Run the data grid.
2. Click the Edit Row icon.
3. Note the URL in the browser.

Viewing the Data Grid Change History Log

The View Change History log displays a report of data grid changes. This report lists the row, column name, old value, new value, user who authored the change, and how long ago the change occurred.

To view a history of data grid changes:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Data Grid menu, select a data grid.

   The data grid appears.
3. From the Manage menu, select **History**.

Deleting a Data Grid

To delete a data grid:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Data Grid menu, select a data grid.

   The data grid appears.
3. From the Manage menu, select **Delete Data Grid**.
4. Confirm your selection and click **Delete**.

Adding and Editing Data Content

This section describes how to add and edit data content.

- About Available Data Sources
- Enabling Support for Creating Data Reports
- About Incorporating Data into Websheet Pages

About Available Data Sources

Websheets can include data sources. Once defined, you can incorporate these data sources into Websheet page sections. Websheets can include the following data sources:

- Data Grids - Data grids are highly customizable, editable tabular reports. Data grids enable you to maintain data within the Websheet that is stored within the Oracle Database. See "Managing Data Grids" on page 2-12.
- Reports - Reports are queries defined against tables or views that exist within your Oracle Database. See "Adding Data Reports" on page 2-21.

Enabling Support for Creating Data Reports

To define a data report, your Websheet developer must enable the **Allow SQL** attribute on the Application Properties page. By default, this attribute is disabled.

> **Tip:** Only a Websheet application developer can edit the **Allow SQL** attribute on the Application Properties page. To learn more, see "Editing Websheet Application Properties" in *Oracle Application Express Application Builder User's Guide*.

About Incorporating Data into Websheet Pages

Data grids and data reports can be incorporated into page sections in the following ways:

- Within a data section. See "Adding Data Reports" on page 2-21.
- Within a chart section. See "Adding a Chart Section" on page 2-24.
- Linking to a data grid. See "Linking to a Data Grid" on page 2-27.
- Include a single value or tabular results of queries See "Using SQL and SQLVALUE Syntax" on page 2-28.

Adding Data Reports

Data reports are contributor defined queries on tables or views within the underlying Oracle Database.

> **Tip:** Before you can add a data report, your Websheet application developer must enable the **Allow SQL** attribute on the Websheet properties page. By default, this attribute is disabled. To learn more, see "Editing Websheet Application Properties" in *Oracle Application Express Application Builder User's Guide*.

> **See Also:** "Adding and Editing Data Content" on page 2-20 and "Understanding Markup Syntax" on page 2-26

About Data Reports

Data reports, unlike data grids, are query-only and based on existing data from the Oracle Database. You can specify the table or view name and retrieve all columns or write a SQL statement to retrieve the required data.

Users can alter the layout of report data by selecting columns or by applying filters, highlighting, and sorting. Users can also define breaks, aggregations, group by, computations, and different charts. Additionally, users can create multiple variations of a data grid and save them as named reports, for either public or private viewing. You can also use the data from a data report and include it as a chart or report within any page.

See Also: "Creating Data Sections Based on a Data Grid or Report" on page 2-23 and "Creating Chart Sections" on page 2-24

Creating a Data Report

You can create a data report by either simply entering the table or view name, or by providing a SQL query.

To create a data report:

1. Run the Websheet as described in "Running a Websheet" on page 2-1.
2. From the Report menu, select **New Report**.

   Tip: You can also select **New Report** on the Control Panel.

   The Create Report page appears.
3. For Report Source, identify how to develop your source. Options include:
   a. **Table** - Select **Table** and enter the following:
      – Table or View Name - Select the name of the table or view on which to base the report.
      – Report Name - Enter the name of the report.
      – Report Alias - Enter a report alias. A Report alias is used for linking to the Report within page sections. A Report alias must be unique within an application.
   b. **SQL Query** - Select SQL Query and enter the following:
      – Report Name - Enter the name of the report.
      – Report Alias - Enter a report alias. A Report alias is used for linking to the Report within page sections. A Report alias must be unique within a Websheet.
      – Query - Enter the SQL query that defines your report.
   c. Click **Next**.
4. Confirm your selections and click **Create Report**.

Viewing and Modifying a Data Report

To view or modify a data report:

1. Run the Websheet as described in "Running a Websheet" on page 2-1.
2. From the Report menu, select **View All**.

   The Report page appears.
3. Select the report.

   The report appears.

4. To edit report attributes:
   - From the Manage menu, click **Edit Attributes**.

     The Report Attributes page appears.
   - Edit the attributes and click **Apply Changes**.
5. To edit the report query:
   - From the Manage menu, click **Edit Query**.

     The Report Query page appears.
   - Edit the report query and click **Apply Changes** to save your query.

Deleting a Data Report

To delete a data report:

1. Run the Websheet as described in "Running a Websheet" on page 2-1.
2. From the Report menu, select the report.

   The report appears.
3. Select the report.

   The report appears.
4. From the Manage menu, click **Edit Attributes**.

   The Report Attributes page appears.
5. Click **Delete**.

Creating Data Sections Based on a Data Grid or Report

You can create data sections based upon a data grid or report.

- Adding a Data Section to a Page
- Editing a Data Section

> **See Also:** "Adding and Editing Data Content" on page 2-20

Adding a Data Section to a Page

Once you create a data grid or report, you add it to a page by adding a data section.

> **See Also:** "Managing Data Grids" on page 2-12 and "Adding Data Reports" on page 2-21

To add a data section:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. From the Create menu, select **New Section**.
3. When prompted for the section type, select **Data** and click **Next**.
4. Specify the following:
   a. Data Section Source - Select either **Data Grid** or **Report**.
   b. Display Sequence - Enter the section display sequence.

c. Data Grid/Report - Select the data grid or report to be used to display the data section.

d. Report Settings to Use - For the selected data grid or report, select the report settings to use. This selection enables you to filter the rows and columns you want to display and set the columns to display.

Tip: If you do not have a saved report with the settings you need, create it now before adding the section.

e. Title - Enter the section title.

f. Maximum Row Count - Enter a value to define the maximum number of rows to query.

g. Include - Select whether to add the following:

- Add Row (available if Data Section Source is data grid)
- Edit Row (available if Data Section Source is data grid)
- Search Field

h. Style - Choose a user interface style.

i. Click **Next**.

5. Click **Create Section**.

Editing a Data Section

Once you have added a data report to a page, you can change the section sequence, title, and user interface style.

To edit a data section:

1. Run the Websheet as described in "Running a Websheet" on page 2-1.
2. Click the **Edit** icon that displays in the upper right of the section.

   The Edit Section page appears.
3. Edit the fields provided. See item Help for more details.
4. To save your changes, click **Apply Changes**.

Creating Chart Sections

You can create inline charts based upon a data grid or report.

- Adding a Chart Section
- Editing a Chart Section

See Also: "Adding and Editing Data Content" on page 2-20

Adding a Chart Section

To add a chart section:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. Create a data grid or report. See "Managing Data Grids" on page 2-12 and "Adding Data Reports" on page 2-21.

3. From the Create menu, select **New Section**.
4. When prompted for the section type, select **Chart** and click **Next**.
5. On Select Chart Type:
   a. Select one of the following:
      - **Column**
      - **Horizontal Bar**
      - **Pie**
      - **Line**
   b. Click **Next**.
6. Specify the following:
   a. Chart Source - Select either **Data Grid** or **Report**.
   b. Display Sequence - Enter the section display sequence.
   c. Data Grid/Report - Select the data grid or report to be used to display the chart.
   d. Report Settings to Use - For the selected data grid or report, select the report settings to use. Use this option to filter the rows and columns you want to display.

      If you do not have a saved report with the settings you need, then create it now before adding the section.
   e. Section Title - Enter the section title.
   f. Click **Next**.
7. Specify the following:
   a. Chart Label - Select the column to be used as the Label.

      In Axis Title for Label, enter the title to display on the axis associated with the column selected for Label.
   b. Chart Value - Select the column to be used as the Value. If your function is a COUNT, a Value does not need to be selected.

      In Axis Title for Value, enter the title to display on the axis associated with the column selected for Value.
   c. Function - Select a function to be performed on the column selected for Value.
   d. Sort - Select the chart sort direction.

      Check **Enable 3D** to display the chart in 3D.
   e. Click **Next**.
8. On the summary page, confirm your selections and click **Create Section**.

Editing a Chart Section

To edit a chart section:

1. Run the Websheet application. See "Running a Websheet" on page 2-1.
2. Click the **Edit** icon that displays in the upper right of the section.

   The Edit Section page appears.

3. Edit the fields provided. See item Help for more details.
4. Click **Apply Changes**.

Understanding Markup Syntax

This section describes syntax for adding links to Websheet pages, page sections, external URLs, data grids, or for including SQL or SQLVALUE syntax.

> **Tip:** A Help button displays in the upper right corner of each Websheet page. The Help page, Markup Syntax, lists all the different syntax options described in this section.

- Linking to a Page
- Linking to a Section
- Linking to External URLs
- Linking to a Data Grid
- Using SQL and SQLVALUE Syntax
- Advanced Data Grid Queries Rules

See Also: "Managing Uploaded Files and Images" on page 2-29

Linking to a Page

To include links in page sections to other pages in a Websheet, use the syntax described below. If the page exists, a link displays. If the page does not exist, a link to create the page displays. Note that the use of the `page:` identifier is optional.

Syntax:

[[*page*: *<page alias>* | *<link name>*]]
[[*<page alias>* | *<link name>*]]

Syntax Example:

```
[[page: home]]
[[mypage | My Page]]
```

In Context Example:

```
One of the most colorful fish is the [[ clownfish | Clown fish]].
```

Linking to a Section

To include links to a page section, use the syntax below. If the section exists, a link displays. If the section does not exist, a link to create the section displays. Note that if the section is not prefaced by a page, it is assumed the section is on the current page.

Syntax:

[[section: *<page alias>* . *<page section>* | *<link name>*]]
[[section: *<page section>* | *<link name>*]]

Syntax Example Linking Within the Current Page:

```
[[section: clownfish | Clown Fish]]
```

Syntax Example Linking to a Different Page:

```
[[section: fish.clownfish | Clown Fish]]
```

In Context Example:

```
One of the most colorful fish is the [[ section: clownfish | Clown fish]].
Visit or fish page to see the [[ section: fish . clownfish | Clown fish]], also
known as Nemo.
```

Linking to External URLs

To include links to external URLs in page sections, use the syntax below. Note that the use of the `url:` identifier is optional. To have the link open in a new browser window, use the popup prefix.

Syntax:

```
[[ url: <url> | <link name> ]]
[ popupurl: <url> | <link name> ]]
[[ <url> | <link name> ]]
```

Syntax Example:

```
[[url: http://www.company.com/store | commpanystore]]
[[popupurl: http://www.company.com/store | commpanystore]]
[[http://www.searchengine.com | searchengine]]
[[http://www.searchengine.com ]]
```

In Context Example:

```
You can buy Company software on the [[http://www.company.com/store | Company
Store]] website.
```

Linking to a Data Grid

To include links to data grids within page sections, use the syntax below. You can use these links to view the data grid or to create new data.

> **Tip:** Note that data grid can be one or two words.

Syntax:

```
[[ data grid: <datagrid alias | <link name> ]]
[[ datagrid: <datagrid alias | <link name> ]]
[[ datagrid: <datagrid alias . <saved report name (may not be private)> | <link
name> ]]
```

Syntax Example:

```
[[ data grid: todo list | To Do List ]]
[[ data grid: todo list . open todo items | To Do List ]]
[[ datagrid: todo list | To Do List ]]
```

In Context Example:

```
Please review the [[ data grid: todo list | To Do List ]] and ensure
```

```
your tasks can be accomplished by Friday.
```

Using SQL and SQLVALUE Syntax

By using `SQL` or `SQLVALUE` syntax, you can include single value and tabular results of queries against data grids or tables and views within sections of a page. The `SQLVALUE` tag displays the first column of the first row returned by the SQL query. Use this syntax to embed data within a sentence (for example: There are currently 5 types of cats.). For tabular results, use the `SQL` tag. Using `SQL` tag produces a searchable report. However, you can disable the search option by using the `NOSEARCH` syntax.

When working with data grids, there are a few more options (shown under Syntax) and a few more rules. Basic rules when writing a data grid query include:

- Enclose the data grid name or data grid alias with braces. For example:

  ```
  {Cat Facts}
  ```

- Enclose the data grid column names with double quotation marks. For example:

  ```
  "Type of Cat"
  ```

> **See Also:** "Advanced Data Grid Queries Rules" on page 2-29 to learn more about advanced rules

Syntax for Queries Against Tables and Views:

```
[[sql: <select statement> ]]
[[sql: <select statement | limit="<maximum rows>" nosearch style="<style number>"
]]
[[sqlvalue: <select statement> ]]
```

Syntax for Data Grid Queries:

```
[[sql: <select statement> ]]
[[sql: <select statement | limit="<maximum rows>" nosearch style="<style number>"
edit_row add_row show_sql ]]
[[sqlvalue: <select statement> ]]
[[sqlvalue: <select statement> | show_sql ]]
```

In Context SQL Tag Syntax Examples:

```
[[sql: select ename "Employee Name", sal "Salary" from emp order by sal desc |
limit="10" style="2"]].
[[sql: select "Type of Cat",
              "Estimated Population",
              "Largest Threats",
              "Top Speed",
              "Scientific Name",
              "IUCN Status",
              "Weight",
              "Study Date"
       from {Cat Facts} | add_row edit_row ]]
```

In Context SQLVALUE Tag Syntax Examples:

```
We have [[sqlvalue: select count(*) from emp]] employees in our database,
[[sqlvalue: select count(*) from emp where deptno=10 ]] work in department 10.
We are currently tracking [[sqlvalue: select count(*) from {Cat Facts} ]]
types of cats.
```

Advanced Data Grid Queries Rules

Advanced data grid query rules include:

- The query must reference the data grid only once to include an edit or add row link (that is, you cannot join the data grid to itself within the query).
- The first column must be the primary key of the data grid to include an edit row link (that is, the column that uniquely identifies the row of data). If the "edit_row" option is included and the query has a single select statement, the primary key column is included automatically. If the query contains multiple select statements, you can use the `"APXWS_DATA_GRID_PK"` substitution (always enclosed with double quotation marks) as the first column in the `SELECT` statement to include the primary key to include an edit row link.
- Report column names are the column name from the data grid, but can be modified using standard SQL column aliasing syntax. For example, the following displays the data from the `Minimum Number` column but the heading displays as `Min`:

  ```
  select "Minimum Number" "Min" from ...
  ```

- If a column name is longer than 30 characters, you only include the first 30 characters as the name. For example, use:

  ```
  "% of Estimated Lions per Regio"
  ```

  Instead of:

  ```
  "% of Estimated Lions per Region"
  ```

- To display the query that is executed, include the "`show_sql`" option. By including this option, the query displays above the included report. Although this is a good approach for debugging, Oracle does not recommend "`show_sql`" for a production application.

Managing Annotations

You can add commentary and additional details to a web page by adding annotations. Annotations can be in the form of uploaded files, notes, links, and tags. Annotations can be added to both pages and data grid records.

- Managing Uploaded Files and Images
- Adding Tags
- Adding Notes
- Viewing and Deleting Annotations

See Also: "Adding Annotations to a Single Data Grid Row" on page 2-17

Managing Uploaded Files and Images

You can upload files and images to a Websheet page using the Files region. Once uploaded, you can display uploaded images within a page section or embed download links to files.

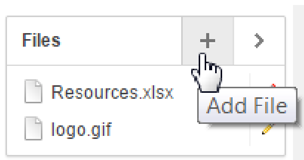
- Uploading Files and Images
- Including a Download Link in a Page Section

- Displaying an Uploaded Image Inline
- Editing or Deleting Uploaded Files

Uploading Files and Images

To upload files and images to a Websheet:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. Under Files on the right side of the page, click the **Add File** icon.



3. On the Add File page:
   a. File - Browse to locate the file to upload. Once uploaded, the file is associated with the current page. You can reference an uploaded file in any page using the image or file syntax. See "Displaying an Uploaded Image Inline" on page 2-30 or online Help, Markup Syntax.
   b. Alias - A file alias enables you to embed download links or image links within page sections. A file alias must be unique within an application.
   c. Description - Enter descriptive text to describe the file.
4. Click **Add File**.

Including a Download Link in a Page Section

You can embed a download link within a page section to uploaded files using the following syntax.

Syntax:

```
[[ file: < file name > | < link name > ]]
[[ file: < file alias > | < link name > ]]
```

Syntax Examples:

```
[[file: myfile ]]
[[file: myfile.xls ]]
[[file: myfile | My File ]]
```

File Markup Example:

```
This [[file: parts01.xls | spreadsheet ]] documents our part numbers.
```

Displaying an Uploaded Image Inline

After you upload an image, you can display it within any page section of an application by embedding a download link using the following syntax. You can reference an uploaded image using the image name or image alias.

Images defined for the current page are used before images associated with other pages. If image names are ambiguous, the most recently created image displays.

Syntax:

```
[[ image: < file name > | < properties > ]]
[[ image: < file alias > | < properties > ]]
```

Syntax Examples:

```
[[image: myimage ]]
[[image: theimagename.jpg ]]
[[image: myimage | width="600" alt="my image" ]]
```

Example:

```
This diagram [[image: diagram1]] illustrates the work flow.
```

Editing or Deleting Uploaded Files

To edit details or delete uploaded files:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. In the Files region, click the **Edit File** icon.

   The Details page appears.
3. To edit file details:
   a. Edit the fields provided. See item Help for more details.
   b. To accept your changes, click **Apply Changes**.
4. To delete a file:
   a. Click **Delete**.
   b. To accept your changes, click **OK**.

Adding Tags

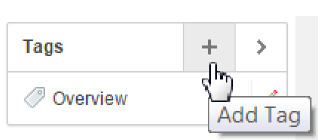
Tags facilitate keyword searching within a Websheet.

- Adding Tags
- Editing Existing Tags
- Deleting Existing Tags

Adding Tags

To add tags to a Websheet page:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. Under Tags on the right side of the page, click the **Add Tag** icon.



3. Enter tags in the field provided. Separate multiple tags with a comma.
4. Click **Apply Changes**.

Editing Existing Tags

To edit existing tags:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. In the Tags region, click the **Edit Tag** icon.

   The Details page appears.
3. Edit the tags and click **Apply Changes**.

Deleting Existing Tags

To delete existing tags:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. In the Tags region, click the **View Tag** icon.

   The Tags page appears.
3. Select the tags that you want to delete and click **Delete Checked**.

Adding Notes

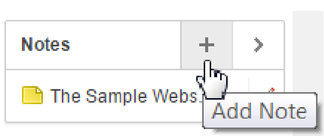
This section describes how to add, edit, and delete notes. You can use notes to record user comments.

- Adding Notes
- Editing or Deleting Existing Notes

Adding Notes

To add notes to a Websheet page:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. Under Notes on the right side of the page, click the **Add Note** icon.



3. Enter text in the field provided.
4. Click **Add Note**.

Editing or Deleting Existing Notes

To edit or delete existing notes:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. In the Notes region, click the **Edit Note** icon.
3. To edit file details:
   a. Edit the fields provided. See item Help for more details.
   b. To accept your changes, click **Apply Changes**.
4. To delete a note, click **Delete**.

Viewing and Deleting Annotations

You can view and delete all Websheet annotations on the Annotations page. Annotations include uploaded files, notes, links, and tags that were either added to a Websheet page or to a specific row in a data grid.

- Accessing the Annotations Page
- Deleting Annotations

Accessing the Annotations Page

To access the Annotations page:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. From the View menu, select **Annotations**.

   The Annotations page appears.

   The Annotations page displays as an interactive report. To learn more about interactive reports, see "Using Interactive Reports" on page 3-1 and "Customizing an Interactive Report Using the Actions Menu" on page 3-5.
3. To view specific type of annotation, click the **Files**, **Notes**, **Links**, **Tags**, or **Tag Cloud** tabs.

Deleting Annotations

To delete uploaded files, notes, link, or tags:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. From the View menu, select **Annotations**.

   The Annotations page appears.
3. Select an annotation type by clicking the appropriate tab at the top of the page.
4. If not selected, click the **View Report** icon.
5. Click the appropriate tab: **Files**, **Notes**, **Links**, **Tags**, or **Tag Cloud**.
6. Select the annotations to delete.
7. Click **Delete Checked**.

Managing Websheet Applications

This section describes how to change your Websheet password, email a Websheet to another user, and print a Websheet.

- Changing Your Websheet Password
- Emailing a Websheet Page
- Printing a Websheet Page

Changing Your Websheet Password

To change your Websheet password:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. From the Administration menu, select **Change My Password**.

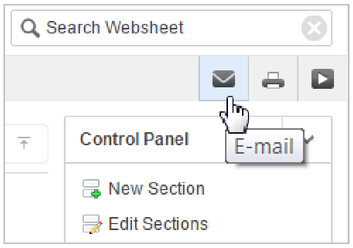
   The Change Password page appears.

3. Follow the on-screen instructions and click **Change Password**.

Emailing a Websheet Page

To email a Websheet page:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. Locate the page you want to email.
3. Click the **Email** icon above the Control Panel.



4. On the Email Page:
   a. To - Enter the target email address.
   b. Subject - Enter a description of this email.
   c. Body - Enter the email content you want to include along with the Websheet page link.
5. Click **Send**.

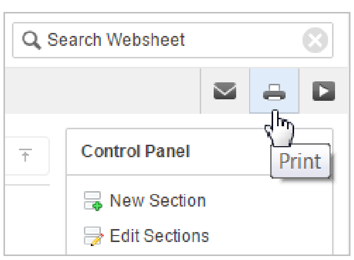
An email link to the currently selected page is automatically included in your email message.

> **See Also:** "Configuring Email" in *Oracle Application Express Administration Guide*

Printing a Websheet Page

To print a Websheet in printer-friendly mode:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. Click the **Print** icon above the Control Panel.



   The page displays in printer-friendly mode.
3. Print the page.

Viewing Websheets

Use the options on the View menu to access presentation mode, view a page directory, access a page history, and view an application directory.

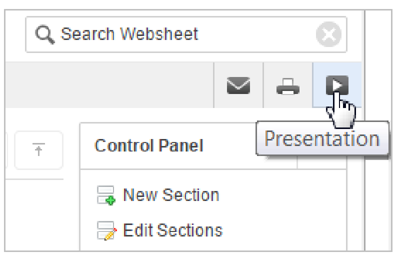
- About Presentation Mode
- Viewing the Page Directory
- Viewing Page History
- Viewing the Websheet Directory

> **See Also:** "Managing Annotations" on page 2-29 and "Managing Data Grids" on page 2-12

About Presentation Mode

Presentation mode enables a single Websheet page to be viewed as a presentation. Each page section displays one at a time as a slide. Users can navigate between sections by using the right and left arrow keys, by using the right and left arrow controls on the top right of the page, or by entering a section number to quickly jump to a specific section.

To view a Websheet in presentation mode, click the **Presentation** icon on the far right side of the page.



In Presentation mode, each page section displays as a separate page.

Use the navigation bar on the upper right of the page to scroll forward and backward from section to section. To exit Presentation mode, click the **Exit** icon or press **ESC**.

Viewing the Page Directory

The page history report shows old and new section content up to 4000 bytes. If the content you want to view exceeds the length of the report display, you can also query `APEX$_WS_WEBPG_SECTION_HISTORY` in your workspace schema.

To access the Page Directory:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. From the View menu, select **Page Directory**.

   The Page Directory displays as an interactive report. To learn more about interactive reports and using the Actions menu, see "Using Interactive Reports" on page 3-1 and "Customizing an Interactive Report Using the Actions Menu" on page 3-5.

   By default, the Page Directory displays in icon view.

One page in each Websheet is designated as the home page. The home page is the starting page that displays when you run the Websheet. In Icon view, the home page displays as a page with outline of home.

3. To view the page as a report, click the **View Report** icon.

   By default, Report view displays the following columns: Name, Doc Type, Created, Created By, Updated On, Updated By, Parent Page, and Grand Parent Page.

Viewing Page History

The page history report shows old and new section content up to 4000 bytes. If the content you want to view exceeds the length of the report display, you can also query `APEX$_WS_WEBPG_SECTION_HISTORY` in your workspace schema.

To view the Page History report.

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. Select a page.
3. From the View menu, select **Page History**.

   The Page History displays as an interactive report.

   A Search bar displays at the top of the page. Available controls include:

   - **Select columns to search** - Resembles a magnifying glass. Click this icon to narrow your search. To search all columns, select **All Columns**.
   - **Text area** - Enter case insensitive search criteria (wildcard characters are implied) to search for a page group by name and then click **Go**.
   - **Go button** - Executes a search or applies a filter.
   - **View Icons** - Displays each Websheet as a large icon.
   - **View Report** - Displays each Websheet as a line in a report.
   - **Actions menu** - Use the Actions menu to customize the report view. See "Customizing an Interactive Report Using the Actions Menu" on page 3-5.
4. To view changes in a Calendar format, click **Calendar**.

Viewing the Websheet Directory

Use the Websheet Directory to navigate to another Websheet application.

To access the Websheet Directory:

1. Log in to and run the Websheet. See "Running a Websheet" on page 2-1.
2. From the View menu, select **Websheet Directory**.

   A Search bar displays at the top of the page. Available controls include:

   - **Select columns to search** - Resembles a magnifying glass. Click this icon to narrow your search. To search all columns, select **All Columns**.
   - **Text area** - Enter case insensitive search criteria (wildcard characters are implied) to search for a page group by name and then click **Go**.
   - **Go button** - Executes a search or applies a filter.
   - **View Icons** - Displays each Websheet as a large icon.

- **View Report** - Displays each Websheet as a line in a report.
- **Actions menu** - Use the Actions menu to customize the report view. See "Customizing an Interactive Report Using the Actions Menu" on page 3-5.

3. To view a Websheet:
   - In Icon view, click the appropriate icon.
   - In Report view, click the **Run** icon in the Actions column.

3

Using Interactive Reports

An Oracle Application Express database application is a collection of pages linked together using tabs, buttons, or hypertext links. This section describes how to use Oracle Application Express interactive reports.

- What is an Interactive Report?
- Running an Interactive Report
- Using the Column Heading Menu
- Using Interactive Report Filters
- Using the Search Bar
- Customizing an Interactive Report Using the Actions Menu

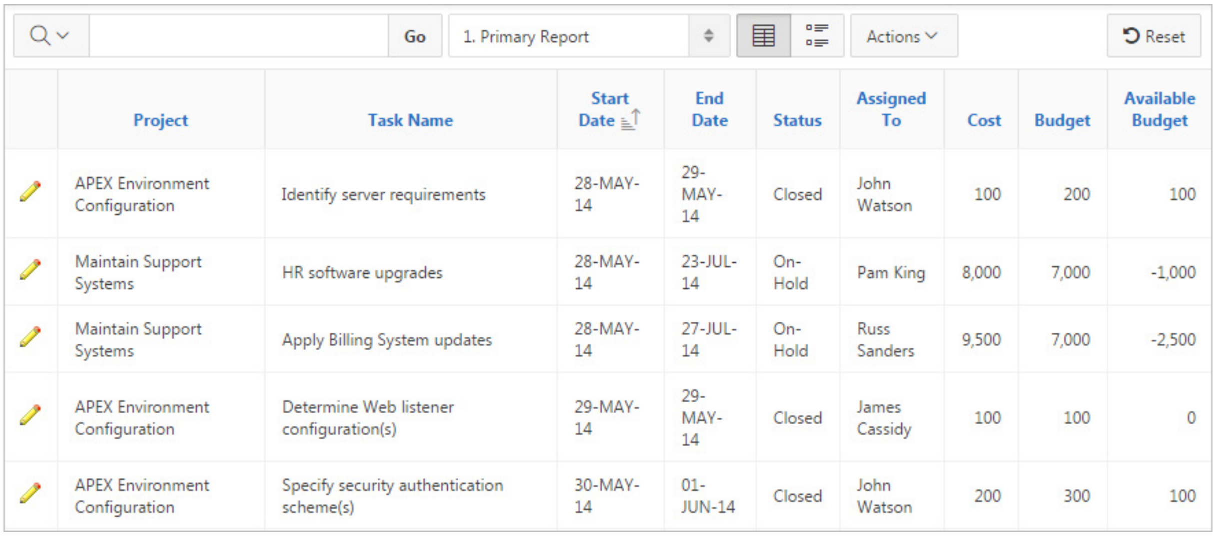
See Also: "Developing Reports" in *Oracle Application Express Application Builder User's Guide*

What is an Interactive Report?

Oracle Application Express 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 the user 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.



Go | 1. Primary Report | Actions | Reset

	Project	Task Name	Start Date	End Date	Status	Assigned To	Cost	Budget	Available Budget
	APEX Environment Configuration	Identify server requirements	28-MAY-14	29-MAY-14	Closed	John Watson	100	200	100
	Maintain Support Systems	HR software upgrades	28-MAY-14	23-JUL-14	On-Hold	Pam King	8,000	7,000	-1,000
	Maintain Support Systems	Apply Billing System updates	28-MAY-14	27-JUL-14	On-Hold	Russ Sanders	9,500	7,000	-2,500
	APEX Environment Configuration	Determine Web listener configuration(s)	29-MAY-14	29-MAY-14	Closed	James Cassidy	100	100	0
	APEX Environment Configuration	Specify security authentication scheme(s)	30-MAY-14	01-JUN-14	Closed	John Watson	200	300	100

Interactive reports enable end users to create highly customized reports. Users can alter the report layout by hiding or exposing specific columns and applying filters, highlighting, and sorting. They 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.

> **See Also:** "Utilizing Packaged Applications" in *Oracle Application Express Application Builder User's Guide*

Running an Interactive Report

An interactive report is contained in a page within a database application. To run an interactive report you must go to the database application URL, log in using your account credentials (that is, your username and password), and then navigate to the report page.

To run an interactive report:

1. Click the supplied URL, or enter it in your browser's Address field.

   A Login page appears.

2. On the Login page:

   a. Username - Enter your username.

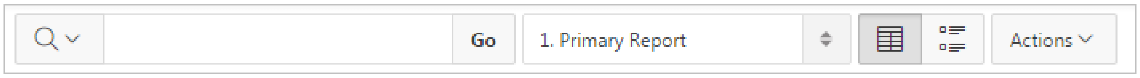
   b. Password - Enter your password.

   c. Click **Log In**.

   > **Tip:** The language that displays differs depending upon who creates the application. For Oracle-supplied applications, including packaged applications and the Oracle Application Express development environment, **Sign In/Sign out** displays. For applications you or your developers create, **Log In/Log Out** displays.

   The interactive report appears.

Using the Search Bar



A search bar displays at the top of most interactive reports and may include 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" on page 3-3.
- 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" on page 3-19.
- 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 be 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" on page 3-5.

> **Tip:** Developers can customize what displays on the Search bar. To learn more, see "Customizing the Interactive Search Bar" in *Oracle Application Express Application Builder User's Guide*.

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.

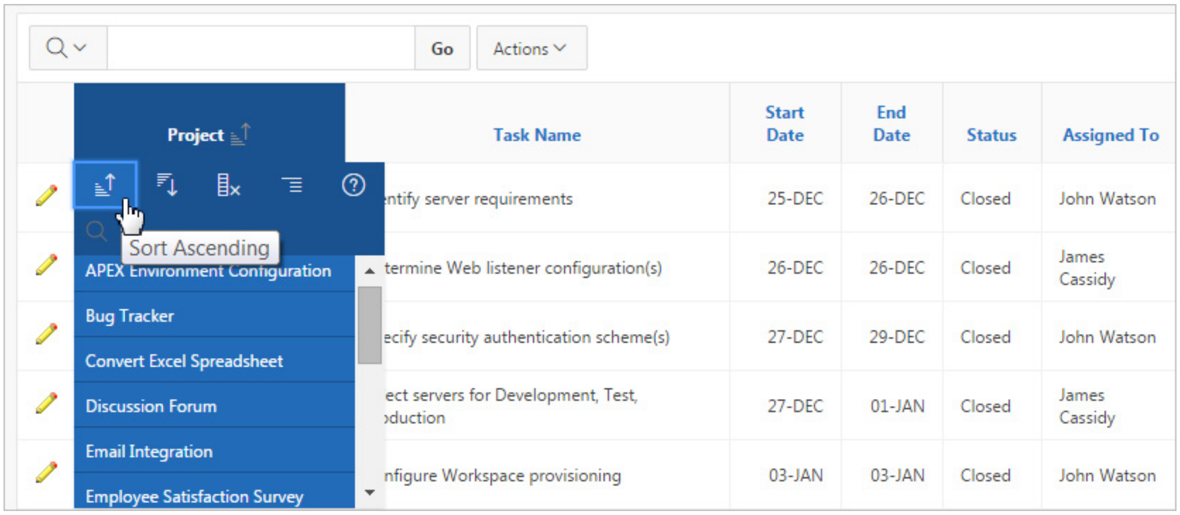
To search specific columns:

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" on page 3-7

Using the Column Heading Menu

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

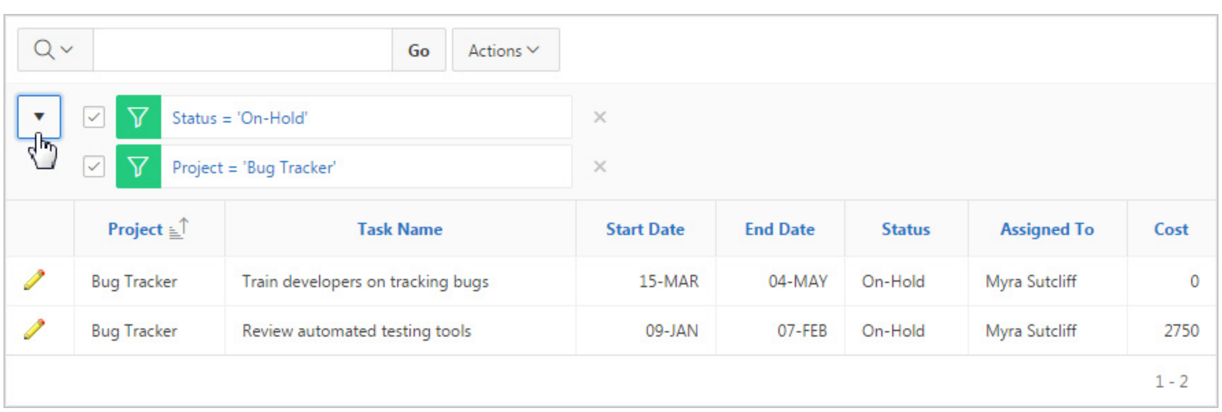


Column Heading menu options include:

- 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" on page 3-9.
- 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.

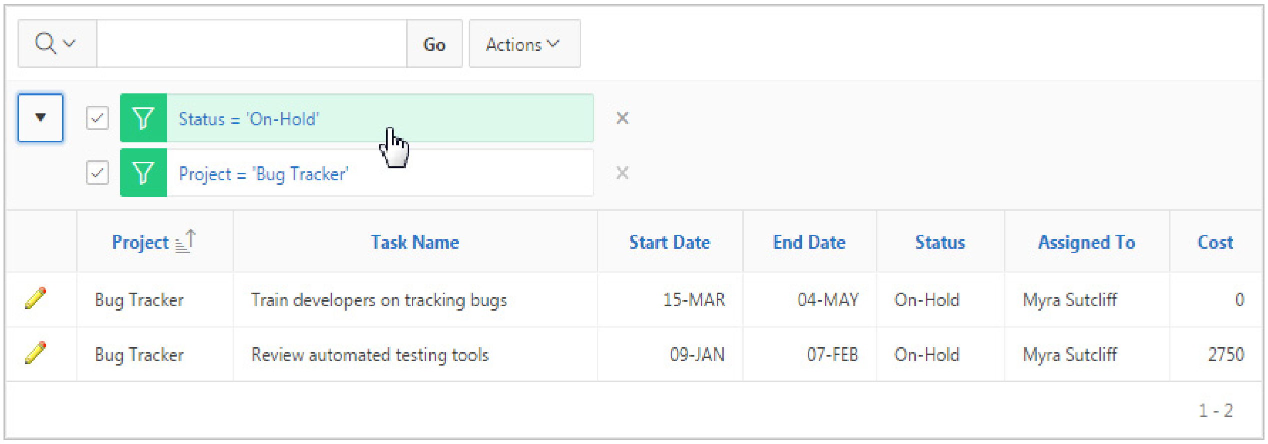
Using Interactive Report Filters

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.



Customizing an Interactive Report Using the Actions Menu

You can customize an interactive report by selecting options on the Actions menu.

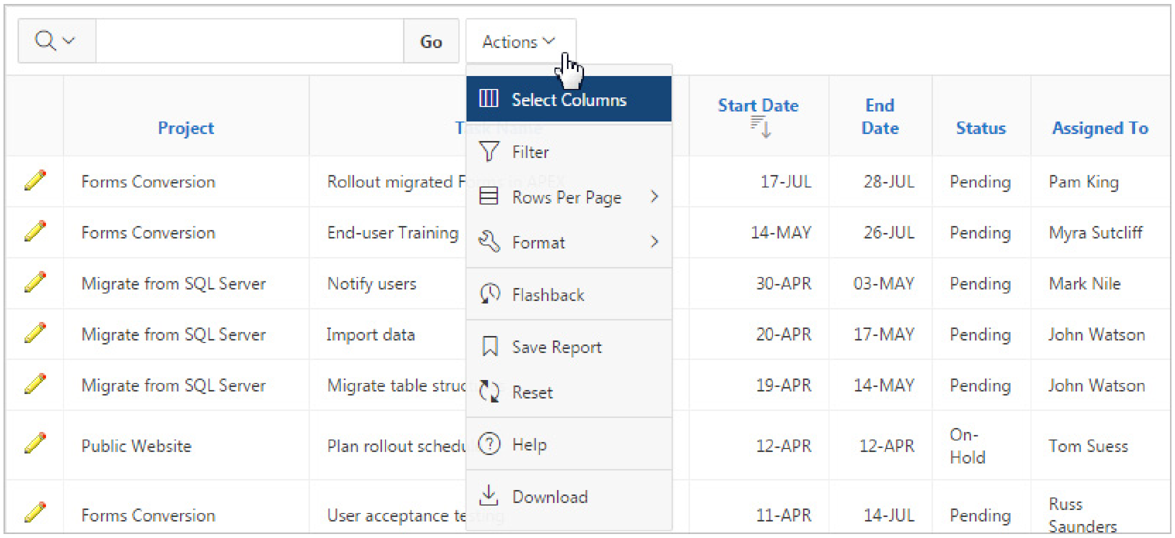
> **Tip:** Not all options described in this section are available on every Actions menu. Developers can customize what options appear. To learn more, see "Customizing the Interactive Search Bar" in *Oracle Application Express Application Builder User's Guide*.

- Actions Menu
- Selecting Columns to Display
- Adding a Filter
- Specifying Rows Per Page
- Selecting Column Sort Order
- Creating a Control Break
- Adding Highlighting
- Computing Columns
- Defining an Aggregation Against a Column
- Creating a Chart from the Actions Menu
- Grouping Columns
- Creating Pivot Report
- Executing a Flashback Query
- Saving an Interactive Report
- Resetting a Report

- Downloading a Report
- Subscribing to Report Updates by Email

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.



The Actions menu contains the following options:

- **Select Columns** specifies which columns to display and in what order. See "Selecting Columns to Display" on page 3-7.
- **Filter** focuses the report by adding or modifying the filter clause on the query. See "Adding a Filter" on page 3-7.
- **Rows Per Page** determines how many rows display in the current report. See "Specifying Rows Per Page" on page 3-9.
- **Format** contains the following submenu:
  - **Sort** - Changes the columns to sort on and determines whether to sort in ascending or descending order. See "Selecting Column Sort Order" on page 3-9.
  - **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" on page 3-9.
  - **Highlight** - Defines a filter that highlights the rows that meet the filter criteria. See "Adding Highlighting" on page 3-10.
  - **Compute** - Enables users to add computed columns to a report. See "Computing Columns" on page 3-12.
  - **Aggregate** - Enables users to perform mathematical computations against a column. See "Defining an Aggregation Against a Column" on page 3-13.
  - **Chart** - Displays the report data as a chart. See "Creating a Chart from the Actions Menu" on page 3-14.
  - **Group By** - Enables users to group the result set by one or more columns and perform mathematical computations against columns. See "Grouping

Columns" on page 3-15.

– **Pivot** - Enables users to define a Pivot report. See "Creating Pivot Report" on page 17.

- **Flashback** - Enables users to view the data as it existed at a previous point in time. See "Executing a Flashback Query" on page 3-18.
- **Save Report** - Saves the interactive report. Depending upon their user credentials, users can save different types of reports. See "Saving an Interactive Report" on page 3-19.
- **Reset** - Resets the report back to the default report settings. See "Resetting a Report" on page 3-21.
- **Help** - Provides descriptions of how to customize interactive reports.
- **Download** - Downloads a report. Available download formats depend upon your installation and report definition. See "Downloading a Report" on page 3-22.
- **Subscription** - Send an interactive report by email. See "Subscribing to Report Updates by Email" on page 3-22.

Selecting Columns to Display

To customize a report to include specific columns, select **Select Columns** on the Actions menu.

To use the Select Columns option:

1. Click the **Actions** menu and select **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" on page 3-21

Adding a Filter

This section describes how to create row and column filters on an interactive report.

- About Creating Filters
- Adding, Editing, and Removing a Column Filter
- Adding, Editing, and Removing a Row Filter

About Creating Filters

You can create a filter on an interactive report by adding or modifying the `WHERE` clause on the query. You can create two types of filters:

- **Column** - Creates a custom column filter. Select a column, select a standard Oracle operator (`=`, `!=`, `not in`, `between`), and enter an expression to compare against.

Expressions are case sensitive. Use the percent sign (`%`) as a wildcard. Note that the selected column does not need to be one that currently displays. For example:

```
STATE_NAME like A%
```

- **Row** - Creates a custom row filter. This filter creates a complex `WHERE` clauses using column aliases and any Oracle functions or operators. For example:

  ```
  G = 'VA' or G = 'CT'
  ```

  Where `G` is the alias for `CUSTOMER_STATE`.

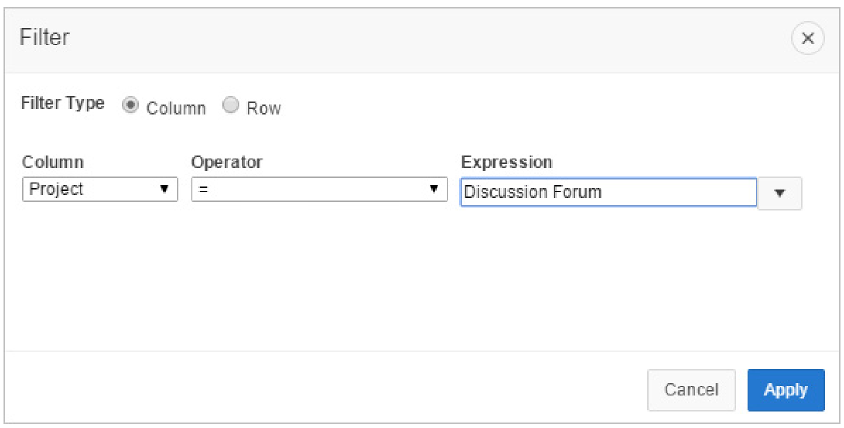
Adding, Editing, and Removing a Column Filter

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.

4. To revise the filter:
   a. Click the filter name (in this example, `Project = 'Discussion Forum'`).
   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**.

Adding, Editing, and Removing a Row Filter

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 $5000.

   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**.

Specifying Rows Per Page

You can specify the number of rows that display on a page by selecting **Rows Per Page** on the Actions menu.

To specify the number of rows that display:

1. Click the **Actions** menu and select **Rows Per Page**.

2. From the submenu, select a number.

Selecting Column Sort Order

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

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:

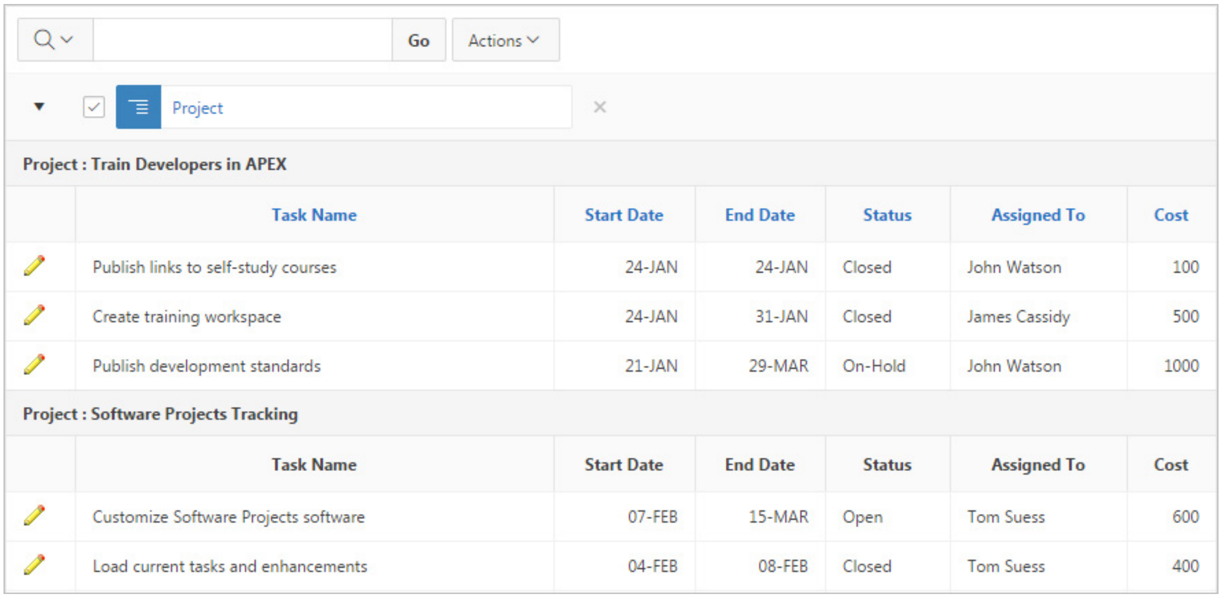
1. Click the **Actions** menu and select **Format** and then **Control Break**.

   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**.

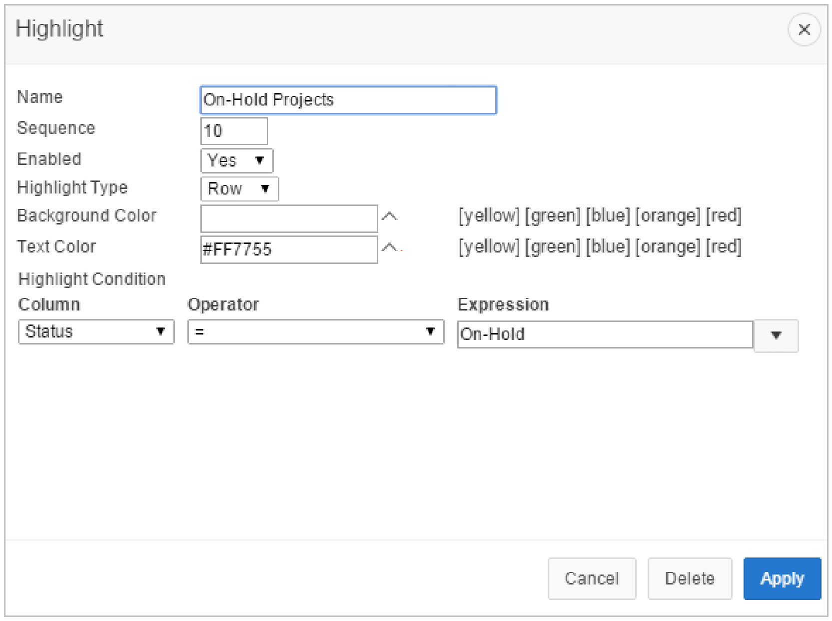
Adding Highlighting

You can customize the display to highlight specific rows in a report by selecting **Highlight** on the Actions, Format submenu.

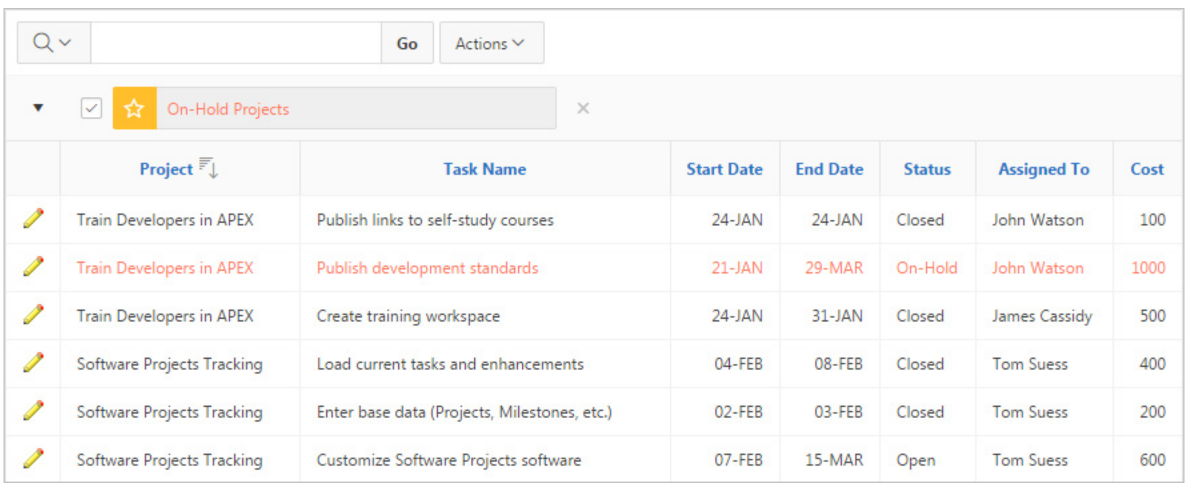
To add highlighting:

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

   The Highlight dialog appears.
2. Edit the following information:
   a. Name - Enter a name that describes this filter.
   b. Sequence - Enter a numeric value to identify the sequence in which highlighting rules are evaluated.
   c. Enabled - Select **Yes**.
   d. Highlight Type - Select **Cell** or **Row**.
   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 expression.



h. Click **Apply**.



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 **yellow**.

b. Text Color - Select **red**.

c. Click **Apply**.

4. To disable the highlight, select the **Enable/Disable** check box.

5. To delete the highlight, click **Remove Highlight**.

Computing Columns

You can add computations to columns by selecting **Compute** from the Actions, Format submenu. These computations can be mathematical computations (for example, `NBR_HOURS/24`) or standard Oracle functions applied to existing columns.

To create a computation:

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

   The Compute dialog appears.

2. In the Compute dialog:

   a. Computation - Select **New Computation**.

   b. Column Heading - Enter the name of the new column to be created.

   c. Format Mask - Select an Oracle format mask to be applied to the new column. (for example, `$5,234.10`).

   d. Create the computation:

      – Columns - Select a column or alias.

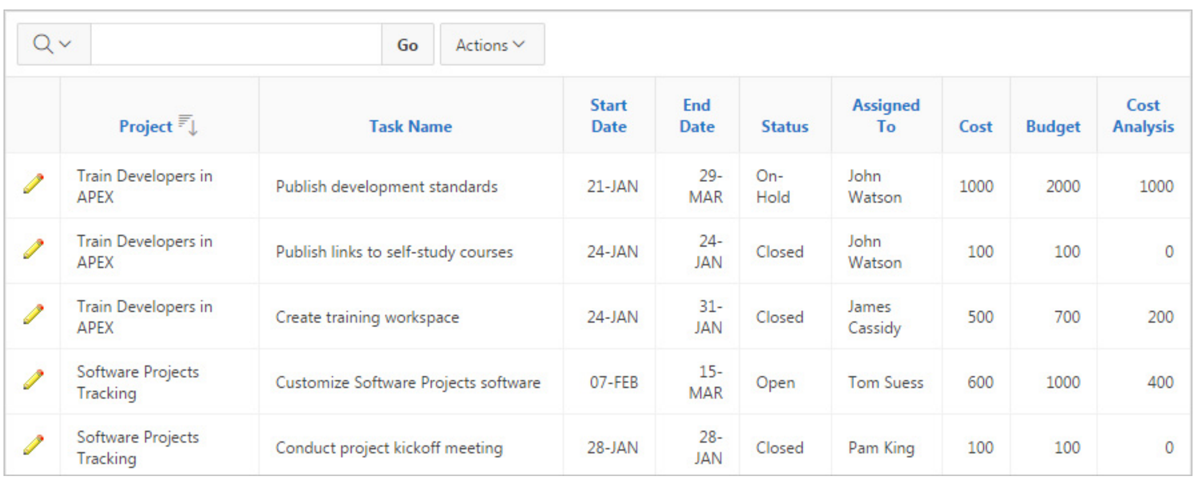
      – Keypad - Select a shortcut for commonly used keys.

      – 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.

3. Click **Apply**.

   The revised report appears containing a new Cost Analysis column.



	Project	Task Name	Start Date	End Date	Status	Assigned To	Cost	Budget	Cost Analysis
	Train Developers in APEX	Publish development standards	21-JAN	29-MAR	On-Hold	John Watson	1000	2000	1000
	Train Developers in APEX	Publish links to self-study courses	24-JAN	24-JAN	Closed	John Watson	100	100	0
	Train Developers in APEX	Create training workspace	24-JAN	31-JAN	Closed	James Cassidy	500	700	200
	Software Projects Tracking	Customize Software Projects software	07-FEB	15-MAR	Open	Tom Suess	600	1000	400
	Software Projects Tracking	Conduct project kickoff meeting	28-JAN	28-JAN	Closed	Pam King	100	100	0

Deleting a Computation

To delete a computation:

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

   The Compute dialog appears.

2. From Computation, select the computation.

   The computation appears.

3. Click **Delete**.

Defining an Aggregation Against a Column

This section describes how to define an aggregation against a column by selecting Aggregate from the Actions, Format menu. Aggregates are displayed after each control break and at the end of the report within the column for which they are defined.

- Creating a Aggregation Against a Column
- Removing a Column Aggregation

Creating a Aggregation Against a Column

To create an aggregation against a column:

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

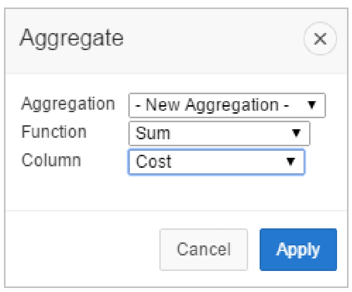
   The Aggregate dialog appears.

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**.

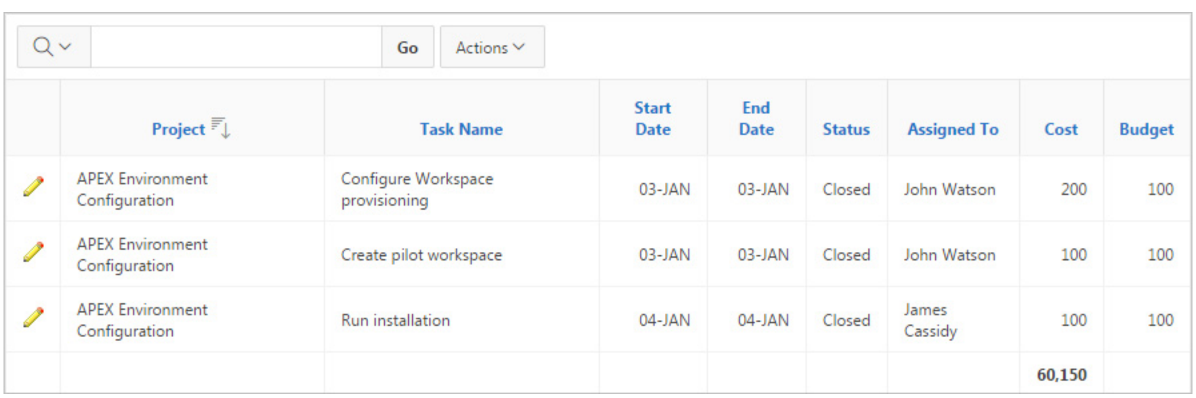
   c. Column - Select a column.



   This example creates a sum of the Cost column.

   d. Click **Apply**.

   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.

Removing a Column Aggregation

To remove column aggregation:

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

   The Aggregate dialog appears.

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

Creating a Chart from the Actions Menu

You can create a chart by selecting **Actions**, **Format**, and **Chart**. You can create one chart for each interactive report. Once defined, you can switch between the chart and report views using links on the Search bar.

- Creating a Chart
- Editing a Chart
- Deleting a Chart

Creating a Chart

To create a chart:

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

   The Chart dialog appears.

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

   The following attributes are for bar charts:

   a. Chart Type - Select the type of chart you want to create (horizontal bar, vertical bar, pie, or line.).
   b. Label - Select the column to be used as the label.
   c. Axis for 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. 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.

Editing a Chart

To edit a chart:

1. While viewing a report:

   a. Click the **Actions** menu and select **Format** and then **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**.

Deleting a Chart

To delete a chart:

1. While viewing a report:

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

      The Chart dialog appears.

   b. Click **Delete**.

2. While viewing a chart:

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

   a. Click **Edit Chart**.

   b. Click **Delete**.

Grouping Columns

Group By enables users to group the result set by one or more columns and perform mathematical computations against the columns. Once users define the group by, they can switch between the group by and report views using the View Icon on the Search bar.

- Creating a Group By
- Editing a Group By
- Selecting a Group By Sort Order
- Deleting a Group By

Creating a Group By

To use Group By:

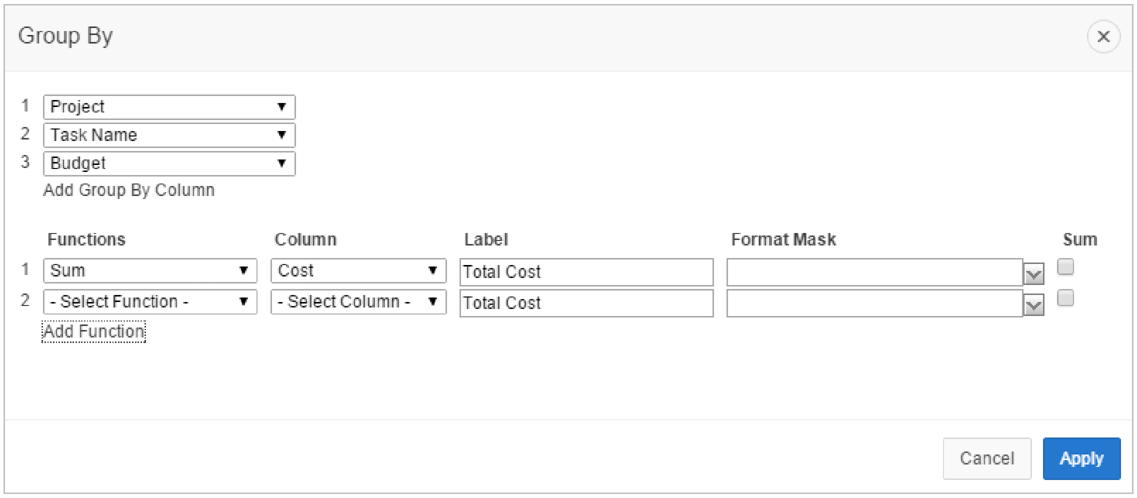
1. Click the **Actions** menu and select **Format** and then **Group By**.

   The Group By dialog appears.

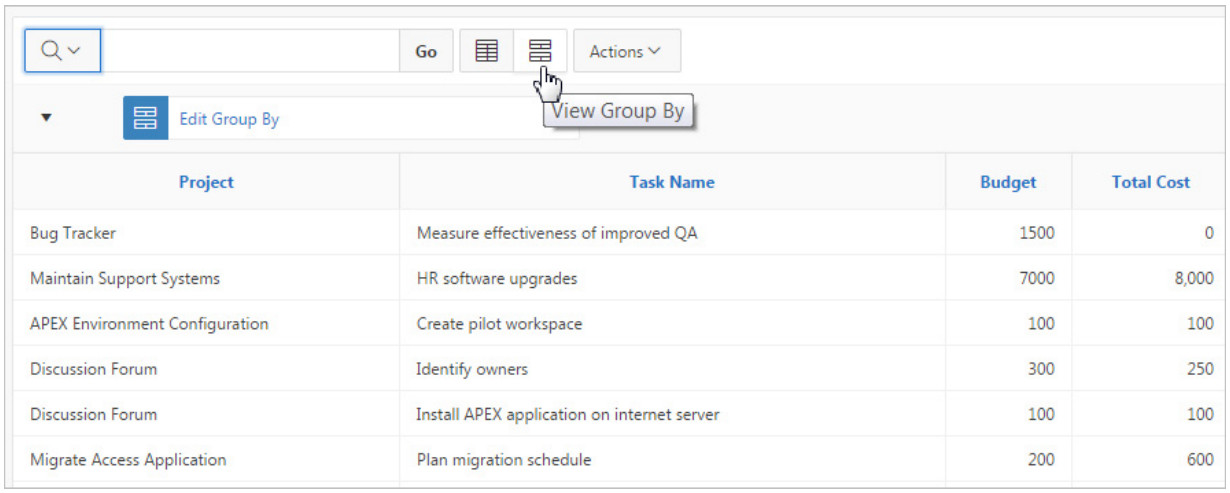
2. In the Group by dialog:

   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** check box.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.

Editing a Group By

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**.

Selecting a Group By Sort Order

You can 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 Format 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. See "Creating a Group By" on page 3-15.
2. Click the **Actions** menu and select **Format** and then **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**.

Deleting a Group By

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.

Creating Pivot Report

Pivot report transposes rows into columns to generate results in a crosstab format. End users 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
- Editing a Pivot Report
- Deleting a Pivot Report

Creating a Pivot Report

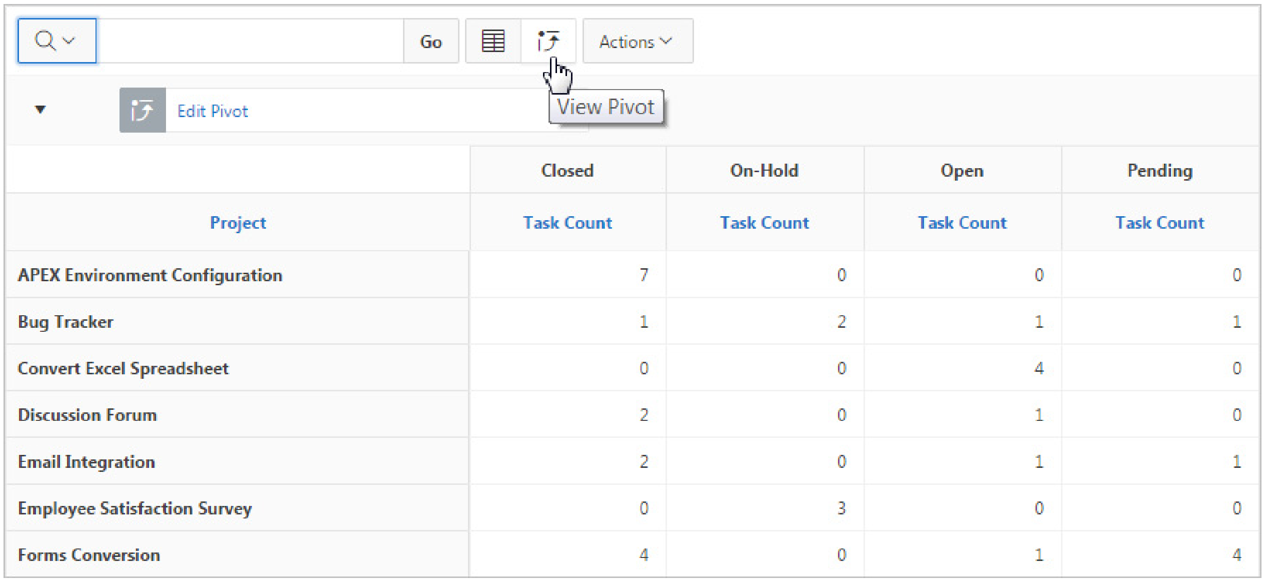
To create a pivot report:

1. Click the **Actions** menu and select **Format** and then **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. Computation:
      – Select a function, column, label, and format mask.
      – To create a sum, click the **Sum** check box (optional).

d. Click **Apply**.

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



	Closed	On-Hold	Open	Pending
Project	Task Count	Task Count	Task Count	Task Count
APEX Environment Configuration	7	0	0	0
Bug Tracker	1	2	1	1
Convert Excel Spreadsheet	0	0	4	0
Discussion Forum	2	0	1	0
Email Integration	2	0	1	1
Employee Satisfaction Survey	0	3	0	0
Forms Conversion	4	0	1	4

Editing a Pivot Report

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**.

Deleting a Pivot Report

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.

Executing a Flashback Query

You can execute a flashback query by selecting **Flashback** from the Actions menu. A flashback query enables you to view the data as it existed at a previous point in time. 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
- Editing a Flashback Query

- Deleting a Flashback Query

Creating a Flashback Query

To execute a flashback query:

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

Editing a Flashback Query

To edit a flashback query:

1. Click **flashback query** filter.

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

Deleting a Flashback Query

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.

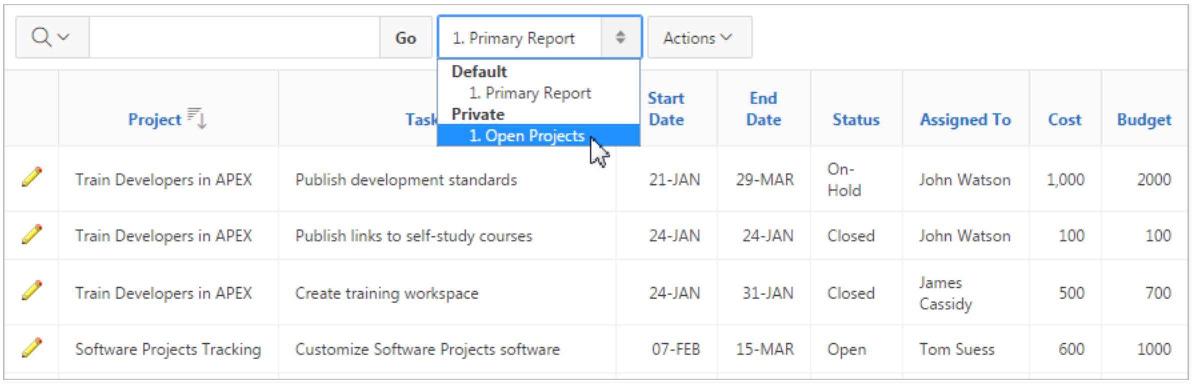
Saving an Interactive Report

This section explains the ways in which end users can save an interactive report. As an end user, you can save a private or public interactive report. Note, however, that only the user who creates a private report can view, save, rename, or delete it.

- About the Report List
- About Configuration Dependencies
- Saving a Public or Private Interactive Report
- Renaming a Public or Private Interactive Report
- Deleting a Public or Private Interactive Report

About the Report List

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.

About Configuration Dependencies

The ability to save an interactive report is configurable by the application developer who creates the interactive report. To learn more, see "*Customizing the Search Bar*" and "*Saving an Interactive Report*" in *Oracle Application Express Application Builder User's Guide*.

Saving a Public or Private Interactive Report

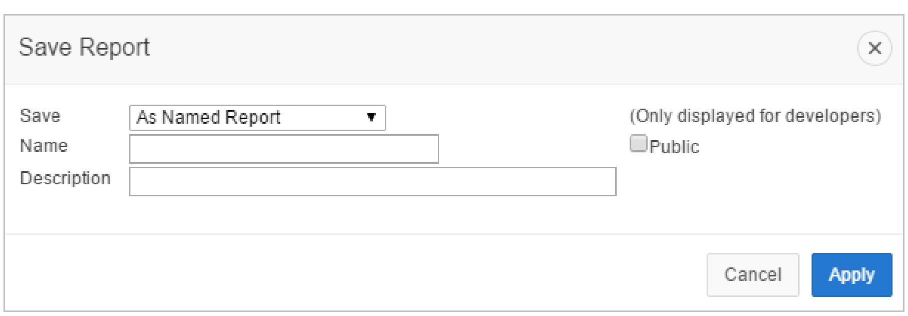
End users can save an interactive report and classify it as being either:

- **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 end 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). See "Customizing an Interactive Report Using the Actions Menu" on page 3-5.
3. Click the **Actions** menu and select **Save Report**.

   The Save Report dialog appears.



4. In Save Report:

a. **Save** - Select either As Named Report or As Default Report Settings option.

   Tip: This option is available for only 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: The ability to save an interactive report as Public is determined by your application developer. See "About Configuration Dependencies" on page 3-20.

e. Click **Apply**.

Renaming a Public or Private Interactive Report

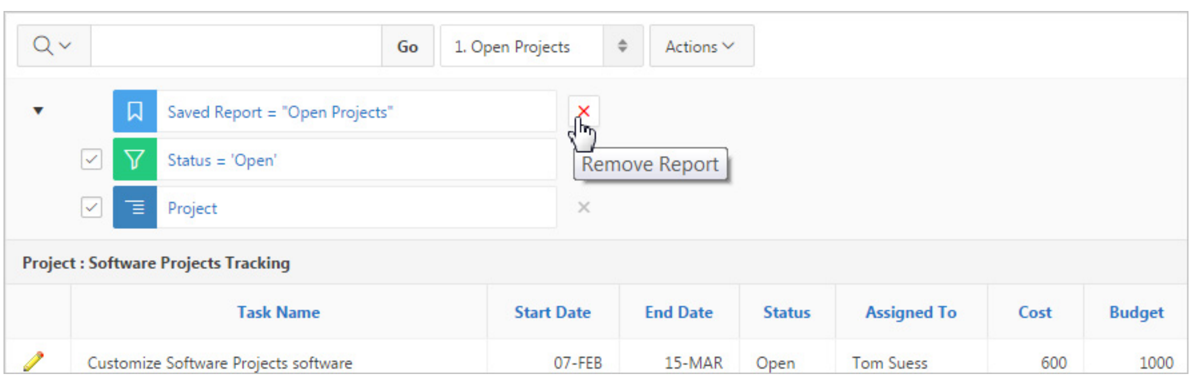
To rename a public or private interactive report:

1. Run the report as a developer.
2. Select a public or private interactive report to rename.
3. Edit the attributes (for example, enter a new name).
4. Click **Apply**.

Deleting a Public or Private Interactive Report

To delete a public or private interactive report:

1. Run the report as a developer.
2. Click the **Remove Report** icon next to the report name link.



3. Click **Apply**.

Resetting a Report

You can reset a report back to the default settings by selecting **Reset** from the Actions menu. Resetting a report removes any customizations you have made.

To reset a report:

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

> **Tip:** You can also reset a report by clicking the **Reset Report** button in the Search Bar.

Downloading a Report

You can download an interactive report back by selecting **Download** from the Actions menu. Available download formats depend upon your installation and report definition. Supported formats include comma-delimited file (CSV) format, HTML, Email, Microsoft Excel (XLS) format, Adobe Portable Document Format (PDF), and Microsoft Word Rich Text Format (RTF).

> **Tip:** The ability to download an interactive report is configurable by your application developer. To learn more about configuring download options, see "Configuring Download Options on the Actions Menu" in *Oracle Application Express Application Builder User's Guide*.

To download a report:

1. Click the **Actions** menu and select **Download**.
2. Select a report download format and follow the provided instructions.

Subscribing to Report Updates by Email

End users can receive updated versions of a report by subscribing to it. This section describes how report subscriptions work.

- How Report Subscriptions Work
- Subscribing to Updated Report Results

> **See Also:** "Managing Interactive Report Subscriptions" in *Oracle Application Express Administration Guide*

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 that identifies who originated the email.

To use Subscription:

- An Oracle Application Express administrator must configure email at the Instance level.
- The application developer configure enable the Subscription check box on the Interactive Report Attributes page.

> **See Also:** "Customizing the Interactive Report Search Bar" in *Oracle Application Express Application Builder User's Guide*

Subscribing to Updated Report Results

To receive updated report results by email:

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

   The Subscription dialog appears.
2. Under Subscription:

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

Note: Emails sent from a subscription include a system generated email signature indicating who created the subscription. This signature cannot be removed.

4 Data Loading Wizard Examples

This section explains how to import data into an Oracle Application Express application using an existing application Data Loading Wizard.

> **Tip:** To use the functionality described in this section, your application must be built with Data Upload capability. To learn more, see "Creating Applications with Data Loading Capability" in *Oracle Application Express Application Builder User's Guide*.

- About Using the Data Loading Wizard
- Importing Data from a File into Your Application
- Copying and Pasting Data into Your Application

About Using the Data Loading Wizard

Applications with data loading capability enable end users to dynamically import data into a table within any schema to which the user has access. End users run a Data Load Wizard that uploads data from a file or copies and pastes data entered by the end user directly into the wizard.

The Data Loading wizard for your application may have been built to include the ability to apply table lookup and transformation rules during the data upload process. Before the data is actually imported into the database, you are given the opportunity to review the data after all look up and transformation rules have been applied.

- Table Lookups - These rules automatically map data in the import file or copy and paste field to data that is found in another table. For example, if the import file contains a department name for the `DEPTNO` column but the upload table requires a number for that column, use a table lookup rule to find the corresponding department number for that department name in another table.
- Data transformation rules - These rules automatically perform formatting transformations such as changing import data to uppercase, lowercase, and so on. For example, if the import file includes column data with both upper and lowercase and the destination table requires all uppercase, data transformation rules can automatically insert only uppercase into that column during data upload.

Importing Data from a File into Your Application

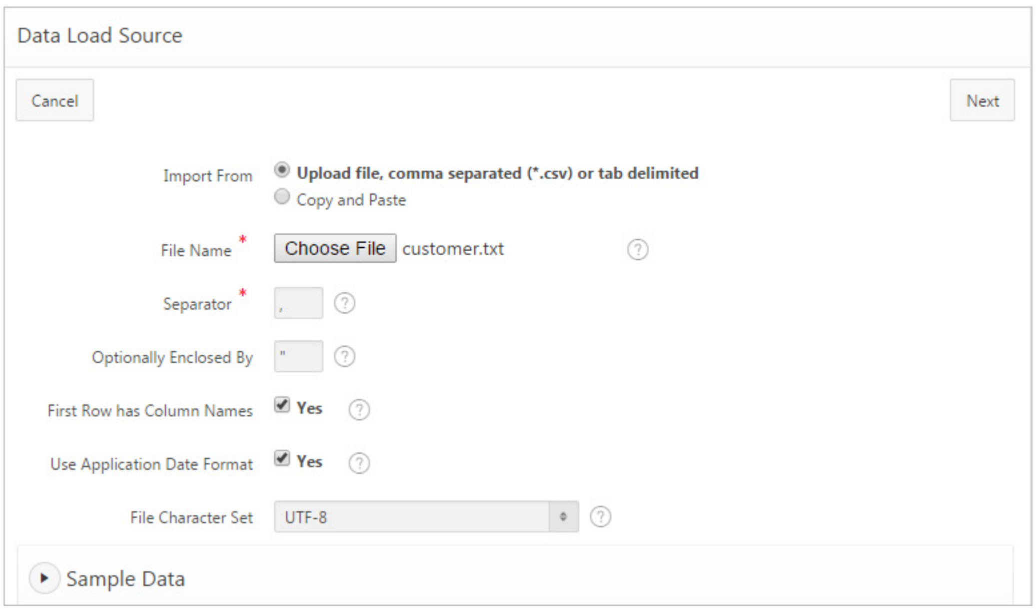
To upload data to your application, the application must have been built with Data Upload capability and the file must be formatted properly. This section illustrates how to use the Data Load Wizard to import data from a text file and includes examples from the sample packaged application, *Sample Database Application*.

> **See Also:** "Utilizing Packaged Applications" and "Understanding the Packaged Application Sample Database Application" in *Oracle Application Express Application Builder User's Guide*

To upload data from a file:

1. Run the sample packaged application, *Sample Database Application*.
2. On the Customers page, click **Upload Data**.

   The Data Load wizard appears. Next, select how to upload data.
3. From Import From, select **Upload file, comma separated (*.csv) or tab delimited**.



4. Under Data Load Source:

   a. File Name - Browse to the file name containing the data to upload.

   > **Tip:** To create a text file with sample data, expand the Sample Data region and copy and paste the data shown into a text file. If you use this sample data, remember to enter a comma (`,`) in the Separator attribute.

   b. Separator - Enter the column separator character. Enter a comma (`,`) for comma separators or `\t` for tab separators.

   c. Optionally Enclosed By - Enter a delimiter character. Use this character to delineate the starting and ending boundary of a data value. If you specify a delimiter character, Data Workshop ignores whitespace occurring before the starting and ending boundary of a data value. You can also use this option to enclose a data value with the specified delimiter character.

   d. First Row has Column Names - Select this option if f your data contains column names in the first row.

e. Use Application Date Format - Select this option to use the Application Date and Timestamp formats during data loading. See "Configuring Globalization Attributes" in *Oracle Application Express Application Builder User's Guide*.

f. File Character Set - Select the file character set associated with the file to be uploaded.

g. Globalization - Optionally expand the Globalization region and configure the following attributes:

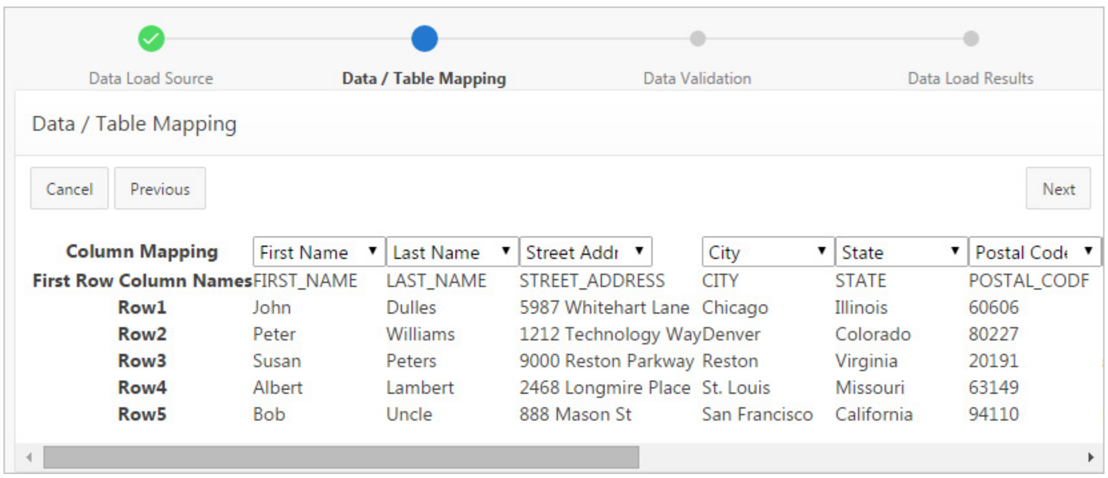
   – Currency Symbol - If your data contains international currency symbol, enter it here. See field-level Help for examples.

   – Group Separator - Enter a group separator to separate integer groups. Any non-numeric character can the group separator with a few exceptions. To learn more, see field-level Help.

   – Decimal Character - Enter a decimal character to separate the integer and decimal parts of a number. To learn more, see field-level Help.

h. Click **Next**.

   The Data/Table Mapping page appears.

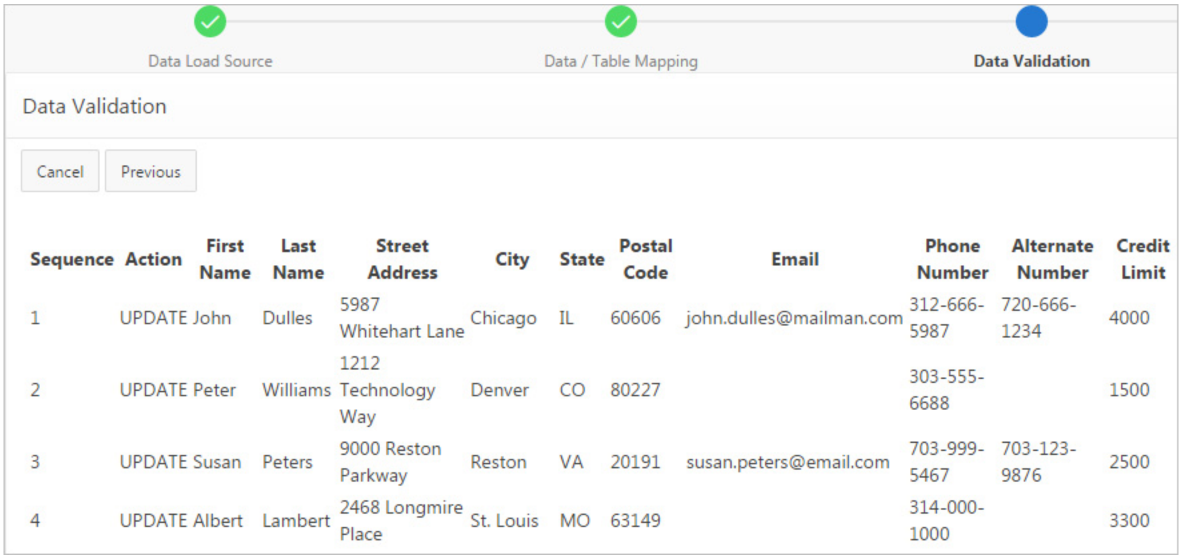


5. For Data/Table Mapping:

   a. Column Mapping - Indicates the destination column name. To change the column name, select a new column name from the list. To hide a column, select **Do Not Load**.

   b. Click **Next**.

   The Data Validation page appears showing the data to be inserted or updated after any table lookup and transformation rules have been applied. For more information regarding table look up and transformation rules, see "About Using the Data Loading Wizard" on page 4-1.



Sequence	Action	First Name	Last Name	Street Address	City	State	Postal Code	Email	Phone Number	Alternate Number	Credit Limit
1	UPDATE	John	Dulles	5987 Whitehart Lane	Chicago	IL	60606	john.dulles@mailman.com	312-666-5987	720-666-1234	4000
2	UPDATE	Peter	Williams	1212 Technology Way	Denver	CO	80227		303-555-6688		1500
3	UPDATE	Susan	Peters	9000 Reston Parkway	Reston	VA	20191	susan.peters@email.com	703-999-5467	703-123-9876	2500
4	UPDATE	Albert	Lambert	2468 Longmire Place	St. Louis	MO	63149		314-000-1000		3300

6. Review the data to be uploaded and click **Load Data**.

   The Data Load Results page displays:

   - Inserted Row(s) - This is the number of new rows uploaded to the table.
   - Updated Row(s) - This is the number of rows in the table updated with new information.
   - Failed Row(s) - This is the number of rows from the upload file that were not added or updated.
   - To be Reviewed Row(s) - This is the number of rows needing review.

7. Click **Finish**.

Copying and Pasting Data into Your Application

To upload data to your application, the application must have been built with Data Upload capability and the pasted data must be formatted properly. This section illustrates how to use the Data Load wizard to copy and paste data from a text file and includes an example from the sample packaged application, *Sample Database Application*.

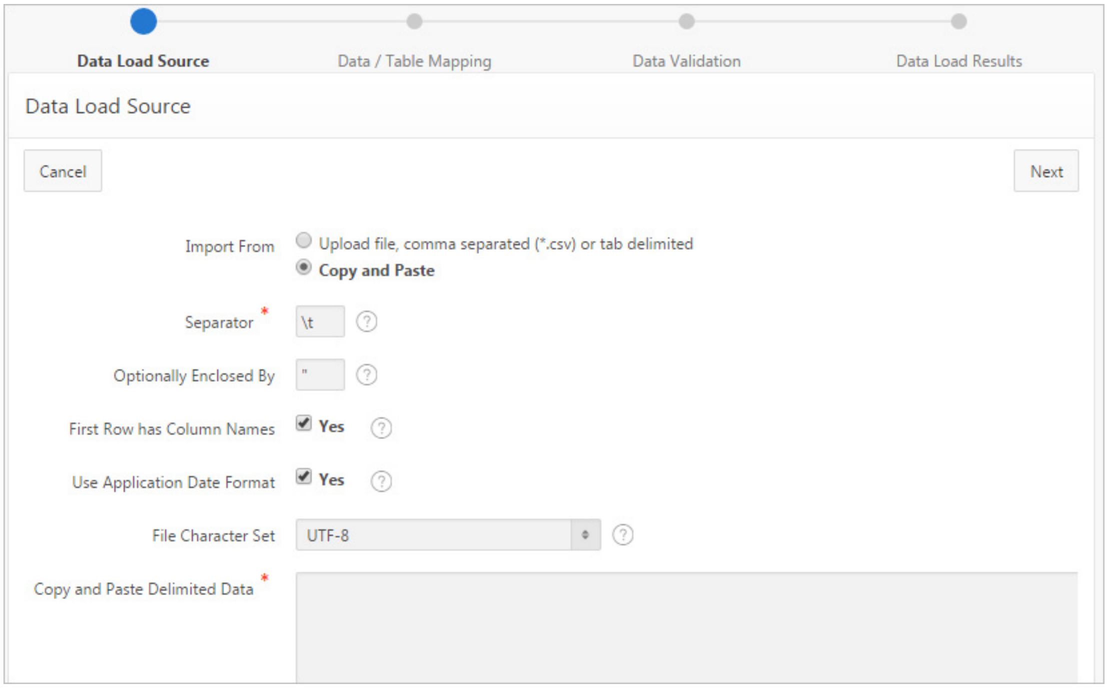
> **See Also:** "Utilizing Packaged Applications" and "Understanding the Packaged Application Sample Database Application" in *Oracle Application Express Application Builder User's Guide*

To upload data by copying and pasting:

1. Run the sample packaged application, *Sample Database Application*.
2. On the Customers page, click **Upload Data**.

   The Data Load wizard appears. Next, select how to upload data.

3. From Import From, select **Copy and Paste**.



4. Under Data Source Load:

   a. Separator - Enter the column separator character. Enter a comma (`,`) for comma separators or `\t` for tab separators.

   b. Optionally Enclosed By - Enter a delimiter character. Use this character to delineate the starting and ending boundary of a data value.

   c. First Row has Column Names - Select this option if f your data contains column names in the first row.

   d. Use Application Date Format - Select this option to use the Application Date and Timestamp formats during data loading. See "Configuring Globalization Attributes" in *Oracle Application Express Application Builder User's Guide*.

   e. File Character Set - Select the file character set associated with the file to be uploaded.

   f. Copy and Paste Delimited Data - Copy and paste your delimited data.

      Tip: To create a text file with sample data, expand the Sample Data region and copy and paste the data that displays. If you use this sample data, remember to enter a comma (`,`) in the Separator attribute.

      The sample data appears in the Copy and Paste field.

   g. Globalization - Optionally expand the Globalization region and configure the following attributes:

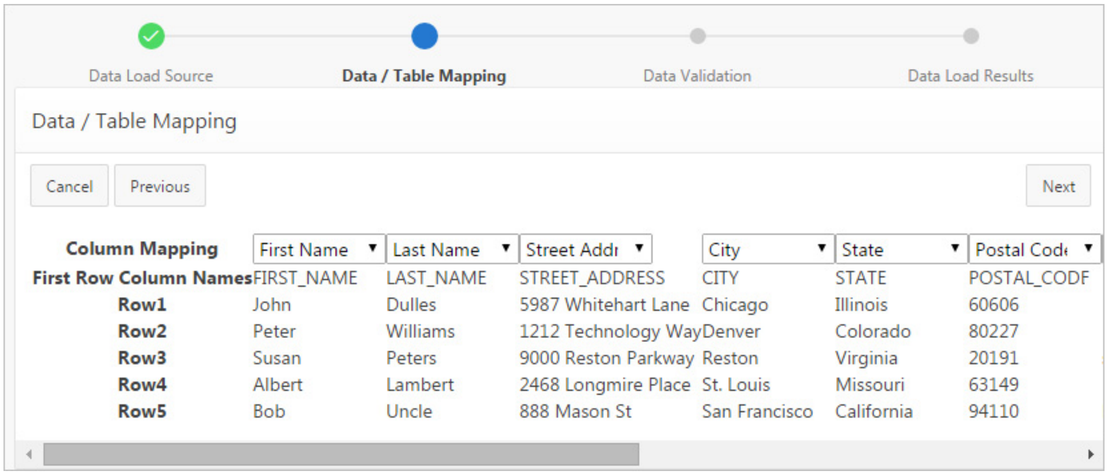
      – Currency Symbol - If your data contains international currency symbol, enter it here. See field-level Help for examples.

      – Group Separator - Enter a group separator to separate integer groups. Any non-numeric character can the group separator with a few exceptions. To learn more, see field-level Help.

– Decimal Character - Enter a decimal character to separate the integer and decimal parts of a number. To learn more, see field-level Help.

h. Click **Next**.

The Data/Table Mapping page appears.

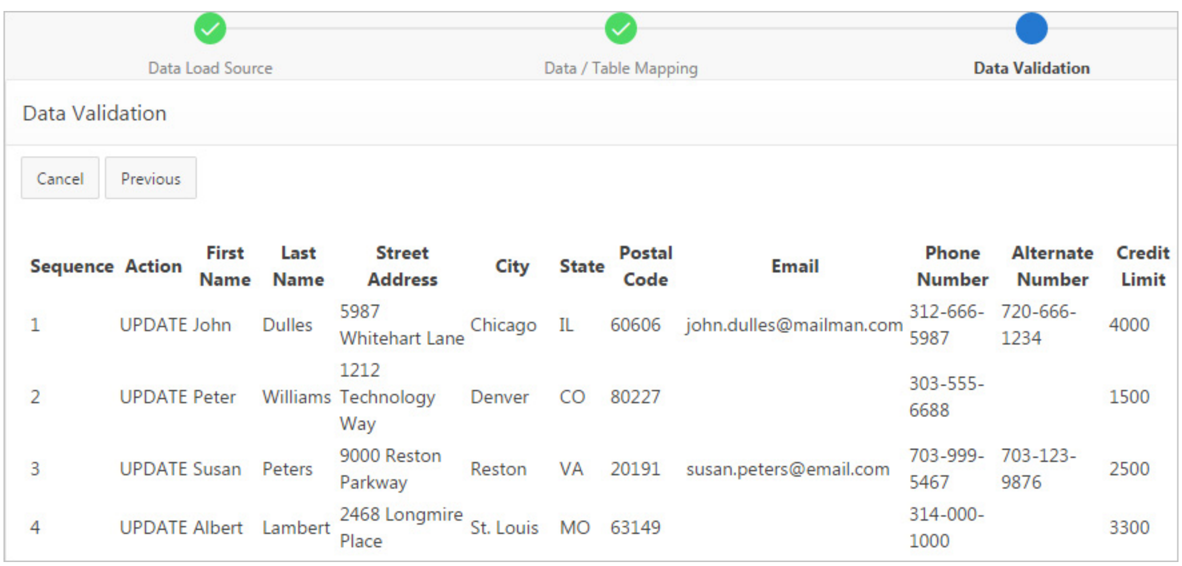


5. For Data/Table Mapping:

a. Column Mapping - Indicates the destination column name. To change the column name, select a new column name from the list. To hide a column, select **Do Not Load**.

b. Click **Next**.

The Data Validation page appears showing the data that to be inserted or updated after any table lookup and transformation rules have been applied. For more information regarding table look up and transformation rules, see "About Using the Data Loading Wizard" on page 4-1.



6. For Data Validation, review the data to be uploaded and click **Load Data**.

The Data Load Results page shows:

- Inserted Row(s) - This is the number of new rows uploaded to the table.

- Updated Row(s) - This is the number of rows in the table updated with new information.
- Failed Row(s) - This is the number of rows from the upload file that were not added or updated.
- To be Reviewed Row(s) - This is the number of rows needing review.

7. Click **Finish**.

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