Contents

Preface

Audience xi
Documentation Accessibility xi
Related Documents xi
Conventions xii

Part I  Get Started with Configuration

1  About Configuring Oracle Analytics Cloud

Typical Workflow for Administrators 1-1
Understanding Administration Pages 1-3
   About the Console 1-4
   About the Classic Administration Page 1-4
Access the Console in Oracle Analytics Cloud 1-5
Access the Classic Administration Page 1-6
Top Tasks for Administrators 1-7
   Top Tasks for Administrators 1-7

Part II  Configure Your Service

2  Manage What Users Can See and Do

Typical Workflow to Manage What Users See and Do 2-1
About Users and Groups 2-2
   Add a User or a Group 2-2
About Application Roles 2-2
   Predefined Application Roles 2-3
Configure What Users Can See and Do 2-4
   Get Started with Application Roles 2-4
   Add Members to Application Roles 2-5
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why Is the Administrator Application Role Important?</td>
<td>2-7</td>
</tr>
<tr>
<td>Assign Application Roles to Users</td>
<td>2-7</td>
</tr>
<tr>
<td>Assign Application Roles to Multiple Users Through Roles</td>
<td>2-8</td>
</tr>
<tr>
<td>Add Your Own Application Roles</td>
<td>2-9</td>
</tr>
<tr>
<td>Delete Application Roles</td>
<td>2-10</td>
</tr>
<tr>
<td>Add One Predefined Application Role to Another (Advanced)</td>
<td>2-10</td>
</tr>
<tr>
<td>Take Snapshots and Restore</td>
<td>3-1</td>
</tr>
<tr>
<td>Typical Workflow to Take Snapshots and Restore</td>
<td>3-1</td>
</tr>
<tr>
<td>About Snapshots</td>
<td>3-1</td>
</tr>
<tr>
<td>Options When You Take a Snapshot</td>
<td>3-2</td>
</tr>
<tr>
<td>Options When You Restore a Snapshot</td>
<td>3-5</td>
</tr>
<tr>
<td>Take Snapshots and Restore Information</td>
<td>3-6</td>
</tr>
<tr>
<td>Take a Snapshot</td>
<td>3-6</td>
</tr>
<tr>
<td>Restore from a Snapshot</td>
<td>3-6</td>
</tr>
<tr>
<td>Track Who Restored What and When</td>
<td>3-8</td>
</tr>
<tr>
<td>Edit Snapshot Descriptions</td>
<td>3-8</td>
</tr>
<tr>
<td>Delete Snapshots</td>
<td>3-8</td>
</tr>
<tr>
<td>Download and Upload Snapshots</td>
<td>3-8</td>
</tr>
<tr>
<td>Download Snapshots</td>
<td>3-9</td>
</tr>
<tr>
<td>Upload Snapshots</td>
<td>3-9</td>
</tr>
<tr>
<td>Migrate Oracle Analytics Cloud Using Snapshots</td>
<td>3-10</td>
</tr>
<tr>
<td>About Oracle Analytics Cloud Migration</td>
<td>3-10</td>
</tr>
<tr>
<td>Typical Workflow to Migrate Oracle Analytics Cloud</td>
<td>3-11</td>
</tr>
<tr>
<td>Migrate File-based Data</td>
<td>3-12</td>
</tr>
<tr>
<td>Perform Administration Tasks</td>
<td>4-1</td>
</tr>
<tr>
<td>Typical Workflow to Perform Administration Tasks</td>
<td>4-1</td>
</tr>
<tr>
<td>Configure a Virus Scanner</td>
<td>4-3</td>
</tr>
<tr>
<td>Set Up Social Channels for Sharing Visualizations</td>
<td>4-3</td>
</tr>
<tr>
<td>About Sharing Content on Social Channels</td>
<td>4-4</td>
</tr>
<tr>
<td>Enable Visualizations to be Shared on Twitter</td>
<td>4-4</td>
</tr>
<tr>
<td>Enable Visualizations to be Shared on LinkedIn</td>
<td>4-5</td>
</tr>
<tr>
<td>Enable Visualizations to be Shared on Slack</td>
<td>4-6</td>
</tr>
<tr>
<td>Set Up a Public Container to Share Visualizations</td>
<td>4-7</td>
</tr>
<tr>
<td>Set Up an Email Server to Deliver Reports</td>
<td>4-8</td>
</tr>
<tr>
<td>Example - Oracle Cloud Infrastructure Email Delivery Settings</td>
<td>4-9</td>
</tr>
<tr>
<td>Third-Party Mail Servers</td>
<td>4-12</td>
</tr>
<tr>
<td>Example - Google Mail Server Settings</td>
<td>4-12</td>
</tr>
</tbody>
</table>
Part III  Reference

A  Frequently Asked Questions

Top FAQs to Configure and Manage Oracle Analytics Cloud  A-2
Top FAQs to Back Up and Restore User Content  A-2
Top FAQs to Index Content and Data  A-4
<table>
<thead>
<tr>
<th>Troubleshoot</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Troubleshoot General Issues</td>
<td>B-1</td>
</tr>
<tr>
<td>Troubleshoot Configuration Issues</td>
<td>B-2</td>
</tr>
<tr>
<td>Troubleshoot Indexing</td>
<td>B-3</td>
</tr>
</tbody>
</table>
Preface

Learn how to manage users, back up and restore, and configure your service.

Topics:
• Audience
• Documentation Accessibility
• Related Documents
• Conventions

 Audience

Configuring Oracle Analytics Cloud is intended for administrators who use Oracle Analytics Cloud:

• Administrators manage access to Oracle Analytics Cloud and perform other administrative duties such as backing up and restoring information for others.

 Documentation Accessibility

Oracle is committed to 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 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 a full list of guides, refer to the Books tab on Oracle Analytics Cloud Help Center.

• http://docs.oracle.com/en/cloud/paas/analytics-cloud/books.html
Conventions

This document uses the standard Oracle text and image conventions.

Text Conventions

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

Videos and Images

Skins and styles customize the look and feel of Oracle Analytics Cloud, dashboards, reports, and other objects. Videos and images used in this guide may not have the same skin or style that you're using, but the behavior and techniques shown are the same.
Part I

Get Started with Configuration

This part introduces you to configuration and administration tasks for Oracle Analytics Cloud.

Chapters:

• About Configuring Oracle Analytics Cloud
# About Configuring Oracle Analytics Cloud

This topic describes how to get started with configuring Oracle Analytics Cloud.

**Topics:**
- Typical Workflow for Administrators
- Understanding Administration Pages
- Access the Console in Oracle Analytics Cloud
- Access the Classic Administration Page
- Top Tasks for Administrators

## Typical Workflow for Administrators

If you’re configuring Oracle Analytics Cloud for the first time, follow these tasks as a guide.

<table>
<thead>
<tr>
<th>Task</th>
<th>User</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sign-in as the administrator</td>
<td>Sign-in to Oracle Analytics Cloud as the administrator and navigate to the Console.</td>
<td>Access the Console in Oracle Analytics Cloud</td>
</tr>
<tr>
<td>Manage what users see and do</td>
<td>Configure what users see and do in Oracle Analytics Cloud using the Application Role page in the Console.</td>
<td>Manage What Users Can See and Do</td>
</tr>
<tr>
<td>Back up and restore content</td>
<td>Back up and restore the data model, catalog content, and application roles using a file called a snapshot.</td>
<td>Take Snapshots and Restore</td>
</tr>
<tr>
<td>Create database connections for data models</td>
<td>Connect to one or more databases.</td>
<td>Manage Database Connections for Data Models</td>
</tr>
<tr>
<td>Set up virus scanning</td>
<td>Connect to your virus scanning server.</td>
<td>Configure a Virus Scanner</td>
</tr>
<tr>
<td>Set up social channels for content sharing</td>
<td>Enable users to share content on Twitter, Slack, Oracle Cloud Storage, and Oracle Content and Experience.</td>
<td>Set Up Social Channels for Sharing Visualizations  Set Up a Public Container to Share Visualizations</td>
</tr>
<tr>
<td>Set up email deliveries</td>
<td>Connect to your email server.</td>
<td>Set Up an Email Server to Deliver Reports  Track the Reports You Distribute By Email or Through Agents</td>
</tr>
<tr>
<td>Enable agents to deliver content</td>
<td>Allow users to use agents to deliver their content.</td>
<td>Enable Content Delivery Through Agents  Suspend and Resume Deliveries  Restore and Enable Delivery Schedules</td>
</tr>
<tr>
<td>Task</td>
<td>User</td>
<td>More Information</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>Manage the types of devices that deliver content</td>
<td>Configure devices for your organization.</td>
<td>Manage the Types of Devices that Deliver Content</td>
</tr>
<tr>
<td>Free up storage space</td>
<td>Delete data sources on behalf of other users to free up storage space.</td>
<td>Delete Unused Data Sets</td>
</tr>
<tr>
<td>Manage how content is indexed and searched</td>
<td>Set up how content is indexed and crawled so users always find the latest information when they search.</td>
<td>Manage How Content Is Indexed and Searched</td>
</tr>
<tr>
<td>Manage maps</td>
<td>Manage map layers and background maps.</td>
<td>Manage Map Information for Analyses</td>
</tr>
<tr>
<td>Register safe domains</td>
<td>Authorize access to safe domains.</td>
<td>Register Safe Domains</td>
</tr>
<tr>
<td>Manage session information</td>
<td>Monitor who is signed in and troubleshoot issues with analyses by analyzing the SQL queries and logs.</td>
<td>Monitor Users and Activity Logs</td>
</tr>
<tr>
<td>Change the default reporting page and dashboard styles</td>
<td>Change the default logo, page style, and dashboard style.</td>
<td>Apply Custom Logos and Dashboard Styles</td>
</tr>
<tr>
<td>Migrate from Oracle Business Intelligence Enterprise Edition 11g</td>
<td>Migrate reporting dashboards and analyses, data models, and application roles.</td>
<td>Migrate from Oracle BI Enterprise Edition 11g</td>
</tr>
<tr>
<td>Migrate from Oracle Business Intelligence Enterprise Edition 12c</td>
<td>Migrate reporting dashboards and analyses, data models, and application roles.</td>
<td>Migrate from Oracle BI Enterprise Edition 12c</td>
</tr>
<tr>
<td>Upload data models from Oracle Business Intelligence Enterprise Edition</td>
<td>Upload and edit data models from Oracle Business Intelligence Enterprise Edition</td>
<td>Upload Data Models from Oracle BI Enterprise Edition Edit a Data Model in the Cloud</td>
</tr>
<tr>
<td>Localize reporting dashboards and analyses</td>
<td>Localize the names of catalog objects (known as captions) into different languages.</td>
<td>Localize Catalog Captions</td>
</tr>
<tr>
<td>Replicate data you want to visualize</td>
<td>Import data from Oracle Cloud applications into a high-performant data stores, such as Oracle Autonomous Data Warehouse, and Oracle Big Data Cloud, for visualization and analysis in Oracle Analytics Cloud.</td>
<td>Replicate Data</td>
</tr>
<tr>
<td>Track usage</td>
<td>Track the user-level queries to the content in Oracle Analytics Cloud.</td>
<td>Track Usage</td>
</tr>
<tr>
<td>Set up write-back</td>
<td>Enable users to update data from analyses and dashboards.</td>
<td>Deploy Write-back</td>
</tr>
<tr>
<td>Set up custom JavaScript for actions</td>
<td>Enable users to invoke browser scripts from analyses and dashboards.</td>
<td>Enable Custom Java Script For Actions</td>
</tr>
</tbody>
</table>

Chapter 1
Typical Workflow for Administrators
Understanding Administration Pages

You use the Console and Classic Administration pages to configure and manage your cloud service.

You must have the **BI Service Administrator** role to access these pages and perform administration tasks.

<table>
<thead>
<tr>
<th>Product</th>
<th>Administration Page</th>
<th>Role Required</th>
<th>Description and How to Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Analytics Cloud</td>
<td>Console BI Service Administrator</td>
<td>Use the Console to manage user permissions, back up everyone's content, add database connections for data models, register safe domains, configure your virus scanner, email server, deliveries, and more. You can also see who is currently signed in and diagnose issues with SQL queries from the Console.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Manage What Users Can See and Do</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Take Snapshots and Restore</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Manage Database Connections for Data Models</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Register Safe Domains</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Monitor Users and Activity Logs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Run Test SQL Queries</td>
</tr>
<tr>
<td>Oracle Analytics</td>
<td>Classic Administration BI Service Administrator</td>
<td>Most options on the Classic Administration page are exposed through the Console. Only use the Classic Administration page if you’re familiar with on-premise products that use a similar page. See About the Classic Administration Page.</td>
<td></td>
</tr>
</tbody>
</table>

Tools for Other Administration Tasks

You use a different tool (Oracle Cloud Infrastructure Console) to perform service-level lifecycle tasks and identity management tasks. Additional roles are required to access and perform administrative tasks in Oracle Cloud Infrastructure Console and instructions for these tasks are available in other guides.

<table>
<thead>
<tr>
<th>Product</th>
<th>Administration Tool</th>
<th>Role Required</th>
<th>Description and How to Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Analytics Cloud</td>
<td>Oracle Cloud Infrastructre Console Cloud Account Administrator</td>
<td>Use Oracle Cloud Infrastructure Console to perform service-level lifecycle tasks, such as create, stop, start, delete, scale, and so on. See Administer Services.</td>
<td></td>
</tr>
<tr>
<td>Oracle Identity Cloud</td>
<td>Oracle Cloud Infrastructre Console Identity Domain Administrator</td>
<td>See Manage Users and Groups in Oracle Identity Cloud Service in Administering Oracle Identity Cloud Service.</td>
<td></td>
</tr>
</tbody>
</table>


About the Console

You use the Console to configure and manage your service. You must have the BI Service Administrator role to access the Console and perform administration tasks.

<table>
<thead>
<tr>
<th>Task</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maps</td>
<td>Define how users display their data on maps. See Manage Map Information for Analyses.</td>
</tr>
<tr>
<td>Extensions</td>
<td>Upload custom visualization types or custom data actions. See Manage Custom Plug-ins.</td>
</tr>
<tr>
<td>Social</td>
<td>Enable users to share content on various social channels. See Set Up Social Channels for Sharing Visualizations.</td>
</tr>
<tr>
<td>Search Index</td>
<td>Set up how content is indexed and crawled so users always find the latest information when they search. See Schedule Regular Content Crawls and Monitor Search Crawl Jobs.</td>
</tr>
<tr>
<td>Safe Domains</td>
<td>Authorize access to safe domains. See Register Safe Domains.</td>
</tr>
<tr>
<td>Users and Roles</td>
<td>Configure what users see and do through application roles. See Manage What Users Can See and Do.</td>
</tr>
<tr>
<td>Snapshots</td>
<td>Back up and restore the data model, catalog content, and application roles using a file called a snapshot. See Take Snapshots and Restore.</td>
</tr>
<tr>
<td>Connections</td>
<td>Create database connections for data models. See Manage Database Connections for Data Models.</td>
</tr>
<tr>
<td>Virus Scanner</td>
<td>Connect to your virus scanning server. See Configure a Virus Scanner.</td>
</tr>
<tr>
<td>Session and Query Cache</td>
<td>See which users are signed in and troubleshoot report queries. See Monitor Users and Activity Logs.</td>
</tr>
<tr>
<td>Issue SQL</td>
<td>Test and debug SQL queries. See Run Test SQL Queries.</td>
</tr>
<tr>
<td>Mail Server</td>
<td>Connect to your email server. See Set Up an Email Server to Deliver Reports.</td>
</tr>
<tr>
<td>Monitor Deliveries</td>
<td>Track deliveries sent by the email server. See Track the Reports You Distribute By Email or Through Agents.</td>
</tr>
<tr>
<td>System Settings</td>
<td>Set advanced options for Oracle Analytics Cloud. See Configure Advanced Options.</td>
</tr>
<tr>
<td>Remote Data Connectivity</td>
<td>Register one or more Data Gateway agents for remote connectivity to visualization projects. See Configure and Register Data Gateway for Data Visualization.</td>
</tr>
</tbody>
</table>

About the Classic Administration Page

Only use the Classic Administration page if you’re familiar with on-premise products that use a similar page. Most options on the Classic Administration page are exposed through the Console and where available, we recommend that you use the Console for configuration.
<table>
<thead>
<tr>
<th>Task</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manage Privileges</strong></td>
<td>Oracle recommends that you keep the default privileges because they’re optimized for Oracle Analytics. Editing privileges might result in unexpected behavior or access to features.</td>
</tr>
<tr>
<td><strong>Manage Sessions</strong></td>
<td>See which users are signed in and troubleshoot report queries. See Monitor Users and Activity Logs.</td>
</tr>
<tr>
<td><strong>Manage Agent Sessions</strong></td>
<td>Currently not available in Oracle Analytics Cloud.</td>
</tr>
<tr>
<td><strong>Manage Device Types</strong></td>
<td>Add devices that can deliver content for your organization. See Manage the Types of Devices that Deliver Content</td>
</tr>
<tr>
<td><strong>Toggle Maintenance Mode</strong></td>
<td>Indicates whether Maintenance Mode is on or off. In Maintenance Mode, you make the catalog read-only so that other users can’t modify its content. Users can still view objects in the catalog, but they can’t update them. Some features, such as the “most recently used” list aren’t available.</td>
</tr>
<tr>
<td><strong>Reload Files and Metadata</strong></td>
<td>Use this link to reload XML message files, refresh metadata, and clear caches. You might want to do this after uploading new data, for example if you add or update a data model.</td>
</tr>
<tr>
<td><strong>Reload Log Configuration</strong></td>
<td>Oracle recommends that you keep the default log level. Oracle Support might suggest you change the log level to help troubleshoot an issue.</td>
</tr>
<tr>
<td><strong>Issue SQL</strong></td>
<td>Test and debug SQL queries. See Run Test SQL Queries.</td>
</tr>
<tr>
<td><strong>Scan and Update Catalog Objects That Require Updates</strong></td>
<td>Use this link to scan the catalog and update any objects that were saved with earlier versions of Oracle Analytics.</td>
</tr>
<tr>
<td><strong>Manage Themes</strong></td>
<td>Change the default logo, colors, and heading styles for reporting pages, dashboards, and analyses. See Manage Themes.</td>
</tr>
<tr>
<td><strong>Manage Captions</strong></td>
<td>Localize the names (captions) of reporting objects that users create. See Localize Your Captions.</td>
</tr>
<tr>
<td><strong>Manage Map Data</strong></td>
<td>Define how users display their data on maps. See Manage Map Information for Analyses.</td>
</tr>
<tr>
<td><strong>Manage Publisher</strong></td>
<td>Set up data sources for pixel-perfect reports and delivery destinations. Configure the scheduler, font mappings, and many other runtime options. See Introduction to Publisher Administration.</td>
</tr>
<tr>
<td><strong>Configure Crawl</strong></td>
<td>This option is available through the Console. See Schedule Regular Content Crawls.</td>
</tr>
<tr>
<td><strong>Monitor Crawl</strong></td>
<td>This option is available through the Console. See Monitor Search Crawl Jobs.</td>
</tr>
</tbody>
</table>

### Access the Console in Oracle Analytics Cloud

Use the Console to manage user permissions, back up everyone’s content to a snapshot, configure various aspects of Oracle Analytics Cloud, and perform other administrative tasks.

1. In the Home page, click the **Navigator** bar and click **Console**.
2. Under **Configuration and Administration**, click the option you want to configure. You must have the **BI Service Administrator** role to configure Oracle Analytics Cloud.

Access the Classic Administration Page

Use the Classic Administration page if you're familiar with on-premise products that use a similar page.

1. In the Home page, click the **Page Menu** and select **Open Classic Home**.
2. Click My Profile, and select Administration. You must have the BI Service Administrator role to see the Administration menu.

3. Click the link for the feature you want to configure.

Top Tasks for Administrators

Here are the top tasks for configuring and managing Oracle Analytics Cloud.

Tasks:

- Top Tasks for Administrators

Top Tasks for Administrators

The top tasks for configuring and managing your cloud service are identified in this topic.

- Assign Application Roles to Users
- Add Your Own Application Roles
• Take Snapshots
• Restore from a Snapshot
• Free Up Storage Space
• Register Safe Domains
• Manage How Content Is Indexed and Searched
Part II

Configure Your Service

This part explains how to configure and manage an Analytics Cloud instance offering data visualization and business intelligence enterprise modeling services. The information is aimed at administrators whose primary job is to manage users and keep them productive. Administrators perform a long list of critical duties; they control user permissions and amend accounts, set up database connections for data modelers, manage data storage to avoid exceeding storage limits, keep regular backups so users don't risk losing their work, authorize access to external content by registering safe domains, troubleshoot user queries, and so much more.

Chapters:

- Manage What Users Can See and Do
- Take Snapshots and Restore
- Perform Administration Tasks
Manage What Users Can See and Do

Administrators can manage what other users are allowed to see and do when working with data.

Topics:
- Typical Workflow to Manage What Users See and Do
- About Users and Groups
- About Application Roles
- Configure What Users Can See and Do

Typical Workflow to Manage What Users See and Do

Here are the common tasks to start managing what users can see and do when working with Oracle Analytics Cloud.

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add users and groups</td>
<td>Add the users and groups who you want to give access to Oracle Analytics Cloud through Oracle Identity Cloud Service.</td>
<td>Add a User or a Group</td>
</tr>
<tr>
<td>Understand application roles</td>
<td>Learn about the predefined application roles and what they allow users to do in Oracle Analytics Cloud.</td>
<td>About Application Roles</td>
</tr>
<tr>
<td>Assign application roles to users</td>
<td>Give your users access to different features by granting them application roles.</td>
<td>Assign Application Roles to Users</td>
</tr>
<tr>
<td>Assign application roles to groups</td>
<td>Grant access to users more quickly through groups. Give a group of users access rather than to individual users.</td>
<td>Assign Application Roles to Multiple Users Through Roles</td>
</tr>
<tr>
<td>Add members and actions to application roles</td>
<td>Grant access to Oracle Analytics Cloud features in a different way. Go to the application role and assign users and groups from there.</td>
<td>Add Members to Application Roles</td>
</tr>
<tr>
<td>Add your own application roles</td>
<td>Oracle Analytics Cloud provides application roles that map directly to all the main features but you can create your own application roles that make sense to your business too.</td>
<td>Add Your Own Application Roles</td>
</tr>
</tbody>
</table>
About Users and Groups

Identity domain administrators use Oracle Identity Cloud Service to manage users and set up user groups for Oracle Analytics Cloud. Oracle Identity Cloud Service authenticates and authorizes users when they sign-in to Oracle Analytics Cloud.

After the user accounts are set up, Oracle Analytics Cloud administrators can use the Users and Roles page in Oracle Analytics Cloud to give individual users or groups permissions through application roles. See About Application Roles and Add Members to Application Roles.

Users, Groups, and Application Roles in Oracle Identity Cloud Service

Oracle Analytics Cloud is federated with Oracle Identity Cloud Service and initially offers a single user account. This default user can grant other users permissions in Oracle Analytics Cloud though several Oracle Identity Cloud Service application roles (ServiceAdministrator, ServiceUser, ServiceViewer).

<table>
<thead>
<tr>
<th>Application Roles in Oracle Identity Cloud Service</th>
<th>Permissions in Oracle Analytics Cloud</th>
</tr>
</thead>
<tbody>
<tr>
<td>ServiceAdministrator</td>
<td>Member of BI Service Administrator, BI Data Model Author, and BI Data Load Author. Allows users to administer Oracle Analytics Cloud and delegate privileges to others. The user who creates the service is automatically assigned this Oracle Identity Cloud Service application role.</td>
</tr>
<tr>
<td>ServiceUser</td>
<td>Member of BI Content Author and DV Content Author. Allows users to create and share content.</td>
</tr>
<tr>
<td>ServiceViewer</td>
<td>Member of BI Consumer and DV Consumer. Allows users to view and explore content.</td>
</tr>
<tr>
<td>ServiceDeployer</td>
<td>Not used in Oracle Analytics Cloud.</td>
</tr>
<tr>
<td>ServiceDeveloper</td>
<td>Not used in Oracle Analytics Cloud.</td>
</tr>
</tbody>
</table>

Add a User or a Group

One of the first jobs you do after setting up Oracle Analytics Cloud is to add user accounts for everyone you expect to use Oracle Analytics Cloud and assign them to suitable user groups.

Use Oracle Identity Cloud Service to add users and groups. See Manage Oracle Identity Cloud Service Users, in Administering Oracle Identity Cloud Service.

About Application Roles

An application role comprises a set of privileges that determine what users can see and do after signing in to Oracle Analytics Cloud. It’s your job as an administrator to assign users and groups to one or more application roles.

There are two types of application role:
Predefined Application Roles

Oracle Analytics Cloud provides several predefined application roles to get you started. In many cases, these predefined application roles are all that you need.

This diagram illustrates the predefined application role hierarchy and how they map to the default application roles in Oracle Identity Cloud Service (ServiceAdministrator, ServiceUser, ServiceViewer). For example:

- **BI Service Administrator** - the diagram shows that a member of the BI Service Administrator application role inherits membership of all the other predefined application roles, such as BI Data Model Author, BI Data Load Author, BI Consumer, and so on. This means, that if a user is a member of BI Service Administrator, they can automatically do everything that these individual application roles allow. If you add a new administrative user (for example, John), you don’t need to assign him to every application role. Instead, you simply add him to the BI Service Administrator application role.

- **DV Content Author** - the diagram shows that a member of the DV Content Author application role automatically inherits memberships of the BI Content Author, DV Consumer, and BI Consumer application roles. So, if you give a user the DV Content Author application role, that user can create, share, explore, and view data visualizations, and they can also create, share, run, and view analyses and dashboards.

<table>
<thead>
<tr>
<th>Type of Application Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predefined</td>
<td>Include a fixed set of privileges.</td>
</tr>
<tr>
<td>User-defined</td>
<td>Created by administrators. See Add Your Own Application Roles.</td>
</tr>
</tbody>
</table>
Predefined Application Roles in Oracle Analytics Cloud

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI Service Administrator</td>
<td>Allows users to administer Oracle Analytics Cloud and delegate privileges to others using the Console.</td>
</tr>
<tr>
<td>BI Data Model Author</td>
<td>Allows users to create and manage data models in Oracle Analytics Cloud using Data Modeler.</td>
</tr>
<tr>
<td>BI Data Load Author</td>
<td>Allows users to load data.</td>
</tr>
<tr>
<td>DV Content Author</td>
<td>Allows users to create visualization projects, load data for data visualizations, and explore data visualizations.</td>
</tr>
<tr>
<td>BI Content Author</td>
<td>Allows users to create analyses, dashboards, and pixel-perfect reports, and share them with others.</td>
</tr>
<tr>
<td>DV Consumer</td>
<td>Allows users to explore data visualizations.</td>
</tr>
<tr>
<td>BI Consumer</td>
<td>Allows users to view and run reports in Oracle Analytics Cloud (projects, analyses, dashboards, pixel-perfect reports). Use this application role to control who has access to the service.</td>
</tr>
</tbody>
</table>

You can't delete predefined application roles or remove default memberships.

Application roles can have users, groups, or other application roles as members. This means that a user who is a member of one application role might indirectly be a member of other application roles.

Configure What Users Can See and Do

Administrators configure what users see and do in Oracle Analytics Cloud from the Users and Roles page in the Console. This page presents user information in 3 different views:

- Get Started with Application Roles
- Assign Application Roles to Users
- Assign Application Roles to Multiple Users Through Roles
- Add Members to Application Roles
- Add Your Own Application Roles
- Delete Application Roles

Get Started with Application Roles

Administrators configure what users see and do in Oracle Analytics Cloud.
Add Members to Application Roles

Application roles determine what people are allowed to see and do in Oracle Analytics Cloud. It's the administrator’s job to assign appropriate application roles to all users and to manage the privileges of each application role.

You can make individuals (users) and groups of users (roles) from your identity domain members of an application role.

Remember:

- Members inherit the privileges of an application role.
- Application roles inherit privileges from their parent (application roles).

You select members for an application role or change parent privileges using the Console.

1. Click Console.
2. Click Users and Roles.
3. Click the Application Roles tab.
4. To display all available application roles, leave the Search field blank and Show Members: All.
   
   To filter the list by name, enter all or part of an application role name in the Search filter and press Enter. The search is case-insensitive, and searches both name and display name.

5. Look in the Members area to see who belongs to each application role:
The number of users, roles, and application roles that are members displays on the page. Click a number, such as 5 in this image, to see those members in more detail (either users, roles or application roles).

6. To add new members or remove members from an application role:
   a. Click Members.
   b. Select either users, roles, or application roles from the Type box and click Search to show the current members.
   c. Use the shuttle controls to move members between the Available and All Selected list.
      Some application roles aren't eligible to be members and these are grayed. For example, you can't select a parent application role to be a member.
      Users marked ‘absent’ no longer have an account in your identity domain. To remove absent users, use the shuttle control to move the user from the All selected users list to the Available users list.
   d. Click OK.

7. To see whether an application role, such as Sales Analyst, inherits privileges from other application roles:
   a. Click the action menu.
   b. Select Manage Application Roles.
      Inherited privileges are displayed in the Selected Application Roles pane.

8. To add or remove privileges:
   a. Click Search to display all available application roles.
      Alternatively, enter all or part of an application role name and click Search.
   b. Use the shuttle controls to move application roles between the Available Application Roles list and the Selected Application Roles list.
      You can't select application roles that are grayed out. Application roles are grayed out so you can't create a circular membership tree.
   c. Click OK.
Why Is the Administrator Application Role Important?

You need the BI Service Administrator application role to access administrative options in the Console.

There must always be at least one person in your organization with the BI Service Administrator application role. This ensures there is always someone who can delegate permissions to others. If you remove yourself from the BI Service Administrator role you'll see a warning message.

Assign Application Roles to Users

The Users page lists all the users who can sign in to Oracle Analytics Cloud. The list of names comes directly from the identity domain associated with your instance. It's the administrator's job to assign users to appropriate application roles.

1. Click Console.
2. Click Users and Roles.
3. Click the Users tab.

4. To show everyone, leave the Search field blank and click Show Members: All.
To filter the list by name, enter all or part of a user name in the Search filter and press enter. The search is case-insensitive, and searches both name and display name.

5. To see what application roles are assigned to a user:
   a. Select the user.
   b. Click the action menu and select Manage Application Roles.
The user's current application role assignments are displayed in the Selected Application Roles pane.
For example, this image shows a user called Ed Ferguson assigned with the Sales Analysts application role.

6. To assign additional application roles or remove current assignments:
   a. Show available application roles. Click **Search** to display all the application roles.
      Alternatively, filter the list by **Name** and click **Search**.
   b. Use the shuttle controls to move application roles between the **Available Application Roles** list and the **Selected Application Roles** list.
   c. Click **OK**.

Assign Application Roles to Multiple Users Through Roles

The Roles page shows you all the roles that people signing in belong to in their identity domain. The list of roles comes directly from the identity domain associated with your instance. It’s often quicker to assign privileges to multiple users through their predefined identity domain roles, than it is to assign privileges to users one by one.

You can assign application roles from the Roles page. You can also see who belongs to each role.

1. Click **Console**.
2. Click **Users and Roles**.
3. Click the **Roles** tab.
4. Look in the **Members** area to see who belongs to each role:

The number of users and roles that are members are displayed on the page. Click a number, such as 1 in this image, to see the members in more detail.

5. To display all available roles, leave the **Search** field blank and **Show Members**: **All**.

To filter the list by name, enter all or part of a role name in the **Search** filter and press enter. The search is case-insensitive, and searches both name and display name.

Alternatively, use the **Show Members** filter to list roles that are members of a particular application role or belong to another role.

6. To see the current application roles assignments:
   a. Select the role.
   b. Click the action menu and select **Manage Application Roles**.

Current application role assignments display in the **Selected Application Roles** pane.

7. To assign additional application roles or remove them:
   a. Click **Search** to display all available application roles.
      Alternatively, enter all or part of an application role name and click **Search**.
   b. Use the shuttle controls to move application roles between the **Available Application Roles** list and the **Selected Application Roles** list.
   c. Click **OK**.

### Add Your Own Application Roles

Oracle Analytics Cloud provides a set of predefined application roles. You can also create application roles of your own to suit your own requirements.

For example, you can create an application role that only allows a select group of people to view specific folders or projects.

1. Click **Console**.
2. Click **Users and Roles**.
3. Click the **Application Roles** tab.
4. Click **Add**.
5. Enter a name and describe the application role. Click **Save**.

Initially, new application roles don't have any members or privileges.

6. Add members to the application role:
   a. Click the action menu.
   b. Select **Manage Members**.
   c. Select the members (users, roles or application roles) that you want assigned to this application role and move them to the **Selected** pane on the right.

For example, you might want an application role that restricts access to everyone in your organization, except sales managers. To do this, move anyone who is a sales manager, to the **Selected** pane.
d. Click OK.

7. Optionally, add privileges to the new application role:
   a. Click the action menu.
   b. Select **Manage Application Roles**.
   c. Click **Search**.
   d. Move all the application roles you want this application role to inherit to the **Selected Application Roles** pane, and click **OK**.

Delete Application Roles

You can delete application roles that you created but no longer need.

1. Click **Console**.
2. Click **Users and Roles**.
3. Click the **Application Roles** tab.
4. Navigate to the application role you want to delete.
5. Click the action menu for the application role you want to delete and select **Remove**.

6. Click **OK**.

Add One Predefined Application Role to Another (Advanced)

Oracle Analytics Cloud provides several predefined roles: BI Service Administrator, BI Data Model Author, BI Data Load Author, BI Content Author, DV Content Author, DV Consumer, BI Consumer. There are very few, advanced use cases where you might want to **permanently** include one predefined application role in another.

Any changes that you make to predefined application roles are permanent, so don’t perform this task unless you need to.

1. Click **Console**.
2. Click **Snapshots**.
3. Click **New Snapshot** to take a snapshot of your system before the change.
The only way you can revert predefined application role changes is to restore your service from a snapshot taken before the change.

4. Go back to the Console, click **Users and Roles**.

5. Click the **Application Roles** tab.

6. Click the action menu for the predefined application role you want to change and select **Add Predefined Member (Advanced)**.

7. Click **Yes** to confirm that you've taken a snapshot and want to continue.

8. Select the predefined application role that you want to add.
   
   You can select only one application role.

9. Click **Yes** to confirm that you've taken a snapshot and want to permanently change the predefined application role.
Take Snapshots and Restore

This topic describes how to back up and restore application content using a file called a snapshot.

Topics:
- Typical Workflow to Take Snapshots and Restore
- About Snapshots
- Take Snapshots and Restore Information
- Download and Upload Snapshots
- Migrate Oracle Analytics Cloud Using Snapshots

Typical Workflow to Take Snapshots and Restore

Here are the common tasks to back up and restore your content using snapshots.

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take a snapshot</td>
<td>Capture content and settings in your environment at a point in time.</td>
<td>Take a Snapshot</td>
</tr>
<tr>
<td>Restore from a snapshot</td>
<td>Restore the system to a previously working state.</td>
<td>Restore from a Snapshot</td>
</tr>
<tr>
<td>Delete a snapshot</td>
<td>Delete unwanted snapshots.</td>
<td>Delete Snapshots</td>
</tr>
<tr>
<td>Download a snapshot</td>
<td>Save a snapshot to a local file system.</td>
<td>Download Snapshots</td>
</tr>
<tr>
<td>Upload a snapshot</td>
<td>Upload content from a snapshot that is stored on a local file system.</td>
<td>Upload Snapshots</td>
</tr>
<tr>
<td>Migrate content using a snapshot</td>
<td>Migrate content to another environment.</td>
<td>Migrate Oracle Analytics Cloud Using Snapshots</td>
</tr>
</tbody>
</table>

About Snapshots

A snapshot captures the state of your environment at a point in time. Snapshots don't include data that's hosted on external data sources.

Backup and Restore

Take a snapshot of your environment before people start using the system and again at suitable intervals so you can restore the environment if something goes wrong. You can download and store snapshots on a local file system and upload them back to your system if they're required to restore content. The snapshot file that you download is a compressed archive file (BAR file).
You can keep up to 40 snapshots online and download as many as you want.

Oracle Analytics Cloud automatically takes a snapshot when someone publishes changes to the data model and keeps the 5 most recent snapshots in case you unexpectedly need to revert to an earlier model version. The minimum interval between these automatically generated snapshots is one hour.

**Content Migration**

Snapshots are also useful if you want to migrate your content to another environment. For example, you might want to:

- Migrate content you created in a development or test environment to a production environment.
- Migrate content you created in a different Oracle product and exported to a snapshot (BAR file).

You can generate BAR files from several Oracle products, for example, Oracle Analytics Cloud, Oracle Analytics Server, Oracle Business Intelligence Cloud Service, Oracle Data Visualization Cloud Service, and Oracle BI Enterprise Edition.

When you restore a snapshot taken from a different environment:

- The snapshot must be taken from an environment at the same version as or an earlier version than the target environment.
- Catalog objects that your target environment doesn’t support aren’t migrated.
- In most cases, you must upload the data associated with your data sets on the target environment.

**Options When You Take a Snapshot**

When you take a snapshot you choose the content you want to include in it. You can take a snapshot of your entire environment (everything) or specify only specific content that you want to back up or migrate (custom).

- **Everything** - Saves your entire environment in the snapshot. This option is useful if you want to:
  - Back up everything in case something goes wrong.
  - Migrate everything to a new environment.
  - Clone an existing environment.

- **Custom** - You select which content to save in the snapshot. Some content types are always included while others are optional.

<table>
<thead>
<tr>
<th>Snapshot Option</th>
<th>Description</th>
<th>Optional?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>Data visualization content that users create (Data tab).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data sets that users create for data visualizations and data flows.</td>
<td>Always included</td>
</tr>
<tr>
<td>File-based Data</td>
<td>File-based data that users upload to create data sets.</td>
<td>Optional</td>
</tr>
<tr>
<td></td>
<td>For example, data uploaded from a spreadsheet.</td>
<td></td>
</tr>
<tr>
<td>Snapshot Option</td>
<td>Description</td>
<td>Optional?</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Connections</td>
<td>Data connections that users create so they can visualize their data.</td>
<td>Always included</td>
</tr>
<tr>
<td>Data Flows</td>
<td>Data flows that users create for data visualization.</td>
<td>Always included</td>
</tr>
<tr>
<td>Sequences</td>
<td>Sequences that users create for data visualization.</td>
<td>Always included</td>
</tr>
<tr>
<td>Data Replications</td>
<td>Data replications that users create for data visualization.</td>
<td>Optional</td>
</tr>
<tr>
<td>Machine Learning</td>
<td>Machine learning models that users create from data flows.</td>
<td>Optional</td>
</tr>
<tr>
<td>Jobs</td>
<td>Jobs that users schedule for data flows, sequences, data replications, and pixel-perfect reports.</td>
<td>Optional</td>
</tr>
<tr>
<td>Plug-ins and Extensions</td>
<td>Extensions that users upload to implement custom visualizations and custom maps.</td>
<td>Optional</td>
</tr>
<tr>
<td>Configuration and Settings</td>
<td>Service configuration and settings configured through Console. For example, mail settings, database connections, safe domains, data connectivity configurations, and more.</td>
<td>Optional</td>
</tr>
<tr>
<td>Day by Day</td>
<td>Day by Day content such as the “For You” feed, bring backs, comments, and shared cards.</td>
<td>Optional</td>
</tr>
<tr>
<td>Application Roles</td>
<td>- Custom application roles that administrators create through Console.</td>
<td>Always included</td>
</tr>
<tr>
<td></td>
<td>- Membership details for each application role, that is, the users, groups, and other application roles assigned to each application role.</td>
<td></td>
</tr>
<tr>
<td>Snapshot Option</td>
<td>Description</td>
<td>Optional?</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
</tbody>
</table>
| Credentials                     | **Data connections:** Credentials and other connection parameters, such as host, port, username, and password. If you exclude credentials, you must reconfigure the connection details after you restore the snapshot.  
  **Cloud storage:** Credentials required to access cloud storage where file-based data that users upload is stored. If you include file-based data in your snapshot, include the storage credentials if you plan to migrate the content to another environment. If you exclude credentials, you can use the Data Migration utility to download and then upload your data files separately. | Optional |
| Classic Content                 | Content that users create using Classic tools in Oracle Analytics Cloud, such as analyses, dashboards, and pixel-perfect reports.                                                                         | Always included |
| – Data Model and Subject Areas  | Data models and subject areas that users create.                                                                                                                                                              | Always included |
| – Catalog Content               | Catalog containing content that users create and save for future use, such as analyses, dashboards, reports, deliveries, agents, and so on.                                                             | Always included |
| – Shared Folders and Projects   | Content that is being shared, that is, content that everyone with access to Classic tools can see. This includes any data visualization projects saved in the shared folders.                               | Always included |
| – User Folders and Projects     | Content stored in user folders. Content that users create and store for their private use. This includes any data visualization projects users saved in their private folders.                                     | Optional  |
Options When You Restore a Snapshot

When you restore content from a snapshot you have several options. You can restore only the content that's inside the snapshot, restore everything in your environment, or restore a specific set of items in the snapshot (custom).

- **Replace Snapshot Content Only** - Everything in the snapshot that's supported in your environment is restored. Any content type excluded from the snapshot remains unchanged in your environment.

- **Replace Everything** - Replaces your entire environment using information in the snapshot. Any content type excluded from the snapshot is restored to its default state, that is, "no content". For example, if you chose not to include data flows in the snapshot, any data flows that exist on your system are deleted when you restore the snapshot and the data flow component is restored with default settings. There are some exceptions; if the snapshot doesn't contain any file-based data sets, plug-ins, or extensions these items are left unchanged.

  This option is useful if you want to:
  - Replace everything after something went wrong.
  - Migrate from another service.
  - Clone an existing service.

- **Custom** - You select the content you want to restore. If you don't want to restore certain content types, exclude them before you restore.

  In most cases, the options on restore are the same as the options when you take a snapshot. Some content types are always restored, while others are optional.

  If your snapshot contains items that your environment doesn't support, you see the message "Not supported in this environment".

Restoring a Snapshot Taken from a Different Product

You can take snapshots in several Oracle products; Oracle BI Enterprise Edition 12c, Oracle Analytics Cloud, and Oracle Analytics Server.

- **Unsupported Content**

  If you take a snapshot in one product and try to restore it in a different Oracle product, you might find the snapshot contains some items that the target environment doesn't support. When Oracle Analytics detects unsupported content, warning icons display on the Custom page to highlight unsupported items in the snapshot that won't be restored.

  For example, you take a snapshot in Oracle Analytics Cloud and include data replications, file-based data sets, plug-ins and extensions in the snapshot. When you restore the snapshot in Oracle Analytics Server, you notice that these items are marked *not supported*. Oracle Analytics Server doesn't allow you to include data replications, file-based data sets, plug-ins and extensions in an Oracle Analytics Server snapshot or import them from snapshots you created in other products.
Take Snapshots and Restore Information

You can take a snapshot of your system at any time.

Topics:

• Take a Snapshot
• Restore from a Snapshot
• Track Who Restored What and When
• Edit Snapshot Descriptions
• Delete Snapshots

Take a Snapshot

Administrators can take a snapshot of the system at any time.

1. Click Console.
2. Click Snapshots.
3. Click Create Snapshot.
4. Enter a short description for the snapshot to help you remember later why you took it.
   For example, why you created the snapshot and what it contains.
5. Select the content you want to include, Everything or Custom.
   • Everything - Include everything about your environment in the snapshot.
   • Custom - Select only the content types you want to save in the snapshot.
     Deselect any items that you don’t want.
6. Click Create.

The latest content is saved to a snapshot.

Restore from a Snapshot

If something goes wrong, you can easily restore your content to a previous working state from a snapshot. You also restore snapshots when you migrate content between environments.

Before you start, read these tips about restoring snapshots.

• As you start to restore the snapshot, users currently signed in have their session terminated.
• After you restore from a snapshot, allow time for restored content to refresh (for example, approximately 15 to 30 minutes for a large snapshot).
• You can restore snapshots taken from the same version as or an earlier version than your environment is currently running.
• When you restore a snapshot taken from a different environment, you must upload the data associated with your file-based data sets to the target environment.
To restore a snapshot:

1. Click **Console**.
2. Click **Snapshots**.
3. Select the snapshot that you want to use to restore your system.
4. Click **Snapshot Actions**.
5. Click **Restore** to return your system to the state when this snapshot was taken.
6. In the Restore Snapshot dialog, select only those elements you want to restore.
   
   For example, you may not want to include application roles if you’re restoring a snapshot taken from a pre-production environment, to a production environment. Pre-production roles often have different members to the production environment. If so, select **Custom** and deselect **Application Roles** before you restore.

   a. Select the **Restore** option you want.
      
      - **Replace Snapshot Content Only** - Restore only the content inside the snapshot. Don't remove content that exists on the target; only replace content that's inside the snapshot.
      
      - **Replace Everything** - Overwrite all your existing content. Replace your existing content with the content included in this snapshot (listed in the description field). Any content types not included in the snapshot, excluding file-based data sets, plug-ins and extensions, are removed and restored with default settings.
      
      - **Custom** - Select only the content types you want to restore. You can restore with content saved inside the snapshot or restore content with default settings if that content is missing from the snapshot.
         
         - Content saved inside the snapshot is listed in the description field.
         
         - Content not included in the snapshot is marked with a warning icon.
         
         ![](warning.png) Only restore content marked with a warning icon if you want to restore that content with default settings.
         
         If you don't want to restore everything, deselect all the items you want to keep.
   
   b. If you select **Custom**, select only those items you want to restore.

7. For auditing purposes, enter the reason why you're restoring.
   
   It's good practice to include a restore reason. Later on you might want to analyze the restore history, and this information can help you remember why you restored the snapshot.

8. Click **Restore**.
   
   A warning message is displayed because restoring a snapshot can be very disruptive.

9. Click **Yes** to restore the selected snapshot, or click **No** to abandon the restore.

10. Wait for the restore to complete, and then wait a few more minutes for the restored content to refresh through your system.

    The time it takes to restore your system depends on the size of your snapshot. For a large snapshot, allow approximately 15 to 30 minutes.
11. Sign out and then sign back in to see the restored content and inherit newly restored application roles, if any.

Track Who Restored What and When

You can check the restore history to learn exactly when and what content was restored, and to check for any errors during the restore process. This might be useful if you experience issues during or after you restore a snapshot.

1. Click Console.
2. Click Snapshots.
3. Click the Page menu and select Show Restore History.

Edit Snapshot Descriptions

You can add or update the description for any snapshot.

1. Click Console.
2. Click Snapshots.
3. Select the snapshot you want to edit.
4. Click Snapshot Actions.
5. Click Edit Name.
6. Update the description, and click OK.

Delete Snapshots

From time to time, delete snapshots that you don't need.

1. Click Console.
2. Click Snapshots.
3. Select the snapshot that you want to delete.
4. Click Snapshot Actions.
5. Click Delete to confirm that you want to delete the snapshot.

Download and Upload Snapshots

You can save snapshots to your local file system and upload them back to the cloud. Downloading and uploading snapshots enables you to back up and restore your content or migrate content between development, test, and production environments.

Topics:
- Download Snapshots
- Upload Snapshots
Download Snapshots

Use the Download option to save a snapshot to your local file system. This allows you to locally store and manage snapshots you take of your system.

The snapshot downloads as an archive file (.bar). The time it takes to download depends on the size of the snapshot .bar file.

If you haven't taken the snapshot yet, you'll need to do that first.

1. Click Console.
2. Click Snapshots.
3. Select the snapshot that you want to download.
4. Click Snapshot Actions .
5. ClickDownload.
6. Enter and confirm a password for the snapshot. The password must be between 8 and 50 characters long and contain at least one numeric character, one uppercase letter, and one lowercase letter.
   Don't forget this password. You'll be asked for this password if you try to upload the file in the future. For example, you may want to restore or migrate the content stored in the snapshot.
7. Click OK.
   The time it takes to download depends on the file size.

Upload Snapshots

You can upload a snapshot that you previously saved on your local file system. The time it takes to upload a snapshot depends on the size of the snapshot .bar file.

When you upload a snapshot, the file itself is uploaded to your system but the artifacts stored inside the snapshot aren't immediately available in your environment. Any snapshot you upload displays in the snapshot list. When you're ready to do so, you can overwrite your current artifacts, such as your catalog, by restoring the snapshot.

1. Click Console.
2. Click Snapshots.
3. Click the Page actions menu and select Upload Snapshot.
4. Use Browse to locate the snapshot that you want to upload.
   Select the BAR file (.bar) that contains your snapshot. You can upload snapshots taken from Oracle Analytics Cloud, Oracle Analytics Server, Oracle Business Intelligence Cloud Service, Oracle Data Visualization Cloud Service, and Oracle BI Enterprise Edition 12c.
5. Enter the snapshot password.
   This is the password that you specify whenever you download a snapshot to your local file system.
6. Click OK.

Migrate Oracle Analytics Cloud Using Snapshots

Download and upload features enable you to save snapshots to your local file system and upload them back to the cloud. Use these features to migrate between two different services, migrate between development, test, and production environments, and migrate service deployed on Oracle Cloud Infrastructure Classic to Oracle Cloud Infrastructure.

Topics:
- About Oracle Analytics Cloud Migration
- Typical Workflow to Migrate Oracle Analytics Cloud
- Migrate File-based Data

About Oracle Analytics Cloud Migration

It’s easy to migrate content and settings from one Oracle Analytics Cloud environment to another using snapshots. You can migrate everything or you can migrate specific types of content.

Prerequisites for Migration

Before you migrate user content using snapshots, verify your source and target environment:

- The source and target environment must both use Oracle Analytics Cloud 5.1.x or later. Snapshots taken from earlier versions don't capture the entire environment. If you’re not sure, ask your Oracle representative.
- If you haven’t done so already, create the target service on Oracle Cloud Infrastructure.
  See Create a Service with Oracle Analytics Cloud in Administering Oracle Analytics Cloud on Oracle Cloud Infrastructure (Gen 2).
- If you want to migrate file-based data, check the source and target environments are up and running, and configured with valid storage credentials.
  Storage access issues can prevent data file migration using snapshots. If this happens, you can use the Data Migration utility to download your data files and then upload them separately.

Items Not Migrated

Some Oracle Analytics Cloud artifacts aren’t included in snapshots. Non-Oracle Analytics Cloud artifacts aren’t included either.

<table>
<thead>
<tr>
<th>Items Not Migrated</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virus scanner configuration</td>
<td>Record the virus scanner configuration used in your source environment and use the same information to configure your virus scanner on the target. See Configure a Virus Scanner.</td>
</tr>
<tr>
<td>Items Not Migrated</td>
<td>More Information</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mail server configuration</td>
<td>Record the SMTP mail server configuration used in your source environment and use the information to configure your mail server on the target. See Set Up an Email Server to Deliver Reports.</td>
</tr>
<tr>
<td>Other saved snapshots in the source environment</td>
<td>If required, download individual snapshots that you want to migrate, and then upload them to the target. See Upload Snapshots.</td>
</tr>
<tr>
<td>Job history</td>
<td>Available in a future release.</td>
</tr>
</tbody>
</table>
| Users (and groups)                    | **Migrate from Oracle Identity Cloud Service**  
Use export and import features in Oracle Identity Cloud Service to migrate users and roles from one identity domain to another. See Manage Oracle Identity Cloud Service Users and Manage Oracle Identity Cloud Service Groups.  
**Migrate from Embedded WebLogic LDAP Server**  
Use the script `wls_l달dap_csv_exporter` to export users and groups to a CSV file that you can import on the target Oracle Identity Cloud Service. See Export Users and Groups from Embedded WebLogic LDAP Server. |
| Oracle Identity Cloud Service configuration | Use Oracle Identity Cloud Service in your target environment to reconfigure any user (or group) application role assignments that you configured on the source, reconfigure single sign-on (SSO), and so on. |
| Network configuration                 | Set up your network requirements in the target environment, as required.                                                                       |

**Typical Workflow to Migrate Oracle Analytics Cloud**

You use snapshots to migrate Oracle Analytics Cloud to another environment. Here's what you need to do.

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand how to migrate using snapshots</td>
<td>Understand what you can and can't migrate in snapshots and any prerequisites.</td>
<td>About Oracle Analytics Cloud Migration</td>
</tr>
<tr>
<td>Create the target service</td>
<td>Use Oracle Cloud Infrastructure Console to deploy a new service on Oracle Cloud Infrastructure.</td>
<td>Create a Service with Oracle Analytics Cloud</td>
</tr>
</tbody>
</table>
| Migrate users and groups         | Use export and import features in Oracle Identity Cloud Service to migrate users and roles from one identity domain to another.           | Manage Oracle Identity Cloud Service Users  
Export Users and Groups from Embedded WebLogic LDAP Server                           |
<p>|                                  | If your source system uses an embedded WebLogic LDAP server for identity management, use the <code>wls_l달dap_csv_exporter</code> script to export your users and groups to a CSV file. |                                                                                   |</p>
<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take a snapshot on the source</td>
<td>Capture the content you want to migrate on the source system.</td>
<td>Take a Snapshot</td>
</tr>
<tr>
<td>Download the snapshot locally</td>
<td>Download the snapshot that you want to migrate to your local file system.</td>
<td>Download Snapshots</td>
</tr>
<tr>
<td>Upload the snapshot to the target</td>
<td>Sign in to the target system and upload the snapshot.</td>
<td>Upload Snapshots</td>
</tr>
<tr>
<td>Restore the snapshot content</td>
<td>Select the newly uploaded snapshot in the list of saved snapshots and restore the content in the snapshot.</td>
<td>Restore from a Snapshot</td>
</tr>
<tr>
<td>Migrate data files</td>
<td>(Only if the restore process fails due to connection issues) Use the Data Migration utility to migrate data files from one environment to another.</td>
<td>Migrate File-based Data</td>
</tr>
<tr>
<td>Reconfigure your virus scanner</td>
<td>Record the virus scanner configuration in your source environment and use it to configure your virus scanner on the target.</td>
<td>Configure a Virus Scanner</td>
</tr>
<tr>
<td>Reconfigure your mail server</td>
<td>Record the SMTP mail server configuration in your source environment and use it to configure your mail server on the target.</td>
<td>Set Up an Email Server to Deliver Reports</td>
</tr>
<tr>
<td>(Optional) Migrate other snapshots</td>
<td>Download individual snapshots that you want to migrate and then upload them to your target environment, as required.</td>
<td>Download Snapshots Upload Snapshots</td>
</tr>
<tr>
<td>Migrate other Oracle Identity Cloud Service configuration</td>
<td>Use Oracle Identity Cloud Service in your target environment to reconfigure any user (or group) application role assignments that you configured on the source, reconfigure single sign-on (SSO), and so on.</td>
<td></td>
</tr>
</tbody>
</table>

**Migrate File-based Data**

Users upload data files, such as spreadsheets, to Oracle Analytics Cloud to create data sets. When you migrate to a new Oracle Analytics Cloud environment, you can take this file-based data with you. Sometimes, network connectivity or storage access issues might prevent you from migrating the data files in the snapshot. For such cases, Oracle Analytics Cloud offers a CLI utility (command-line interface) that enables you to move your data files to the new location. The snapshot CLI utility also moves any map-related plug-ins and extension files that users might upload for their data visualizations.

Only run the CLI utility if you see the message *Restore succeeded with errors – data restore failed* or similar when you try to restore a snapshot that contains data files.

The CLI utility allows you to move data files directly from one environment to another in a single step. Or if you prefer, you can download your file-based data to a ZIP file and then upload the data files to your chosen environment in two separate steps.

1. Check your environment details.
• Verify that the source and target system both use Oracle Analytics Cloud 5.3 or later. The CLI utility isn't available in earlier versions. If you're not sure, ask your Oracle representative.
• Check that the source and target system are both up and running, and Oracle Analytics Cloud is configured with valid storage credentials.
• Check your local environment. You need Java 1.8 or later to run the CLI utility.
• Make sure you can access the source environment and the target Oracle Analytics Cloud from the local environment where you plan to run the CLI utility.
• Verify the name and location of the snapshot that you downloaded earlier containing your file-based data. For example, /tmp/20190307095216.bar.

2. Download the CLI utility.
   a. In your target Oracle Analytics Cloud, click **Console** and then click **Snapshots**.
   b. Click the Page menu , select **Migrate**, then **Download Data Migration Utility**. Follow the instructions to save the migrate-oac-data.zip file locally.

3. Unzip migrate-oac-data.zip. The ZIP file contains three files:
   • migrate-oac-data.jar
   • config.properties
   • readme

4. If you want to migrate data files stored in your source environment directly to the target in a single step, configure the section [MigrateData] in config.properties.

```
[MigrateData]
# Migrate data files from a source Oracle Analytics Cloud environment (OAC) to a target Oracle Analytics Cloud environment.
# Specify the source environment as Oracle Analytics Cloud.
SOURCE_ENVIRONMENT=OAC
# Source Oracle Analytics Cloud URL. For example: https://sourcehost.com:443 or http://sourcehost.com:9704
SOURCE_URL=http(s)://<Source Oracle Analytics Cloud Host>:<Source Port>
# Name of a user with Administrator permissions in the source environment. For example: SourceAdmin
SOURCE_USERNAME=<Source Administrator User Name>
# Location of the source snapshot (.bar file). For example: /tmp/20190307095216.bar
BAR_PATH=<Path to Source Snapshot>
# Target Oracle Analytics Cloud URL. For example: https://targethost.com:443 or http://targethost.com:9704
TARGET_URL=http(s)://<Target Oracle Analytics Cloud Host>:<Target Port>
```
5. If you want to first download data files from your source Oracle Analytics Cloud to your local environment and subsequently upload the data files to the target Oracle Analytics Cloud environment, configure sections [DownloadDataFiles] and [UploadDataFragments] in config.properties.

[DownloadDataFiles]
# Download Data Files: Download data files from Oracle Analytics Cloud storage to a local repository
# Specify the source environment as Oracle Analytics Cloud.
SOURCE_ENVIRONMENT=OAC
# Source Oracle Analytics Cloud URL. For example: https://sourcehost.com:443 or http://sourcehost.com:9704
SOURCE_URL=http(s)://<Source Oracle Analytics Cloud Host>:<Source Port>
# Name of a user with Administrator permissions in the source environment. For example: SourceAdmin
SOURCE_USERNAME=<Source Administrator User Name>
# Location of the source snapshot (.bar file). For example: /tmp/20190307095216.bar
BAR_PATH=<Path to Source Snapshot>
# Local data file directory. Make sure you have enough space to download the data files to this directory. For example: /tmp/ mydatafiledir
DATA_FRAGMENTS_DIRECTORY=<Data Files Directory>
# Data fragment size. Data files are downloaded in fragments. Default fragment size is 500MB.
MAX_DATA_FRAGMENT_SIZE_IN_MB=500

[UploadDataFiles]
# Upload data files: Upload data files to the target Oracle Analytics Cloud.
# Target Oracle Analytics Cloud URL. For example: https://targethost.com:443 or http://targethost.com:9704
TARGET_URL=http(s)://<Target Oracle Analytics Cloud Host>:<Target Port>
# Name of a user with Administrator permissions in the target environment. For example: TargetAdmin
TARGET_USERNAME=<Target Administrator User Name>
# Local directory containing the data files you want to upload. For example: /tmp/mydatafiledir
DATA_FRAGMENTS_DIRECTORY=<Data Files Directory>
# Location of the source snapshot (.bar file). For example: /tmp/20190307095216.bar
BAR_PATH=<Path to Source Snapshot>

6. Run the migrate-oac-data.jar file in your local environment.
Syntax:

```
```

Where:

- **-config configfile**: Name of the config.properties file
- **-d**: Downloads data locally using information in config.properties
- **-help**: Displays help
- **-m**: Migrates data using source and target information in the config.properties file
- **-u**: Uploads data using information in the config.properties file

For example, to migrate data files in a single step:

```
java -jar migrate-oac-data.jar -m -config config.properties
```

For example, to download data files locally:

```
java -jar migrate-oac-data.jar -d -config config.properties
```

For example, to upload data files:

```
java -jar migrate-oac-data.jar -u -config config.properties
```

7. Sign in to your target Oracle Analytics Cloud.

8. To expose the data files in Oracle Analytics Cloud, you must restore the snapshot that you used to migrate the rest of your content for a second time. This time, you must select the Custom restore option.
   a. Open the Console, and click Manage Snapshots.
   b. Select the snapshot containing your data files.
   c. Select the Custom restore option, and then select the option File-based data. Deselect all other options.
   d. Click Restore.

9. Verify that your data files are available.
Perform Administration Tasks

This topic describes tasks performed by administrators managing Oracle Analytics Cloud.

Topics:

• Typical Workflow to Perform Administration Tasks
• Configure a Virus Scanner
• Set Up Social Channels for Sharing Visualizations
• Set Up a Public Container to Share Visualizations
• Set Up an Email Server to Deliver Reports
• Send Email Reports and Track Deliveries
• Enable Content Delivery Through Agents
• Manage the Types of Devices that Deliver Content
• Migrate from Oracle BI Enterprise Edition 11g
• Migrate from Oracle BI Enterprise Edition 12c
• Delete Unused Data Sets
• Manage Map Information for Analyses
• Register Safe Domains
• Manage How Content Is Indexed and Searched
• Monitor Users and Activity Logs
• Run Test SQL Queries
• Apply Custom Logos and Dashboard Styles
• Localize Catalog Captions
• Integrate with Oracle Enterprise Performance Management Platform Business Processes
• Replicate Data
• Track Usage
• Enable Custom Java Script For Actions
• Deploy Write-back
• Configure Advanced Options

Typical Workflow to Perform Administration Tasks

Here are the common tasks for Oracle Analytics Cloud administrators managing data visualization and enterprise modeling services.
<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage what users see and do</td>
<td>Configure what users see and do in Oracle Analytics Cloud using the Application Role page in the Console.</td>
<td>Manage What Users Can See and Do</td>
</tr>
<tr>
<td>Back up and restore content</td>
<td>Back up and restore the data model, catalog content, and application roles using a file called a snapshot.</td>
<td>Take Snapshots and Restore</td>
</tr>
<tr>
<td>Create database connections</td>
<td>Connect to one or more databases.</td>
<td>Manage Database Connections for Data Models</td>
</tr>
<tr>
<td>Set up virus scanning</td>
<td>Connect to your virus scanning server.</td>
<td>Configure a Virus Scanner</td>
</tr>
<tr>
<td>Set up social channels for content sharing</td>
<td>Enable users to share content on Twitter, Slack, Oracle Cloud Storage, and Oracle Content and Experience.</td>
<td>Set Up Social Channels for Sharing Visualizations, Set Up a Public Container to Share Visualizations</td>
</tr>
<tr>
<td>Set up email deliveries</td>
<td>Connect to your email server.</td>
<td>Set Up an Email Server to Deliver Reports</td>
</tr>
<tr>
<td>Enable agents to deliver content</td>
<td>Allow users to use agents to deliver their content.</td>
<td>Enable Content Delivery Through Agents, Suspend and Resume Deliveries, Restore and Enable Delivery Schedules</td>
</tr>
<tr>
<td>Manage the types of devices that deliver content</td>
<td>Configure devices for your organization.</td>
<td>Manage the Types of Devices that Deliver Content</td>
</tr>
<tr>
<td>Free up storage space</td>
<td>Delete data sources on behalf of other users to free up storage space.</td>
<td>Delete Unused Data Sets</td>
</tr>
<tr>
<td>Manage how content is indexed and searched</td>
<td>Set up how content is indexed and crawled so users always find the latest information when they search.</td>
<td>Manage How Content Is Indexed and Searched</td>
</tr>
<tr>
<td>Manage maps</td>
<td>Manage map layers and background maps.</td>
<td>Manage Map Information for Analyses</td>
</tr>
<tr>
<td>Register safe domains</td>
<td>Authorize access to safe domains.</td>
<td>Register Safe Domains</td>
</tr>
<tr>
<td>Manage session information</td>
<td>Monitor who is signed in and troubleshoot issues with analyses by analyzing the SQL queries and logs.</td>
<td>Monitor Users and Activity Logs</td>
</tr>
<tr>
<td>Change the default reporting page and dashboard styles</td>
<td>Change the default logo, page style, and dashboard style.</td>
<td>Apply Custom Logos and Dashboard Styles</td>
</tr>
<tr>
<td>Migrate from Oracle Business Intelligence Enterprise Edition 11g</td>
<td>Migrate reporting dashboards and analyses, data models, and application roles.</td>
<td>Migrate from Oracle BI Enterprise Edition 11g</td>
</tr>
<tr>
<td>Migrate from Oracle Business Intelligence Enterprise Edition 12c</td>
<td>Migrate reporting dashboards and analyses, data models, and application roles.</td>
<td>Migrate from Oracle BI Enterprise Edition 12c</td>
</tr>
</tbody>
</table>
Configure a Virus Scanner

To keep Oracle Analytics virus-free, Oracle highly recommends that you set up the virus scanning servers used by your organization, to scan any files that are uploaded to Oracle Analytics. Once set up, all files are checked. This includes data files that users might upload for analysis, and snapshots that you might upload to restore content or migrate content from another environment.

1. In the Oracle Analytics Home page, click the Navigator, and then click Console.
2. Click Virus Scanner.
3. Enter the host and port of the virus scanning server.
   For example, my.virus.scanning.serverexample.com.
4. Click Save.
5. To remove the current virus scanner configuration, click Delete.

Set Up Social Channels for Sharing Visualizations

Set up social channels, such as Twitter and LinkedIn, so it's easy for content authors to share their data visualizations with others.

Topics:
- About Sharing Content on Social Channels
- Enable Visualizations to be Shared on Twitter
About Sharing Content on Social Channels

Administrators can set up various social channels so that content authors can share their data visualizations on social platforms such as Twitter, LinkedIn, and Slack.

Once set up, social channels show up on the Export dialog for visualizations. For example, if you configure and activate Slack, users see an option to export their visualization to Slack when they click the Export icon.

For some social channels, such as LinkedIn, you must also set up public web storage.

<table>
<thead>
<tr>
<th>Social Channel</th>
<th>Requires Public Web Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twitter - App</td>
<td>No</td>
</tr>
<tr>
<td>Twitter - Web Intent</td>
<td>Yes</td>
</tr>
<tr>
<td>LinkedIn</td>
<td>Yes</td>
</tr>
<tr>
<td>Slack</td>
<td>No</td>
</tr>
</tbody>
</table>

Enable Visualizations to be Shared on Twitter

Administrators can set up a Twitter channel in Oracle Analytics, so that content authors can share their data visualization projects as a tweet on their organization's Twitter feed.

You can set up content sharing through Twitter in two ways:

- **Twitter App** - Share content through a predefined Twitter app, as described in this topic. Oracle recommend you use this approach.
- **Web Intent** - Share content on Twitter through a public web link. For this mode of integration, you must set up and configure public web storage. See Set Up a Public Container to Share Visualizations.

To enable Oracle Analytics to share data visualization projects through your organization’s Twitter app:
1. Obtain the client ID and client secret values for the Twitter app that you want to use to share data visualizations.
   a. Open Twitter Application Manager (that is, developer.twitter.com).
   b. Click the app that you want to use for tweets.
   c. On the Keys and Tokens tab, obtain the Consumer Key and Consumer Secret Key values.
   d. On the Permissions tab, select Read, write, and direct messages.

2. Configure the Twitter channel in Oracle Analytics.
   a. In the Oracle Analytics Home page, click the Navigator, click Console, and then click Social.
   b. For Service, select Twitter.
   c. Change Status to Active.
   d. For Application Name, enter the name of the app that you set up in Twitter Application Manager.
   e. For Client ID and Client Secret, enter the Consumer Key and Consumer Secret values that you obtained in Twitter Application Manager (Step 1).
   f. Click Update.
   g. Click Copy to Clipboard to copy the redirect URL for Oracle Analytics.

3. In Twitter Application Manager, configure the callback URL for Oracle Analytics.
   a. In Twitter Application Manager, click the app to use for tweets.
   b. On the App Details tab, click Edit and paste the clipboard content in the Callback URL field.
   c. Click Save.

4. Verify you can share a visualization on the Twitter channel.
   a. In Oracle Analytics, open a project.
   b. On the Visualize or Narrate canvas, click the Export icon.
   c. Click Twitter.

If you set up and activate the channel correctly, Twitter displays as an option on the Export menu.

Enable Visualizations to be Shared on LinkedIn

Administrators can set up a LinkedIn channel in Oracle Analytics, so that content authors can share their data visualization projects on the organization's LinkedIn feed.

1. Obtain the client ID and client secret values for the LinkedIn app that you want to use to share data visualizations.
   a. Open LinkedIn Developer Portal (that is, linkedin.com/developers/apps).
   b. Click the app that you want to use.
   c. On the Authentication page, obtain the Client ID and Client Secret values.

2. Configure the LinkedIn channel in Oracle Analytics.
   a. In the Oracle Analytics Home page, click the Navigator, click Console, and then click Social.
3. In LinkedIn Developer Portal, configure the redirect URL for Oracle Analytics.
   a. Select the app that you want to use.
   b. On the App Details tab, click Edit and paste the clipboard content in the Authorized Redirect URLs field.
   c. Click Save.

4. If you haven't done so already, configure a public web storage container on Oracle Cloud that Oracle Analytics can use to share visualizations on LinkedIn.
   See Set Up a Public Container to Share Visualizations.

5. Verify you can share a visualization on the LinkedIn channel.
   a. In Oracle Analytics, open a project.
   b. On the Visualize or Narrate canvas, click the Export icon.
   c. Click LinkedIn.

If you set up and activate the channel correctly, LinkedIn displays as an option on the Export menu.

Enable Visualizations to be Shared on Slack

Administrators can set up a Slack channel in Oracle Analytics, so that content authors can share their data visualization projects on their organization's Slack app.

1. Obtain the client ID and client secret values for the Slack app that you want to use to share data visualizations.
   a. Open the Your Apps page in Slack (that is, https://api.slack.com/apps).
   b. Select the app that you want to use or create a new one.
   c. On the Basic Information tab, navigate to the App Credential section and obtain the Client ID and Client Secret values.

2. Configure the Slack app in Oracle Analytics.
   a. In the Oracle Analytics Home page, click the Navigator, click Console, and then click Social.
   b. For Service, select Slack.
   c. Change Status to Active.
   d. For Application Name, enter the name of the app that you set up in Slack.
   e. For Client ID and Client Secret, enter the values that you obtained in Slack (Step 1).
f. Click **Update**.
g. Click **Copy to Clipboard** to copy the redirect URL for Oracle Analytics.

3. In Slack, configure the callback URL for Oracle Analytics.
   a. Open the Your Apps page in Slack.
   b. Select the app that you want to use.
   c. On the **Basic Information** tab, click **OAuth and Permissions**.
   d. Click **Add New Redirect URL**, paste the clipboard content in the **Redirect URL** field, and click **Add**.
   e. Click **Save URLs**.

4. Verify you can share a visualization on the Slack channel.
   a. In Oracle Analytics, open a project.
   b. On the Visualize or Narrate canvas, click the **Export** icon.
   c. Click **Slack**.

   If you set up and activate the channel correctly, **Slack** displays as an option on the **Export** menu.

### Set Up a Public Container to Share Visualizations

Administrators can set up a public web storage container in Oracle Cloud so that content authors can share their data visualizations with others.

1. Create the public container in Oracle Cloud.
   a. In Oracle Cloud Infrastructure Console, navigate to **Object Storage**.
   b. On the Object Storage tab, click **Create Bucket**, and create a container with a suitable name, such as `publicanalytics`.
   c. Select the bucket, and click **Update Visibility**.
   d. Select **Public**, and verify that **Allow users to list objects from this bucket isn’t selected**.
   e. Click **Save**.

2. Configure the public web store in Oracle Analytics.
   a. In the Oracle Analytics Home page, click the **Navigator**, click **Console**, and then click **Social**.
   b. For **Service**, select **Public Web Store**.
c. To specify a public container for the first time or change the existing container, click **Edit**.

d. **Enter Storage Container URL**.

Use the REST endpoint URL format:

https://swiftobjectstorage.region.oraclecloud.com/v1/object-storage-namespace/public-bucket-name

For example: https://swiftobjectstorage.us-ashburn-1.oraclecloud.com/v1/oacpaas1/publicanalytics

See Oracle Cloud Infrastructure documentation, *Ways to Access Object Storage*.

e. For **Storage User** and **Storage Password**, enter the user name and password of a user with read and write access to the public container.

f. Click **Save**.

If you decide to use a different public container in the future, links to content that people have already shared through the existing public container continue to work but they can't be updated. Newly shared content is stored in the new location.

g. Change **Status** to **Active**.

After you set up and activate the channel, **Public Web Storage** displays as an option on the Export menu.

---

**Set Up an Email Server to Deliver Reports**

Connect to your organization's mail server, so analysts can email their reports and data visualizations directly from Oracle Analytics.

1. In the Oracle Analytics Home page, click the **Navigator**, and then click **Console**.

2. Click **Mail Server**.

3. Enter the name of the **SMTP Server** you want to use to deliver emails.

   For example, mymail.example.com.

4. Enter the **Port** number.

   Common SMTP ports include:
   
   • 25 *(Connection Security = None)*
   
   • 465 *(Connection Security = SSL/TLS)*
   
   • 587 *(Connection Security = STARTTLS)*

5. Enter the name and email address that you want to see in the “From” field of emails delivering reports (**Display name of sender** and **E-mail address of sender**).

   For example, Joe Brown and joseph.brown@example.com.

6. Click **Test** to verify the connection.

   If you want to test the connection you must do so before you configure any security settings.

7. Optional: If the mail server requires authentication:
a. Select **Authenticated**.

b. Enter the **Username** and **Password** for a user with access to the mail server.

8. Optional: To set up a secure mail server:

a. Click **Connection Security**, and select the appropriate security protocol for your mail server.

   - **SSL/TLS**: Select if your mail server uses SSL or TLS. The port value defaults to 465.
   - **STARTTLS**: STARTTLS is a way to take an existing insecure connection and upgrade it to a secure connection using SSL or TLS. The port value defaults to 587.

In **TLS Certificate**, the **Default Certificate** is selected for you. The default certificate allows encrypted mail server communication. In most cases, you don’t need to provide a compatible certificate as most mail servers can use the default certificate, including Office 365.

b. Optional: Upload a custom TLS certificate. In **TLS Certificate**, select **Custom Certificate**, and then click **Select** to navigate to the certificate file (.pem).

If you haven’t configured a virus scanner, you're prompted to configure one now or proceed without a virus scanner.

9. Click **Save**.

   Allow some time for your changes to refresh through your system and Email menu options to display.

**Example - Oracle Cloud Infrastructure Email Delivery Settings**

You can configure Oracle Analytics Cloud to send emails from the SMTP mail server available with Oracle Cloud Infrastructure.

1. In Oracle Cloud Infrastructure Console, configure Email Delivery.

   a. Sign-in to your Oracle Cloud account with permissions to configure Email Delivery.

   b. In Oracle Cloud Infrastructure Console, click in the top left corner.

   c. Under **Solutions and Platform**, select **Email Delivery**.

   d. On the **Email Approved Senders** page, set up an approved sender for the **From** email address that you want to use to send emails through the mail server.
Refer to Oracle Cloud Infrastructure documentation for details. See Managing Approved Senders.

e. Select Email Configuration, and make a note of the Server Name, Port, and that Transport Layer Security (TLS) is used on the connection.

Refer to Oracle Cloud Infrastructure documentation for details. See Configure the SMTP connection.

f. If you've not already done so, click Manage SMTP Credentials to generate SMTP credentials for a user with permissions to manage email.

Enter a Description, such Oracle Analytics Cloud credentials, and click Generate SMTP Credentials.

Copy the Username and Password for your records.
Refer to Oracle Cloud Infrastructure documentation for details. See Generate SMTP credentials for a user.

2. In Oracle Analytics Cloud, configure the SMTP settings for your mail server.
   a. Click Console.
   b. Click Mail Server, and configure SMTP settings for your mail server.
   c. In SMTP Server, specify the name of your email server. For example, smtp.us-ashburn-1.oraclecloud.com.
   d. In Port, specify 587.
   e. In Display name of sender, specify the name you want to appear in the From field of your emails. For example, Oracle Analytics.
   f. In Email address of sender, specify the email address of the approved sender you configured for email delivery. For example, your_login_account@example.com.
   g. In Authenticated, select this option.
   h. In Username, specify the username you recorded after generating SMTP credentials for the mail server. For example, ocid1.user.oc1.aaaaaaalgtwnjke11....
   i. In Password, specify the password generated for this user.
   j. In Connection Security, specify STARTTLS.
   k. In TLS Certificate, specify Default Certificate.
   l. Click Save.

   Allow some time for your changes to refresh through your system and Email menu options to display.

3. To test your mail server settings, try to send a report by email or create an agent to deliver the report.

   See Send Email Reports Once, Weekly, or Daily or Create Agents to Deliver Content.

   If you receive test emails delivered using the email account, you successfully configured your mail server.
Third-Party Mail Servers

You can configure Oracle Analytics Cloud to send emails from third-party SMTP mail servers. For example, from providers such as Google and Microsoft Office 365.

Topics

• Example - Google Mail Server Settings
• Example - Office 365 Mail Server Settings

Example - Google Mail Server Settings

You must switch off several security options in your Google account if you want to deliver content using a Gmail account. Check the security settings on your Google account, if you have issues connecting to a Gmail server or see "Handshake Failed" messages.

Note:

Switching off security features makes your Google account less secure, so you might consider using a different SMTP mail server. If you decide to use Gmail, you do so at your own risk.

1. Configure security settings on your Google account.
   a. Sign-in to your Google account.
      For example: https://myaccount.google.com/security
   c. Switch off 2-Step Verification.
   d. Switch off Use Your Phone to Sign In.
   e. Switch on Less secure app access.
   f. Unlock CAPTCHA to allow applications, such as Oracle Analytics, to access the Google account.
      Navigate to: https://www.google.com/accounts/DisplayUnlockCaptcha

2. In Oracle Analytics Cloud, configure the SMTP settings for your mail server.
   a. Click Console.
   b. Click Mail Server, and configure SMTP settings for your mail server.
   c. In SMTP Server, specify the name of your email server. For example, smtp.gmail.com.
   d. In Port, specify 587.
   e. In Display name of sender, specify the name you want to appear in the From field of your emails. For example, Oracle Analytics.
f. In **Email address of sender**, specify the email address of the approved sender you configured for email delivery. For example, your_login_account@example.com.

g. In **Authenticated**, select this option.

h. In **Username**, specify your Google email address. For example, my.example@gmail.com.

i. In **Password**, specify the password generated for this user.

j. In **Connection Security**, specify **STARTTLS**.

k. In **TLS Certificate**, specify **Default Certificate**.

l. Click **Save**.

Allow some time for your changes to refresh through your system and Email menu options to display.

3. To test your Gmail server settings, try to send a report by email or create an agent to deliver the report.

   See **Send Email Reports Once, Weekly, or Daily or Create Agents to Deliver Content**.

   If you receive test emails delivered using the Gmail account, you successfully configured the mail server.

**Example - Office 365 Mail Server Settings**

Your administrator must switch off 2-step verification (also called multi-factor authentication) if you want to deliver content using an Office 365 mail account. If you have issues connecting to your Office 365 mail server or see "Handshake Failed" messages, check the security settings on your Office 365 account.

**Note:**

Switching off security features makes your Office 365 account less secure, so you might consider using a different SMTP mail server. If you decide to use Office 365, you do so at your own risk.

1. Verify security settings on your Office 365 account.
   
   a. Sign-in to your Office 365 account.

      If 2-step verification is enabled, you sign in with your password (step 1) and a code sent to your phone, another device, or app (step 2).

      If you're not asked to enter a code (step 2), 2-step verification is switched off.

   b. If 2-step verification is enabled, ask your administrator to turn off multi-factor authentication for your account.

      If your administrator can't exclude you from the multi-factor authentication policy you must use a different SMTP mail server.

2. In Oracle Analytics Cloud, configure the Office 365 mail server settings for your mail server.
   
   a. Click **Console**.
b. Click **Mail Server**, and configure SMTP settings for your mail server.

c. In **SMTP Server**, specify the name of your email server. For example, smtp.office365.com.

d. In **Port**, specify 587.

e. In **Display name of sender**, specify the name you want to appear in the **From** field of your emails. For example, Oracle Analytics.

f. In **Email address of sender**, specify the email address of the approved sender you configured for email delivery. For example, your_login_account@example.com.

g. In **Authenticated**, select this option.

h. In **Username**, specify a valid user name for Office 365. Typically, your email address. For example, my.name@yourdomain.com.

i. In **Password**, specify the password generated for this user.

j. In **Connection Security**, specify STARTTLS.


l. Click **Save**.

Allow some time for your changes to refresh through your system and Email menu options to display.

3. To test the mail server settings, try to send a report by email or create an agent to deliver the report.

   See Send Email Reports Once, Weekly, or Daily or Create Agents to Deliver Content.

If you receive test emails delivered using the Office 365 account, you successfully configured the mail server.

**Enable Content Delivery Through Agents**

You can use agents to deliver your content. This feature isn't enabled automatically. To display the **Create Agent** link on the Classic home page, grant the **View Delivers Full UX** privilege to the BI Content Author application role.

You also have to enable this feature if you import a snapshot taken from earlier versions that don't support the **Delivers Full UX** privilege.

1. On the Classic Home page, click the user profile icon and then click **Administration**.

2. Click **Manage Privileges**.

3. Navigate to the **Delivers** section, and grant **View Delivers Full UX** to **BI Content Author**.

Now, users with the BI Content Author application role see the **Create Agent** link on the Classic Home page.
Send Email Reports and Track Deliveries

Send Email reports to anyone inside or outside the organization or use agents to send reports to a range of other devices. Keep everyone up-to-date with regular daily or weekly reports.

Topics

• Send Email Reports Once, Weekly, or Daily
• Track the Reports You Distribute By Email or Through Agents
• Email Security Alert

Send Email Reports Once, Weekly, or Daily

Send Email reports to one or more recipients directly from the catalog. It’s easy to distribute reports this way and quicker than downloading a report and mailing it from your email client. To keep everyone up-to-date, schedule daily or weekly emails.

1. On the Classic Home page, click **Catalog**.
2. Navigate to the item you want to email, click the **More** action menu, and select **Email**.
3. Enter the email address for one or more recipients.
   Separate multiple email addresses with a comma. For example: jane.white@abc.com, steve.brown@abc.com
4. Customize the **Subject** line.
5. Send the email **Now** or click **Later** to set a date and time in the future.
6. To email report updates on a daily or weekly basis, click **Repeat** and then select **Daily** or **Weekly**.

You can check the status of email deliveries from the Console.

Email Security Alert

Content that you send by email isn’t encrypted. It’s your responsibility to safeguard any sensitive data that you send.

See Send Reports by Email and Track Deliveries.

Track the Reports You Distribute By Email or Through Agents

Track the reports you’ve chosen to send to people by email from the Console. Quickly see when reports were sent and which items are pending. Review, change, or delete your deliveries (scheduled or completed) from the same page.

Any agents that you set up to deliver content are displayed in the Console too. This way, all your delivery information is in one place.

You can filter the deliveries by their status to track deliveries most important to you. The various status messages are explained here.
<table>
<thead>
<tr>
<th>Delivery Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canceled</td>
<td>Someone canceled the delivery. Users can cancel any delivery that they own.</td>
</tr>
<tr>
<td>Completed</td>
<td>Delivery ran successfully.</td>
</tr>
<tr>
<td>Disabled</td>
<td>Users can temporarily disable any delivery or agent that they own through the catalog. For example, you might stop a job running on its defined schedule if you want to edit the report or change who sees the report.</td>
</tr>
<tr>
<td>Failed</td>
<td>Delivery ran as scheduled but it didn’t complete successfully. Click the error icon to find out what went wrong so you can fix it.</td>
</tr>
<tr>
<td>Not Scheduled</td>
<td>No one has set up a schedule for the delivery or the scheduled run date is for a date in the past (rather than a future date).</td>
</tr>
<tr>
<td>Pending</td>
<td>Delivery is scheduled to run. For example, you might have a delivery scheduled to run every day at 9am. If you look at the delivery the night before or at 8am, it shows as pending to indicate it’s due to run soon.</td>
</tr>
<tr>
<td>Running</td>
<td>Delivery is in progress.</td>
</tr>
<tr>
<td>Suspended</td>
<td>Administrators can temporarily suspend deliveries that other users set up. For example, before you migrate from a test environment to a production environment, your administrator might suspend deliveries in the test environment, and resume them in the production environment.</td>
</tr>
<tr>
<td>Timed out</td>
<td>Delivery timed out because it took too long to complete.</td>
</tr>
<tr>
<td>Try Again</td>
<td>Something went wrong. Try to run the delivery again.</td>
</tr>
<tr>
<td>Warning</td>
<td>Delivery ran as scheduled but it wasn't 100% successful. For example, the delivery specifies 10 recipients but only 9 of them received it because 1 of the email addresses was incorrect. Click the error icon to find out more.</td>
</tr>
</tbody>
</table>

To track deliveries from the Console:

1. Go to the Home Page, click **Navigator**, and then click **Console**.
2. Click **Monitor Deliveries**.
   Initially, minimal historical information is displayed to prevent clutter. To see more detail, click the Action menu for the page and select **History Level**.
3. To filter deliveries by name, start typing the name of the delivery you’re looking for in the search box.
Or click **Today**, to quickly navigate down the list to the first report scheduled for delivery today.

You can also filter by delivery status. Click the Filter icon and select one or more from: Failed, Warning, Completed, Canceled, Timed Out, Try Again, Running, Pending, Disabled, Suspended, Not Scheduled.

4. To preview the content, click the Actions menu for the delivery, and select **View Report**.

   This option isn't available if the delivery is generated by an agent.

5. To edit a delivery, click the Actions menu for the delivery, and select **Edit Delivery**.

   - Email deliveries — Update the email options.
   - Agent deliveries — Edit the agent associated with the delivery.

6. To disable a delivery, click the Actions menu for the delivery, and select **Disable Delivery**.

   If you want to enable the delivery later on, click the Actions menu for the delivery, and select **Edit Delivery**.

7. To delete a delivery and all future scheduled deliveries, select **Delete Delivery**, then **OK** to confirm.

8. To delete delivery information only, select **Delete Delivery History** from the Actions menu.

   Use this option to remove historical information that you don't want to see any more.

### Suspend and Resume Deliveries

Administrators can temporarily suspend any delivery, at any time.

1. In the Oracle Analytics Home page, click the **Navigator**, and then click **Console**.

2. Click **Monitor Deliveries**.

3. To access everyone’s deliveries in addition to your own, click the Action menu for the page, and select **Admin View**.

4. To suspend a delivery, click the Action menu for the delivery and select **Suspend Delivery**.

   To suspend multiple deliveries at once, select **Shift** + click or **Ctrl** + click to select all the deliveries you want to suspend, and then click the Action menu and select **Suspend Delivery**.

5. To resume a delivery, click the Action menu for the delivery and select **Resume Delivery**.

### Restore and Enable Delivery Schedules

When you restore content from a snapshot or migrate content from a different environment, delivery information is restored but it isn't activated right away. Initially, restored deliveries are disabled. Click the **Edit Delivery** option to re-activate them.

1. In the Oracle Analytics Home page, click the **Navigator**, and then click **Console**.

2. Click **Monitor Deliveries**.
3. To restore deliveries, click the **Action** menu for the page and select **Restore Deliveries**.

   Click **OK** to confirm. Recently restored deliveries display 🔄 **Disabled**.

4. To activate a delivery, click the Action menu for the delivery, and select **Edit Delivery**.

   Enable, and if necessary, redefine the delivery schedule.

5. To prevent clutter, delete any history or deliveries you don't want anymore. Click the Action menu for the delivery:
   - **Delete History** — Removes historical information that you don't want to see any more.
   - **Delete Delivery** — Deletes the delivery and all its history.

---

### Manage the Types of Devices that Deliver Content

Oracle Analytics Cloud can deliver content to a wide range of devices. You can add more devices for your organization, if users want to receive content on a device that's not on the list. You can't edit or delete default devices, such as AT&T Wireless.

1. On the Classic Home page, click the user profile icon and then click **Administration**.
2. Click **Manage Device Types**.
3. To define a new type of device:
   a. Click **Create New Device Type**.
   b. Enter information about the device, and click **OK**.
4. To edit a device that you added:
   a. Click **Edit**.
   b. Make your changes, and click **OK**.
5. To delete a device that you added:
   a. Click **Delete**.
   b. Click **OK** to confirm.

---

### Delete Unused Data Sets

Your service comes with a fixed storage quota for data files. From time to time, administrators might need to delete data sets on behalf of other users to free up storage space and enable the service to function properly. For example, a user uploads data files and then their account is disabled when they leave the company.

1. Click the **Page** menu on the Home page, and select **Data Set Management**.
2. To free up some space, click the **Options** menu for a user with files you want to delete.

3. Select one of the following options:
   - **Delete Private** to delete non-shared (private) data files.
   - **Delete All** to delete all data files.

### Manage Map Information for Analyses

Administrators set up map information for dashboards and analyses so that users can visualize and interact with data through maps.

**Topics**

- Set Up Maps for Dashboards and Analyses
- Edit Background Maps for Dashboards and Analyses

### Set Up Maps for Dashboards and Analyses

As the administrator, you define how data columns that you've modeled are displayed on maps. You configure the map data, then users can analyze the data in map views.

Map views allow users to display data on maps in different formats and to interact with data. As the administrator, you must configure the metadata that defines the mapping between business intelligence data and spatial data.

Spatial features such as shape definitions are managed by database administrators for your instance. If a shape geometry definition doesn't exist for a particular column
value, then the shape can't be shown on the map and might affect user interactions on the map.

1. On the Classic Home page, click the user profile icon, Administration, and then click Manage Map Data.

2. On the Layers tab, click Import Layers from the toolbar.

3. In the Import Layers dialog, select the layers you want to use and click OK.

4. Back on the Layers tab, select a layer and click the Edit Layers button.

5. In the Edit Layer dialog, associate layers with columns so that users can display data in the map view.
   a. In Name, specify the layer name to display to users who work with map views.
   b. In Location, specify which background map the layer originates from. Click Location to select a different layer.
   c. In Description, specify information to help users when they hover over the layer name in the Map Formats area.
   d. In Layer Key, specify the column of spatial data that you can associate with data. Each column value corresponds to a "shape" that originates from the background map. For example, a MY_CITIES layer might have a layer key called CITY. The default value is a "best guess". Select the appropriate column from the list.

There are various reasons why a country such as Mexico might be drawn as a white area on a map:

- The column has a null value for the country of Mexico, but a shape exists for Mexico in the spatial column.
- The column has a value for the country of Mexico, but no shape exists for Mexico in the spatial column.
- The column has a value for the country of Mexico and the shape exists for Mexico in the spatial column, but the names are mismatched. The data columns might have the value MEX and the spatial column might have MXC.

   e. In BI Key Delimiter, Review the single ASCII character (such as a comma or underscore) to function as a delimiter for combining the data columns that form a key. This value is available only when multiple columns are specified for one key.

   f. In Geometry Type, specify whether the layer is a polygon, point, or line geometry layer. The type that you select affects the formatting that users can apply to the layer.
g. In **BI Key Columns Area**, specifies the columns of data that you want to associate with the layer. You can have multiple columns associated with a single layer. You can select multiple columns from one subject area or from multiple subject areas. The columns and delimiter that you select must exactly match the name of the **Layer Key** value. Suppose the Layer Key value is `STATE_CITY`. You must select the `STATE` and `CITY` BI data columns and specify the underscore character in the **BI Key Delimiter** field.

Use the various options in this area:

- **Add** — Displays the list of available subject areas. Select a subject area and select all the data columns that you want to associate with the layer.
- **Delete** — Deletes the selected key column.
- **Edit** — Lets you edit the data columns associated with a layer.

When a content designer creates a map view, a default main map is selected as the basis for that map view. If at least one data column from the analysis is associated with a layer that's associated with a main map, then that main map is selected by default.

h. In **Show Qualified Names**, specifies whether to display the fully qualified name of the column in the BI Key Columns Area or simply the column name.

6. Click **OK** to close the dialog.

7. Click the Background Maps tab, then click the **Import Background Maps** button.

8. In the Import Background Maps dialog, select the connection in the **Look in** field and the main maps to use, then click **OK**.

   The connection that you select for the main map can be different from the connection for the layers or images.

9. See **Editing Background Maps** for the steps required to prepare the background maps.

After you've added background maps and map layers, you can use the information to create a static image for a map. The static image is displayed to content designers and users who work with map views.
Edit Background Maps for Dashboards and Analyses

You edit background maps to ensure that users have a seamless experience with map views in dashboards and analyses.

A background map is a non-interactive map that serves as a base for the map view. It might display a satellite image or a map with roads. The background map specifies the order of layers on the map view.

The ordering of map layers is very important. You must pay close attention to ensure that users have a seamless experience while navigating on the map (that is, drilling and zooming). In the Edit Background Map dialog, you assign each layer a minimum and maximum zoom range. Given that the map zoom slider can slide only from bottom to top vertically, the layers with lower minimum zoom levels are placed at the bottom of the slider. Ensure that the layer grid on the Interactive BI Layers section of the dialog follows a similar pattern, so that you place layers with lower minimum zoom levels at the bottom of the list.

Layer ordering becomes irrelevant when the zoom ranges of layers don't intersect on the scale. Ordering becomes very important when layers have a common minimum and maximum zoom range. Use care to ensure that detailed layers aren't hidden by the aggregated layers during drilling or zooming operations.

1. On the Classic Home page, click the user profile icon, Administration, and then click Manage Map Data.

2. Click the Background Maps tab, select a map, then click the Edit Background Map button to display the Edit Background Map dialog.

3. Specify the name and description of the map, which is displayed as a tooltip for the map when selecting a map from the list, when editing the map view.

4. The Location field displays the location of the background map in the data source. Click the Location button to change to a different map. If you select a background map that includes a different number of zoom levels, then the zoom levels are automatically adjusted for the layers that are associated with the map by scaling their ranges.

5. Click the Add Layers button to display a list of the layers that have been imported on the Layers tab, then select the layers to add to the map. This button is unavailable when all layers from the Layers tab have been added to the background map.

When you add a layer that's part of the map definition, the layer displays at its default zoom levels. If the layer isn't part of the map definition, then specify the zoom levels yourself.

The layers are listed from bottom to top, in terms of how they're applied to the map. A sample order is Countries, States, Cities. The lower level layers generally have the lower zoom levels. For example, if you have a States layer and a Cities layer, then include lower zoom levels for State than City.
6. Click the **Sort Layers By Zoom Level** button to list the layers in ascending or descending order based on visibility on the map. This button is unavailable when layers are listed in the proper order.

The sort order that's specified here doesn't affect the order in which layers are applied on the map. Instead, the sorting order affects the zoom levels. For example, the States layer might have zoom levels 1 through 3 and the Cities layer has zoom levels 4 through 9. The lower layers have the lower zoom level numbers. The zoom levels that you specify correspond to the tick marks on the zoom slider on the map.

You can include both layers that have been associated with a column by using the Edit Layer dialog and layers that haven't been associated. Ensure that BI layers are ordered higher than non-BI layers. If a non-BI layer is ordered higher than any BI layers, then the non-BI layer is displayed on top of the lower BI layers on the map, which prevents the BI layers from being interactive.

7. Click the **Turn On Layer Visibility** or **Turn Off Layer Visibility** button to control the visibility of layers on the map. Use the buttons to indicate whether the layer is visible in the Preview map in this dialog only. The layer is still visible on a map view. You can modify the zoom levels for a layer with a visibility turned off.

8. Click a cell under a zoom level for a layer to affect the zoom level:
   - If you click a blue cell that's between other blue cells, then you see a popup menu with **Clear Before** and **Clear After** buttons, which allow you to change the zoom level in either direction. For example, if you click the cell for zoom level 4 and click the eraser on the right, then all cells to the right are cleared for that zoom level.
   - If you click a blue cell that at the end of a line of blue cells, then the cell turns white to indicate that it's no longer part of that zoom level.
   - If you click a white cell, then you increase the zoom level on either side of the existing blue cells. For example, suppose cells 4 through 6 are colored blue to reflect the zoom level. If you click in cell 2, then the zoom level becomes 2 through 6.

If you don't set any zoom levels for a layer, then that layer doesn't display on the map.

9. Click the action icon beside the layer name to display a menu from which you can make various selections:
• **Delete** — Removes the layer from this background map. The layer continues to be available on the Layers tab and can be added to this area again.

• **Move Up** or **Move Down** — Moves the layer up or down so you can specify the order in which layers are applied to the map.

• **Reset to Default Visibility** — Resets the current visibility range for this layer as defined in the underlying map definition. If this layer isn’t natively associated with the map, then this option is disabled for that layer.

10. Use the yellow border that surrounds the column of boxes for a zoom level to determine which zoom level is currently displayed in the map area.

11. Use the panning and zooming controls to specify how the map is displayed to users. If you hover over the zoom slider, then you see tooltips that specify the names of the layers that are currently associated with that zoom level.

12. Click **OK**.

## Register Safe Domains

For security reasons, you’re not allowed to add external content to reports or embed your reports in other applications unless your administrator considers it safe to do so. In addition, administrators allow self-service connection to some data sources such as Dropbox and Google Drive. Only administrators can register safe domains.

Only authorized users may access the content. Users are prompted to sign in when they access content on these safe domains, unless your service is set up with Single Sign On (SSO).

After you’ve registered a domain as safe, users need to sign out and sign back in to access content from that source.

1. In the Oracle Analytics Home page, click the **Navigator**, and then click **Console**.

2. Click **Safe Domains**.

3. Click **Add Domain** to register a safe domain.

4. Enter the name of the safe domain. Use formats such as:
   - www.example.com
   - *.example.com
   - https:

5. Specify the types of resources to allow for each domain.
   - Select the types of resources you want to allow, for example, images, scripts, and so on.
   - Deselect to block any resource types you don’t consider safe.

6. If you want to allow users to embed their projects, reports, and dashboards in external content located on the domain, select **Embedding**.
7. To remove a domain, select it and click the **Delete** icon.

### Manage How Content Is Indexed and Searched

Administrators can set up how data sources and catalog content are indexed and crawled so that users find the latest content when they search or create visualizations from the search bar on the Home page.

#### Topics

- Configure Search Indexing
- Schedule Regular Content Crawls
- Monitor Search Crawl Jobs

#### Configure Search Indexing

The catalog and data models are crawled and indexed so users can quickly find content when they search or visualize data from the search bar on the Home page.

The **Data Model** pane on the Search Index page controls which subject areas are indexed. The indexing of an uploaded file-based data set is controlled on its Inspect dialog. See Index File-Based Data Sets.

1. In the Oracle Analytics Home page, click the **Navigator**, and then click **Console**.
2. Click **Search Index**.
3. To ensure users find the most recent information when they search for subject area columns, in the **Data Model** pane, select **Enable Data Model Crawl** and use the **Select Data Models to Index** and **Crawl Status** columns to browse for and specify which subject areas and dimensions you want to index. Select only the items needed to create useful search results. Indexing all items yields too many similar search results.
   - Choose **Index Metadata Only** to index dimension and measure names only. This is the default setting.
   - Choose **Index** to index dimension names, measure names, and values.

Indexing values provides additional functionality for users who visualize data values from the search bar on the Home page. Be aware that selecting this
option can be costly because it indexes values for all of the columns in all subject areas of the data model.

4. To ensure that users find the most recent information when they use the Home page to search for catalog content (projects, analyses, dashboards, and reports), in the Catalog pane, confirm that the Enable Catalog Crawl tab is selected and specify what to index. In most cases you shouldn't have to modify the settings in this tab.
   
   • Confirm that the Index User Folders field is selected. Oracle recommends that you don't deselect this option. If deselected then no folders in the catalog are indexed and the Home page search returns very limited and possibly no results.
   
   • Use the Catalog Object (Shared Folders) list to browse for and specify which folders, subfolders, and items you want to index or not index. Select only the items needed to create useful search results. Indexing all items yields too many similar search results.
   
   • Oracle recommends that you don't set the Crawl Status field to Don't Index as a way of hiding an item from users. Users won't see the item in search results or on the Home page, but are still able to access the item. Instead, use permissions to apply the proper security to the item.

Schedule Regular Content Crawls

The administrator selects which folders to crawl and schedules when and how often to crawl the content.

1. In the Oracle Analytics Home page, click the Navigator, and then click Console.
2. Click Search Index.
3. Select Data Model or Catalog.
4. Use the Schedule options to specify when and how often to run the crawl.
   
   The index updates automatically as users add or modify catalog content.
   
   By default, a crawl runs once a day. Normally you won't need to change this default. But in some cases you might want to schedule a crawl as needed (for example, after importing a BAR file or if automatic indexing didn't run).
   
5. For Languages, select all the languages you want to create indexes for. Crawl results are added to the index in the languages that you specify. For example, if your company's headquarters are in the United States, and you have offices in Italy, then you can choose English and italiano to create indexes in both English and Italian.
6. Click the Save icon to save your changes.

Monitor Search Crawl Jobs

Administrators can check the last time content was indexed and monitor the status of crawl jobs. You can stop any crawl job that is running, cancel the next scheduled crawl before it starts, or rerun a failed crawl.

If users report search issues, check the status of crawls to ensure that they're current. After a crawl is completed, users might have to wait a few minutes before they can locate the latest content.
1. In the Oracle Analytics Home page, click the **Navigator**, and then click **Console**.

2. Click **Search Index**.

3. Click **Monitor Crawls**.
   
   The Crawl Job Status page shows information about the past, current, and the next scheduled crawl. In the Progress column, XSA indicates a data set.

4. Look at the **Status** column to find out when the content was last crawled and when the next crawl is due.

5. Click **Cancel** to stop a crawl job that is Running or Scheduled.

6. To rerun a crawl with the status of Terminated or that displays progress totals of zero:
   a. Click the **Configure Crawls** link.
   b. In the Data Model tab, deselect and then reselect the **Enable Data Model Crawl** checkbox.
   c. Click **Save**.
   d. Click the **Monitor Crawls** link and locate the scheduled job. The revised crawl runs in a few minutes time.

### Monitor Users and Activity Logs

You can see information about any users who are currently signed in and troubleshoot report queries from the Manage Session page.

**Topics:**

- Monitor Users Who Are Signed In
- Analyze SQL Queries and Logs

#### Monitor Users Who Are Signed In

You can see how many users are signed in to your service and view detailed information about each user from the Manage Session page.

- **User ID**: Name that the user entered when they signed in.
- **Session ID**: Unique identifier assigned to the user for each user session.
- **Browser Info**: Information about the browser used to sign in.
- **Logged On**: Time when the user signed in.
- **Last Access**: Time stamp for the last activity for this user. This can be any kind of activity, such as switching from one page to another.

1. In the Oracle Analytics Home page, click the **Navigator**, and then click **Console**.

2. Click **Session and Query Cache**.

3. Locate the **Sessions** sections.
   
   The Sessions section at the top of the page shows how many users are currently signed in (Total Number of Sessions) and detailed information about these users.

4. To monitor a particular user, select **Filter Cursors by Session**.
Information for this user displays in the Cursor Cache table. Click **Clear Filter** to show information for all users.

5. To change how messages are logged for a particular user, select a **Log Level** from the list.

   By default, logging is disabled.

### Analyze SQL Queries and Logs

Administrators can examine the underlying SQL query requests that are run as people use the service.

1. In the Oracle Analytics Home page, click the **Navigator**, and then click **Console**.
2. Click **Sessions and Query Cache**.
3. Locate the **Cursor Cache** section, and review the query information recorded there. See **Query Information Recorded in the Cursor Cache Table**.
4. Optional: Click **Close All Cursors** to remove information in the Cursor Cache table.
5. Optional: Click **Cancel Running Requests** to cancel all requests that are running for analyses.

#### Query Information Recorded in the Cursor Cache Table

Administrators can examine the underlying SQL query requests that are run as people use the service.

These options apply only to analyses and dashboards. They don't apply to data visualizations.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>A unique internal identifier that is assigned to each entry.</td>
</tr>
<tr>
<td>User</td>
<td>The name of the user who ran the analysis and last placed it into the cache.</td>
</tr>
<tr>
<td>Refs</td>
<td>The number of references to this entry since it was placed into the cache.</td>
</tr>
<tr>
<td>Status</td>
<td>The status of the analysis that is using this cache entry:</td>
</tr>
<tr>
<td></td>
<td>• <strong>Starting</strong> — The analysis is starting to run.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Waiting on Parent</strong> — A view in the analysis is waiting for data to be returned for the query.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Running</strong> — The analysis is currently running.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Finished</strong> — The analysis has finished.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Queued</strong> — The system is waiting for a thread to become available so the analysis can be processed.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Canceling</strong> — The application is in the process of canceling the analysis.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Error</strong> — An error occurred during the processing or running of the analysis. Look in the Statement column for information about the error.</td>
</tr>
<tr>
<td>Time</td>
<td>The time taken to process and run the analysis, displayed in one-second increments. A value of 0s (zero seconds) indicates that the analysis took under 1 second to complete.</td>
</tr>
</tbody>
</table>
### Action
Links that you can click to affect the analysis:
- **Cancel** — Terminates the analysis. Is displayed for in-progress analyses. The user running the analysis receives an informational message indicating that the analysis was canceled by an administrator.
- **Close** — Clears the cache entry associated with this analysis. Is displayed for completed analyses.
- **View Log** — Displays the log of a query run for this analysis.
- **Diagnostic** — Displays an HTML page of diagnostic information that you can share with Oracle Customer Support.

### Last Accessed
The time stamp of the last time the cache entry for this analysis was used to satisfy an analysis.

### Statement
The logical SQL statement that was issued for the analysis; or if the analysis resulted in an error, information about the nature of the error.

### Information
Usage tracking information (for example, what analysis contained the query).

### Records
The number of records in the result set that have been seen (for example, 50+ to indicate that 50 records have been seen but there are additional records to be fetched or 75 to indicate that 75 records have been seen and there are no more records to be fetched).

---

**Run Test SQL Queries**

Administrators can enter a SQL statement directly to underlying data sources. This feature is useful for testing and debugging.

1. In the Oracle Analytics Home page, click the **Navigator**, and then click **Console**.
2. Click **Issue SQL**.
3. Enter the SQL statement. For example:

   ```sql
   SELECT XSA('weblogic'. 'SalesTargets'). "Columns". "El Sales Rep Name" s_1
   FROM XSA('weblogic'. 'SalesTargets')
   ```

4. Change the **Logging Level** if required.
5. Select **Use Oracle Analytics Presentation Services Cache**.
6. Click **Issue SQL**.

---

**Apply Custom Logos and Dashboard Styles**

Administrators use themes to apply custom logos and dashboard styles.

**Topics:**
- About Custom Logo and Dashboard Styles
- Change the Default Style for Analyses and Dashboards
- Manage Themes
About Custom Logo and Dashboard Styles

As an administrator you can customize your reporting environment by creating a theme that displays custom logo, branding text, page style and so on.

When working with themes, note the following:

• You can create multiple themes, but only one theme can be active at one time.
• If you deactivate a theme, you revert to the default Oracle theme, unless you select a different one.
• Themes are applied on pages with analyses and dashboards, but not to visualization projects.
• You create themes in the Manage Themes area of the Administration page.
• When you activate a theme, you apply it to the browser session of the currently signed-in administrator and to the browser sessions of end-users as they sign in.
• If Oracle Analytics is running on multiple instances, then duplicate and activate them for each instance.

Change the Default Style for Analyses and Dashboards

Administrators create themes to change the default logo, colors, and heading styles for analyzes and dashboards.

1. In the Classic Home page, click the user profile icon and then click Administration.
2. Click Manage Themes.
3. To apply an existing dashboard style, select one from the Theme list, click Active, then click Save.
4. To create a new dashboard style, in the Theme list, click New Theme to display the New Theme dialog.
5. In Theme Name, the name that you specify here is displayed in the Style list on the Dashboard Properties dialog.
6. In Logo, specify the page logo that you want displayed in the top left hand corner. To replace the default Oracle logo, click Select Logo and navigate to and select a different logo in PNG, JPG, or JPEG format. Logos can't exceed 136 pixels in width by 28 pixels in height.
7. In Header Title, specify the branding information that you want displayed in the top left hand corner next to the logo.
8. In Active, click to apply the currently displayed theme when you click Save. If you click Active, then click Back without saving changes, the new theme isn't applied.

This diagram shows you what theme options affect different areas of the reporting environment.
Manage Themes

Administrators manage themes to change the default logo, colors, and heading styles for reporting pages, dashboards, and analyses.

1. In the Classic Home page, click the user profile icon and then click Administration.
2. Click Manage Themes.
3. Optional: To apply a previously created theme, select the theme you want from the Theme list, click Active, then click Save, then click Back.
4. Optional: To revert to the default Oracle theme, clear the Active option, click Save, then click Back.
5. Optional: To remove a theme completely, select the theme you want to remove, click Delete, then click Back.

Switch to a Different Language

Oracle Analytics supports a range of languages.

- What languages does Oracle Analytics support?
- What's translated?
- What isn't translated?
- How do I select my language?
- How do I find documentation in my language?
What languages does Oracle Analytics support?

Oracle Analytics supports 28 languages:

Arabic, Chinese (Simplified), Chinese (Traditional), Croatian, Czech, Danish, Dutch, English, Finnish, French, French (Canada), German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian (Bokmål), Polish, Portuguese. Portuguese (Brazil), Romanian, Russian, Slovak, Slovenian, Spanish, Swedish, Thai, Turkish.

What's translated?

- **User Interface**: Oracle Analytics translates text in menus, buttons, messages, and other elements of the user interface.

- **Auto-generated text**: Some auto-generated text in content that you create is translated too. For example, automatically generated titles and filters displayed in visualizations, analyses, dashboards, pixel-perfect reports, and so on.

- **User guides**: Several user guides are translated.

What isn't translated?

A few features are available only in English.

- Analyses, dashboards, and pixel-perfect reports:
  - User-defined titles and text in your projects, unless you choose to translate them. See [Localize Catalog Captions](#).
  - Column names coming from your data sources, unless you set up column name translation in your data model RPD file.

- Data visualization projects:
  - User-defined titles and text in your projects.
  - Column names coming from your data sources, such as "Revenue". Unless your project is based on a subject area and you set up column name translation in your data model RPD file.
  - Text generated for Language Narrative visualizations is only available in English or French. Oracle Analytics maps French locales (fr and fr-CA) to the French language, and maps all other locales to English.
  - Default names for your projects. If English is your selected language, the default name for projects is *Untitled*. If you use a different language such as Italian, the default name when you save a project is the equivalent of *Untitled* in Italian. However, after you save a project, the name is fixed in that language. Project names don't change if you sign-in with a different language.

- Data sets:
  - Column names in Microsoft Excel spreadsheets that you upload.
  - Column names from your data sources.

How do I select my language?

Several options are available:

- Select your language in your browser settings.
  Refer to the documentation for your browser.
• (Classic pages only) Select your language in the My Account preferences tab, available from the Classic Home page.

See Set Your Preferences.

How do I find documentation in my language?

In most cases, when you click Help in Oracle Analytics, user assistance is displayed in the same language as the user interface. For example, if you’re working in French, the Help is displayed in French.

Several Oracle Analytics user guides are translated into the same 28 languages as the user interface. To find books translated in your language, navigate to your Oracle Analytics product on Oracle Help Center, select the Books tab and then select your language.
Localize Catalog Captions

As an administrator, you can localize the names of reporting objects that users create (known as captions) in the catalog. For example, you might localize the names of dashboards and analyses into Spanish and French.

See What languages does Oracle Analytics support?

To localize object names in the catalog, you export the captions from the catalog, localize them, and upload back to the catalog.

1. Export the default captions to an XML file. See Export Captions from the Catalog.
2. Localize the downloaded XML file. See Localize Your Captions.
3. Upload the localized XML file. See Upload Localized Captions to the Catalog.

Overview to Localize Captions

Review this information before you start localizing your captions.

When you use the Export Captions option in Oracle Analytics Cloud, the export process creates one XML file for every first-level subfolder in the shared folder, in the format {foldername} captions.xml, where {foldername} is the name of the subfolder in the shared folder. Each XML file contains the text strings for all content in the corresponding first-level folder and its subfolders.

For example, if the shared folder in the Presentation Catalog contains the first-level folders Marketing, Service, and Sales, then the export process creates three XML files:

- marketingcaptions.xml
- salescaptions.xml
- servicecaptions.xml
The export process not only generates new XML files, but the process also modifies the catalog, inserting the appropriate message ID for each object. Presentation Services uses those message IDs to locate the newly translated text.

Export Captions from the Catalog

The following procedure describes how to export text strings in the catalog.

1. In the Classic Home page, click the user profile icon and then click Administration.
2. In the Manage Catalog Captions area, click Export Captions.
3. Click Browse to display the Catalog browser, select the folder that you want to localize, then click OK.
   For example, you might select \Shared Folders\SampleLite.
4. Save the downloaded XML file.
   For example, if you selected the Quick Start folder to download, you'll save a file named _shared_Sample Lite_portal_QuickStart_captions.xml.

Localize Your Captions

After you have exported your captions in an XML file, deliver the XML file to the localization team. For example, if you selected the Quick Start folder to download, you'll deliver a file named _shared_Sample Lite_portal_QuickStart_captions.xml.

You and the localization team are responsible for resolving any errors in the translated text strings. Consider that the contents of the catalog are updated whenever objects are added, deleted, or modified.

The first illustration shows an extract from an exported caption XML file before translation. The file is named myfoldercaptions.xml. The second illustration shows an extract from the file after translation. The file is named myfoldercaptions_fr.xml.
Upload Localized Captions to the Catalog

After you have localized your captions in the required languages, you deploy the languages by uploading the translated XML files. Use this procedure for each language.

1. In the Classic Home page, click the user profile icon and then click Administration.
2. In the Manage Catalog Captions area, click Import Captions.
3. Click Browse and navigate to and select the localized XML file, then click OK.
4. Use the Select language option to select the language to which you've localized, then click OK.

Imported XML files are copied to the MsgDb folder under the selected language.

To download, review, or delete imported captions files, use the Manage Captions option.

Integrate with Oracle Enterprise Performance Management Platform Business Processes

Oracle Analytics Cloud integrates with Oracle Enterprise Performance Management (Oracle EPM) platform business processes, for example Oracle Planning and Budgeting Cloud Service.

There're two ways to integrate with Oracle EPM Platform:

- **Self-service** - Business users create visualization projects using data from cubes or plan types. For example, you can visualize data from Planning and Budgeting Cloud, Hyperion Planning, and Essbase Cubes. Self-service connection requires no special modelling or administration privileges. Business users simply create a connection using the Oracle EPM connection type, and create a visualization project.

- **Advanced data modeling** - Business analysts model Oracle EPM data first, then publish the data model for use by business users. For example, administrators or data modellers might create advanced calculations for an organization to
Build Dashboards and Analyzes with Data from Oracle EPM Platform

Oracle Analytics Cloud Enterprise Edition integrates with Oracle Enterprise Performance Planning platform (Oracle EPM). You can build dashboards and analyses from Oracle EPM Cloud.

Topics

• Overview to Integration with Planning, Close and Tax Reporting on Oracle EPM Platform
• Prerequisites for Integration with Oracle EPM Platform
• Build and Upload a Data Model from Cloud EPM Platform

Overview to Integration with Planning, Close and Tax Reporting on Oracle EPM Platform

Oracle EPM Cloud business processes are used by companies to analyze data for planning, forecasting, and budgeting.

Report builders can analyze and build dashboards of data from Oracle EPM Cloud. Before they start, if you're creating a data model, you import the required application metadata from on-premises and cloud data sources, which enables your report builders to create dashboards and analyses.

• Oracle Analytics Cloud supports Planning, Financial Consolidation and Close, and Tax Reporting.

If you have Oracle Enterprise Performance Management (EPM) Cloud Version 19.08 and higher, you can also use the Analytic Data Modeling (ADM) driver that's preinstalled with Oracle Analytics Cloud to take advantage of the advanced modeling capabilities provided in Oracle Planning and Budgeting Cloud Service:

– Generation of number columns that support filtering.
– Leaf indicator columns.
– Separate columns per generation for member names and aliases (requires EPM 20.04).
– Attribute dimensions.
– Enhanced performance features.

• You can review the Service Description documents to understand licensing requirements for using this feature. See Service Description Documents.
• When you import data from Hyperion Planning data sources, both measures and dimensions are imported into your data model.

Prerequisites for Integration with Oracle EPM Platform

Before you start, make sure you have the required components in place and deployed correctly.

• Oracle Analytics Cloud - Enterprise Edition.
• A Windows 64–bit machine on which to run Oracle Analytics Developer Client Tool.


• A Javahost process running on the client. (Start a process using the command: C:\oracle\oac-client-5.6\bi\bifoundation\javahost\bin\startOnClient.bat.)

• If you're deploying Oracle Analytics Cloud, (that is, on Oracle Cloud Infrastructure with Oracle-Managed), configure these options:
  – Set the JAVA_HOME system environment variable to point to your JDK installation. For example, C:\Program Files\Java\jdk1.8.0_162.
  – set INSTANCE_NAME=%DOMAIN_HOME%
  – Edit the file <BIClient_Home>\bi\bitools\bin\admintool.cmd, and below the ESSBASEPATH setting add: set INSTANCE_NAME=%DOMAIN_HOME%
  – Run <BIClient_Home>\bi\bifoundation\javahost\bin\startOnClient.bat to start Javahost. If you need to restart the client, run stopOnClient.bat, then rerun startOnClient.bat.

• If you’re deploying Oracle Analytics Cloud- Classic, (that is, Oracle Cloud Infrastructure Classic), configure these options:
  – Configure <BIClient_Home>\bi\bitools\bin\admintool.cmd with the instance name: INSTANCE_NAME=%DOMAIN_HOME%
  – Configure Oracle Analytics Cloud host and port information in <BIClient_Home>\bi\config\fmwconfig\biconfig\OBIS\NQSConfig.INI:
    [JAVAHOST] JAVAHOST_HOSTNAME_OR_IP_ADDRESSES = "host:9506";

Build and Upload a Data Model from Cloud EPM Platform

Build a data model on Cloud EPM Platform, then upload it to Oracle Analytics Cloud Enterprise Edition.

1. In your local environment, start Oracle Analytics Developer Client Tool, and create a repository.

2. Import the Planning and Budgeting metadata:
   a. From the File menu, select Import Metadata to start the import wizard.
   b. In the Select Data Source page, select Hyperion ADM from the Connection Type list.
   c. In the Select Metadata Objects page, enter connection details.
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection Type</td>
<td>Select Hyperion ADM.</td>
</tr>
<tr>
<td>Provider Type</td>
<td>Select Hyperion Planning.</td>
</tr>
<tr>
<td>URL</td>
<td>Specify the connection URL as:</td>
</tr>
<tr>
<td></td>
<td>adm:thin:com.hyperion.ap.hsp.HspAdmDriver:</td>
</tr>
<tr>
<td></td>
<td>&lt;Server&gt;%3A&lt;Port&gt;:&lt;Application&gt;</td>
</tr>
<tr>
<td>Note</td>
<td>Specify the URL-encoded value %3A instead of a colon (:) to separate the host and port number.</td>
</tr>
<tr>
<td></td>
<td>For example:</td>
</tr>
<tr>
<td></td>
<td>adm:thin:com.hyperion.ap.hsp.HspAdmDriver:</td>
</tr>
<tr>
<td></td>
<td>machine12345:Vision;locale=en_US;tenantName=mytenant12345;hubProtocol=https;</td>
</tr>
<tr>
<td>User Name and Password</td>
<td>Specify the name and password of a user with administration privileges.</td>
</tr>
</tbody>
</table>

When the import is complete, review the metadata in the Physical Layer.

d. Make sure that you've selected the ANCESTOR_DIM_PROPERTY_SUPPORTED database feature.

3. Complete your data model:

a. Cut and paste tables in the Physical layer to the Business Model and Mapping layer and to the Presentation layer.
b. Verify the data model and save it as an .rpd file.

4. In the Physical layer, edit the Connection Pool for this data source, specify a URL using the URL that you used on the Select Metadata Objects page in step 1, and select Shared logon.

5. Save the repository, and ignore the warning that the database features don’t match the defaults.

6. Upload the data model to Oracle Analytics Cloud. From the File menu, click Cloud, then click Upload, and enter connection information for your Oracle Analytics Cloud instance.

Users can analyze data and build dashboards using the new data model.

Replicate Data

Use data replication to import data from Oracle Cloud applications into high-performant data stores, such as Oracle Autonomous Data Warehouse and Oracle
Database Classic Cloud Service, for visualization and analysis in Oracle Analytics Cloud.
With data replication, you can import and transform your data without using additional extract-transform-load (ETL) tools.

Topics

• Overview of Data Replication
• Replicate Your Data
• Replicate Your Data Regularly
• Modify a Replication Flow
• Monitor and Troubleshoot a Replication Flow
• Move Replicated Data to a Different Target Database

Replicate Your Data

Use a replication flow to copy data from a data source to a data target for analysis in Oracle Analytics Cloud. For example, you might copy data from Oracle Cloud Applications to Oracle Autonomous Data Warehouse.

1. Set up a connection for your data source:
   a. From the Home page, click Create, then Replication Connection, and then select the type of data source you want to copy.
      For example, to replicate data from Oracle Cloud Applications, click Oracle Fusion Application Storage.
   b. At the Create Connection dialog, specify the connection details.
      For example, to replicate data from Oracle Cloud Applications, specify connection details for your Oracle Cloud Infrastructure Object Storage or Object Storage Classic instance. See Create a Replication Connection for Oracle Cloud Applications.

2. Set up a connection for your data target:
   a. From the Home page, click Create, Replication Connection, and then select the type of data source you want to copy the data into.
   b. In the Create Connection dialog, specify the connection details of your data target.
      For example, to replicate to Oracle Autonomous Data Warehouse, click Oracle Autonomous Data Warehouse.

3. From the Home page, click Create, then click Data Replication.

4. In the Create Data Replication-Select Source Connection dialog, select the source connection that you created in Step 1.

5. In the Create Data Replication-Select Target Connection dialog, select the target connection that you created in Step 2.
6. If the replication target has multiple schemas, use the **Schema** list to select the schema to use.

7. In the **Replicate Objects** area, select the object that you want to replicate:
   - Click the check box next to each object that you want to replicate.
     
     For Fusion Applications data sources, if the view that you want to replicate isn't displayed in the list, click the **Add a custom view object** option below the list. Enter the full path and name of the view, for example, `FscmTopModelAM.TaskDffBIAM.FLEX_BI_TaskDFF`, then click **Add**.
   
     - When you select a table, you include all attributes by default. Use the check boxes on the right-hand pane to select or deselect attributes.
   
     - To change a primary key, click the key icon and select **Assign Primary Key** or **Reorder Primary Key**. The primary key is used for upsert operations to determine whether a record is inserted or updated.
     
     To improve indexing, it's best practice to order the columns so that the most selective columns are first and the least selective columns are last. Do this by clicking the **Reorder Primary Key** option from the context menu of any of the primary key columns.
   
     - To use multiple columns as a primary key, select the key icon next to each column to include in the key.
   
     - To replicate a subset of data based on a filter, click **Edit Filter** to display the filter editor and specify a filter expression (without the closing semicolon). The expression format you use depends on the filter language that your data source supports. Common filter languages include SQL, XML, and so on. Refer to the documentation for your data source for details.

<table>
<thead>
<tr>
<th>Data Source Type</th>
<th>Example filter expressions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Fusion Applications</td>
<td>&quot;<strong>DATASTORE</strong>.LookupType not in ('GROUPING_SEPARATOR','HZ_FORMAT_DELIMITERS','ICX_NUMERIC_CHARACTERS')&quot;</td>
</tr>
<tr>
<td>Oracle Service Cloud (RightNow)</td>
<td>lookupname like 'Admin%' id &gt; 2</td>
</tr>
</tbody>
</table>
### Data Source Type

<table>
<thead>
<tr>
<th>Data Source Type</th>
<th>Example filter expressions</th>
</tr>
</thead>
</table>
| Oracle Eloqua    | '((Account.Field(M_Annual_Revenue1)))' > '2000'

Use the **Validate** option to verify the expression before you click **OK** to save the filter.

- To replicate a subset of data based on a timestamp, click the **Replicate From** calendar icon and specify a start date.

  The **Replicate From** option only applies to tables that have at least one incremental identifier column defined.

- Use the **Load Type** to specify whether to perform an incremental load or a full load.

  If you select **Incremental**, you replicate all data on the first run and on subsequent runs you replicate only new data. Incremental updates require tables with a primary key and at least one incremental identifier column.

  If you select **Full**, the target table is initialized and you replicate all data.

8. Save your replication project.

9. To start the data load, click **Run Replication Flow**.

### Create a Replication Connection for Oracle Cloud Applications

To replicate data from Oracle Cloud Applications, you set up a data replication connection in Oracle Analytics Cloud.

1. In Oracle Analytics Cloud, click **Create**, then **Replication Connection**.

2. Click **Oracle Fusion Application Storage**.

3. Specify these connection details:

   - **Storage Type** - Select **OCI** for Oracle Cloud Infrastructure Object Storage or **Classic** for Oracle Cloud Infrastructure Object Storage Classic.

   - **Storage Region** - Specify the OCI region where the storage bucket resides (for example, us-ashburn-1). In the Object Storage API endpoint, the region is specified immediately before oraclecloud.com. For example, https://objectstorage.us-ashburn-1.oraclecloud.com.

   - **Storage Tenancy OCID** - Specify the Oracle Cloud Identifier (OCID) for the tenancy where the bucket resides.

   - **Storage User OCID** - Specify the Oracle Cloud Identifier (OCID) for the user that will access the storage bucket.

   - **Storage Bucket** - Specify the name of the storage bucket.

   - **URL** - Specify the API endpoint for the Fusion Enterprise Scheduler Web Service. For example, https://<fa-host>/bi/ess/esswebservice or just the hostname <fa-host>.

   - **Username** - Specify the username of the Cloud Applications user with permissions to access BI Cloud Connector.

   - **Password** - Specify the password of the Cloud Applications user with permissions to access BI Cloud Connector.
• **Storage API Key** - Click **Generate**, then click **Copy** to create an API signing key. Oracle Analytics Cloud Data Replication uses this key to authenticate when it accesses the object storage bucket.

• **Storage Connection** - Specify the storage connection in BI Cloud Connector Console to use when writing the extracted data. The BI Cloud Connector storage connection must point to the same bucket as the Oracle Analytics Cloud connection.

4. In separate browser window or tab, navigate to OCI Console, then Identity, then Users, then User Details for your replication user account.

5. Under the **API Keys** section, add these keys:
   • Add the public key for the Data Replication connection that you copied to the clipboard in Step 4.
   • Add the public key that was saved when you created the storage connection in BI Cloud Connector Console on the Configure External Storage page.

6. Return to the Oracle Analytics Cloud browser window or tab, and on the Oracle Fusion Application Storage dialog click **Save**. If you've entered the information correctly, the connection is saved.

### Replicate Your Data Regularly

You can schedule replication flows to run regularly. For example, if your source data changes weekly, you might replicate your data once per week to keep it up-to-date.

1. In the Home page, click **Navigator**, then click **Data**, then click **Data Replications**. A list of replication flows that you can schedule is displayed. If you haven’t already created a replication flow, do that first.

2. Right-click the replication flow that you want to execute regularly and click **New Schedule**.

3. In the Schedule dialog, specify when to start the replication flow and how often you want it to run.

4. To monitor the progress of your scheduled jobs, in the Home page, click **Navigator**, then click **Jobs**.

5. To change the schedule, right-click the replication flow that you scheduled, click **Inspect**, then click **Schedule** and make your changes.

### Modify a Replication Flow

You can change how your data is replicated by modifying the replication flow that loads your data.

1. In the Home page, click **Navigator**, then **Data**, then **Data Replications**.

2. Right-click the replication flow that you want to modify, and click **Open**, and make your changes.
Monitor and Troubleshoot a Replication Flow

You can monitor a replication flow to check progress and troubleshoot issues. If an error occurs during a replication flow and the replication is run again, then the replication starts from where the previous error was encountered and any duplicate rows are removed.

1. To monitor jobs associated with a replication flow:
   a. In the Home page, click Navigator, then Jobs.
   b. Review the current status of your job in the Status column.
   c. To view job history, right-click the job, and click History.
   d. To stop a job, right-click the job and click Cancel. To remove it completely, click Delete.

2. To investigate or troubleshoot the last data load for a replication flow:
   a. In the Home page, click Navigator, then Data, then Data Replications.
   b. Right-click the replication flow that you want to investigate, and click Run Details.

   The Run Details dialog shows detailed information about the last replication operation. For example, you can see how many rows were loaded for each table and detailed error messages for each table.

Move Replicated Data to a Different Target Database

If you change the target database for data replication, you can migrate the current data to the new database, and reconfigure your connections to replicate to your new database.

For example, you might need to do this if your organization migrates from Oracle Cloud Infrastructure - Classic to Oracle Cloud Infrastructure.

1. Make sure that your new target schema has the required privileges and permissions. See What Privileges and Permissions Are Required?.

2. Copy the replicated tables and the following replication system tables to the new target schema.
   - All replicated tables (along with corresponding indexes, constraints)
   - REPL$_ERR_SUMMARY
   - E$_*
   - SDS_*

3. Configure a replication connection for the new target database.
   - If your new target database is of the same type as your old target database, then simply edit your existing replication connection and update the connection details.
     In the Connections page, locate the replication connection, click Inspect, and use the General tab to update the details for the new target database.
   - If your new target database is of a different type, then create a new replication connection for that type and specify the connection details.
Click **Create**, then **Replication Connection**, select the appropriate type, and specify the details.

4. Update each data replication entry that is configured to use the old target database connection details.
   a. Open the **Data Replications** page, and select the data replication you want to edit.
   b. In the **Replication Target** area:
      - If your new target database is of the same type as your old target database, make sure that **Schema** is set correctly for the new database.
      - If your new target database is of a different type, click **Select** and select the new target connection, then click **Schema** and set correctly for the new database.

5. From the Home page, navigate to **Data** and then **Connections**. Locate the replication connection for your target database, click **Inspect**, and use the Tables tab to verify the table information for the new target schema.

You can now resume data replication in incremental mode into the new database.

**Overview of Data Replication**

Data replication makes data more readily available for visualization and analysis without repeatedly executing expensive queries or data extracts on the original data source. You can also use data replication to build content packs for Oracle Cloud applications. Data replication is available in Oracle Analytics Cloud Enterprise edition.

**Prerequisites for Data Replication**

Before you start, make sure you have the correct components required for data replication. 
To find out the supported versions of Oracle Planning and Budgeting Cloud Service, see Supported Data Sources.

You need the following:

- Oracle Analytics Cloud Enterprise edition. You'll need data replication permissions (administrator role) for Oracle Analytics Cloud.
- A supported data source, such as Oracle Cloud Applications or Oracle Service Cloud (RightNow) from which to source your data.
- A supported data target, such as Oracle Database or Oracle Autonomous Data Warehouse in which to replicate your data.
- If you're replicating Oracle Cloud Applications data, you need:
  - **BI Cloud Connector**:
    * BI Cloud Connector deployed in the Oracle Cloud Applications environment.
    * Access to BI Cloud Connector Console in Oracle Cloud Applications.
    * Connection details for the storage instance of Oracle Cloud Infrastructure specified on the Configure External Storage page of BI Cloud Connector Console.
Oracle Cloud Infrastructure:

* Compute permissions in Oracle Cloud Infrastructure to be able to administer object storage.
* Oracle Cloud Infrastructure storage. You can use either Oracle Cloud Infrastructure Object Storage or Oracle Cloud Infrastructure Object Storage Classic.
  If you already replicate your data from Object Storage Classic, it’s easy to switch to Object Storage.
* Compute permissions in Oracle Cloud Infrastructure for administering object storage.
* Details of an existing storage bucket in Oracle Cloud Infrastructure, including the storage bucket name, the namespace in which the bucket resides, and the Oracle Cloud Identifier (OCID) for the tenancy where the bucket resides.
* A user account Oracle Cloud Identifier (OCID) to access the storage bucket from both Oracle Cloud Applications and Oracle Analytics Cloud.

Information You Need for Data Replication

Before you start, make sure you have the required details for data replication.

Oracle BI Cloud Connector

• The https://{fa_url}/biacm link for your Oracle BI Cloud Connector.

Oracle Fusion Applications

• The host name and connection details for your Oracle Cloud Applications instance.

Oracle Cloud Infrastructure Storage

• The host name, storage service name, and container name of your Oracle Cloud Infrastructure storage instance (Oracle Cloud Infrastructure Object Storage or Oracle Cloud Infrastructure Classic Storage). Use this information to configure Oracle BI Cloud Connector to point to your Oracle Storage Cloud storage instance.
• The REST Endpoint URL for your Oracle Cloud Infrastructure storage instance.
  The first part of the URL is the Storage host and the last part is the Storage Name/Service Name. For example:
  
  https://uscom-{location}.storage.oraclecloud.com/v1/Storage-mystoragecloudclassic

  To obtain the REST Endpoint URL, go to Oracle Cloud Infrastructure Classic Console, navigate to Storage Classic, click Account and copy the REST Endpoint URL.

• Details of your object storage bucket in Oracle Cloud Infrastructure, including the name of the storage bucket, the namespace in which the bucket resides, and the Oracle Cloud Identifier (OCID) for the tenancy where the bucket resides.
• The Oracle Cloud Identifier (OCID) for the user with access to the storage bucket.
What Data Can I Replicate?

You can replicate data from these sources.

- Oracle Eloqua
- Oracle Cloud Applications (with either Oracle Cloud Infrastructure Object Storage or Object Storage Classic)
- Oracle Service Cloud (RightNow)
- Oracle Talent Acquisition Cloud (Taleo)

What Target Databases Can I Replicate Data Into?

You can replicate data into these types of database.

- Oracle Autonomous Data Warehouse
- Oracle Autonomous Transaction Processing
- Oracle Database

What Replication Tasks Can I Do?

You can perform numerous data replication tasks.

- Create data flows to replicate your data (known as replication data flows).
- Schedule replication data flows to perform regular incremental updates.
- Limit the data that you replicate using a filter.

What Privileges and Permissions Are Required?

Make sure you have the required privileges and permissions for data replication.

To replicate data, you must have the BI Service Administrator application role or some other role that includes BI Service Administrator.

For Oracle Database, to replicate into the user’s own schema, the user needs the following privileges:

- CREATE SESSION
- CREATE TABLE

For Oracle Database, to replicate data into other schemas within the target database, the user needs all of the following privileges:

- CREATE ANY TABLE
- SELECT ANY TABLE
- ALTER ANY TABLE
- COMMENT ANY TABLE
- INSERT ANY TABLE
- UPDATE ANY TABLE
- DELETE ANY TABLE
What Options Are Available when Replicating Data from Oracle Cloud Applications Data Sources

When you replicate data from an Oracle Cloud Applications data source, use these options.

Some View Objects record change history (similar to slowly changing dimensions). To replicate the change history, click Include History on the replication setup dialog.

Keep replicated data synchronized with the source data using the Include Deletions option on the replication setup dialog. If you select Include Deletions and a record is deleted from the source data, it's also deleted from the target database.

To synchronize data, you use the Include Deletions option in incremental data loads (where the Load Type option is Incremental). In full data loads, the target table rows are deleted before the replication starts.

With Custom View Objects, you can replicate data in any custom view using the Add a custom view object option on the replication setup dialog. Enter the full path and name of the view, for example, FscmTopModelAM.TaskDffBIAM.FLEX_BI_TaskDFF, then click Add to add the view to the Replicate Objects list so you can select fields.

Migrate from Oracle BI Enterprise Edition 11g

You can migrate data models, dashboards, analyses, and application roles from Oracle BI Enterprise Edition 11g to Oracle Analytics Cloud. Before you start, you must download a migration utility migration-tool.jar to a Windows or UNIX system.

To understand the entire migration process, read the migration guide Migrating Oracle Business Intelligence Enterprise Edition to Oracle Analytics Cloud.

You can find instructions on how to download the migration utility in this guide. See Export Content from Oracle BI EE 11g.

Migrate from Oracle BI Enterprise Edition 12c

You migrate data models, dashboards, analyses, and application roles from Oracle BI Enterprise Edition 12c using a BAR file.

To understand the entire migration process, read the migration guide Migrating Oracle Business Intelligence Enterprise Edition to Oracle Analytics Cloud.

You can find instructions on how to use the WLST command exportarchive to capture the content you want to migrate in a BAR file in this guide. See Export Content from Oracle BI EE 12c.
Update the Cloud Storage Password

Oracle Analytics Cloud stores analytics data sets and backups in cloud storage. If the credentials required to access the cloud storage container change or expire, users might see the message "Failed to connect to the storage service. Please check the user and password are correct". If this happens, administrators can update the storage password. The way you do this depends whether your Oracle Analytics Cloud service is managed by Oracle or by you (customer managed).

**Topics:**

- Update the Cloud Storage Password for an Oracle-Managed Service
- Update the Cloud Storage Password for a Customer-Managed Service

Update the Cloud Storage Password for an Oracle-Managed Service

If your Oracle Analytics Cloud is managed by Oracle, you can update the cloud storage password from the Console.

1. Click **Console**.
2. Click **Connections**.
3. Click **Update Cloud Storage Password**.
4. Enter the **Storage Password**.
5. Click **Save**.

Update the Cloud Storage Password for a Customer-Managed Service

If your Oracle Analytics Cloud is a customer-managed service, you must sign in to Oracle Cloud Infrastructure Console to update cloud storage credentials and restart the service. Contact your service administrator if you don't have the required permissions.

See Manage Credentials in *Administering Oracle Analytics Cloud - Classic*.

**Track Usage**

Usage tracking enables administrators to track user-level queries to content.

Tracking usage is helpful way to determine which user queries are creating performance bottlenecks, based on query frequency and response time. Administrators set up the criteria to track user queries and generate usage reports that can be used in a variety of ways such as database optimization, aggregation strategies, or billing users or departments based on the resources that they consume.

**Topics:**

- About Tracking Usage
- Understand the Usage Tracking Tables
- Typical Workflow for Tracking Usage
• Specify the Usage Tracking Database
• Set Usage Tracking Parameters
• Analyze Usage Tracking Data

About Tracking Usage

You can configure usage tracking in services that offer enterprise modeling features. Usage information is tracked at the detailed user query level so you can answer questions such as:

• How are users engaging with Oracle Analytics Cloud?
• Where are they spending or not spending their time?
• How long do users spend in each session, between sessions, and between queries?
• How are queries within sessions, across sessions, and across users related to each other?
• Are users drilling up and down in analyses?
• What queries are running when issues are reported?

The usage statistics that you gather can help you to monitor system usage and performance so you can better understand and predict user behavior. You can increase your efficiency and reduce errors if you know in advance how your system is likely to be used.

When you enable usage tracking, the system collects data records for every query that is run and writes them all to database tables. Both logical and physical queries are tracked and logged in separate tables, along with various performance measures such as the time taken to run the query and number of rows searched while processing a user query.

Prerequisites for Usage Tracking

If you want to track usage, verify you meet the following prerequisites:

• You currently use Oracle Analytics Developer Client Tool to manage your data model (RPD file).
  To configure usage tracking, you must add the usage tracking database details to your data model file using Oracle Analytics Developer Client Tool. If Data Modeler is your preferred modeling tool, you can't enable usage tracking. For usage tracking you must use Oracle Analytics Developer Client Tool.

• You have appropriate access permissions on the database where you want to store usage information.
  You must have the credentials for a user who has permissions to create the usage tracking tables on the database schema and write usage data to the tables.

About the Usage Tracking Database

The system stores usage tracking details in a database that you specify. The database can be Oracle Database Classic Cloud Service or Oracle Autonomous Data Warehouse. You specify the database and connection pool details in your data model file using the Administration Tool.
About Usage Tracking Parameters

After specifying the database where you want to store usage tracking information, you must set various parameters, required for usage tracking, through the Console.

Parameters that configure usage tracking are:

- Connection pool name
- Physical and logical query logging table names
- Maximum number of query rows in the usage tracking tables

Administrators must restart the system after configuring usage tracking parameters.

The system:

- Creates the physical and logical query logging tables in the database specified in the data model file. It names the tables based on the table name that you provide in the physical and logical query logging table names parameters.
- Inserts usage tracking data in these tables.

About Analyzing Usage Data

You can use the system to create useful usage reports from the tracking data added to the physical and logical query logging tables.

You can connect to the database, create a data set from the tables, and create reports and visualizations to help you understand your users' queries and take appropriate action to improve performance.

Understand the Usage Tracking Tables

The system stores usage tracking data in three database tables.

The usage tracking process creates these tables with table names that you specify through settings in the Systems Settings page.

- Usage Tracking Logical Query Logging Table
- Usage Tracking Physical Query Logging Table
- Usage Tracking Initialization Block Table

Usage Tracking Logical Query Logging Table

The following table describes each column in the database table that tracks logical queries. Where appropriate, the data type such as variable character field (varchar and varchar2) and length is specified. As you review the descriptions in this table, you might assume that certain time-related columns can be added or subtracted to equal exact values. For example, you might assume that TOTAL_TIME_SEC is equal to END_TS minus START_TS. The columns don't provide such exact values because:

- Various processes run in parallel and their speed depends on the load and on database performance. Server-based operations might be either light or intensive.
• If all connections are full, then the query enters a queue and waits to be processed. The timing depends on the load and the configuration.

### User, Session, and ID-related Columns

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Indicates the unique row identifier.</td>
</tr>
<tr>
<td>NODE_ID</td>
<td>Contains <code>&lt;hostname&gt;:&lt;component_name&gt;</code> where <code>&lt;component_name&gt;</code> can be overridden by the environment variable COMPONENT_NAME. For example, examplehost:obis1 (for a single instance). Default value of COMPONENT_NAME is obis1.</td>
</tr>
<tr>
<td>PRESENTATION_NAME</td>
<td>Indicates the name of the Catalog. Default is Null and data type is Varchar(128).</td>
</tr>
<tr>
<td>IMPERSONATOR_USER_NAME</td>
<td>Specifies the user name of the impersonated user. If the request isn’t run as an impersonated user, then the value is None. Default is None and the data type is Varchar(128).</td>
</tr>
<tr>
<td>USER_NAME</td>
<td>Specifies the name of the user who submitted the query.</td>
</tr>
<tr>
<td>ECID</td>
<td>Indicates the system-generated execution context ID. Data type is Varchar2(1024).</td>
</tr>
<tr>
<td>TENANT_ID</td>
<td>Specifies the name of the tenant of the user who ran the initialization block. Data type is Varchar2(128).</td>
</tr>
<tr>
<td>SERVICE_NAME</td>
<td>Specifies the name of the service. Data type is Varchar2(128).</td>
</tr>
<tr>
<td>SESSION_ID</td>
<td>Indicates the ID of the session. Data type is Number(10).</td>
</tr>
<tr>
<td>HASH_ID</td>
<td>Indicates the HASH value for the logical query. Data type is Varchar2(128).</td>
</tr>
</tbody>
</table>

### Query Origin-related Columns

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUERY_SRC_CD</td>
<td>The source of the request. Note that the requestor can set QUERY_SRC_CD to any string value to identify itself. Possible values include:</td>
</tr>
<tr>
<td></td>
<td>• Report - If the source is an analysis or any export operation.</td>
</tr>
<tr>
<td></td>
<td>• Drill - If the source is a change in dimension caused by drilling up or down.</td>
</tr>
<tr>
<td></td>
<td>• ValuePrompt - If the source is the Value drop-down list in a filter dialog or a dashboard prompt.</td>
</tr>
<tr>
<td></td>
<td>• VisualAnalyzer - If the source is a project to visualize data.</td>
</tr>
<tr>
<td></td>
<td>• DisplayValueMap or MemberBrowserDisplayValues or MemberBrowserPath - If the source is a value related to the display of an analysis.</td>
</tr>
<tr>
<td></td>
<td>• SOAP - If the source is a call from web services such as DataSetSvc.</td>
</tr>
<tr>
<td></td>
<td>• Seed - If the source is an agent that seeds the cache of the analytics server.</td>
</tr>
<tr>
<td></td>
<td>• Null - If the source is the Administration Tool physical table or column row count, or view data.</td>
</tr>
<tr>
<td>SAW_DASHBOARD</td>
<td>Indicates the path name of the dashboard. If the query wasn’t submitted through a dashboard, then the value is NULL.</td>
</tr>
</tbody>
</table>
### SAW_DASHBOARD_PG
Indicates the page name in the dashboard. If the request isn't a dashboard request, then the value is NULL. Default is Null and the data type is Varchar(150).

### SAW_SRC_PATH
Specifies the path name in the Catalog for the analysis.

### Query Details-related Columns

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERROR_TEXT</td>
<td>Contains the error message from the back-end database. This column is applicable only if the SUCCESS_FLAG is set to a value other than 0 (zero). Multiple messages are concatenated and aren't parsed by the system. Default is Null and data type is Varchar(250).</td>
</tr>
<tr>
<td>QUERY_BLOB</td>
<td>Contains the entire logical SQL statement without any truncation. The QUERY_BLOB column is a character string of type Long.</td>
</tr>
<tr>
<td>QUERY_KEY</td>
<td>Contains an MD5 hash key generated by the system from the logical SQL statement. Default is Null and the data type is Varchar(128).</td>
</tr>
<tr>
<td>QUERY_TEXT</td>
<td>Indicates the SQL statement that was submitted for the query. The data type is Varchar(1024). You can change the length of this column (using the ALTER TABLE command), but note that the text written into this column is always truncated to the size that is defined in the physical layer. The repository administrator mustn't set the length of this column to a value greater than the maximum query length that's supported by the back-end physical database. For example, Oracle Databases enable a maximum Varchar of 4000, but Oracle Databases truncate to 4000 bytes, not 4000 characters. If you use a multibyte character set, the actual maximum string size has a varying number of characters, depending on the character set and characters used.</td>
</tr>
<tr>
<td>REPOSITORY_NAME</td>
<td>Specifies the name of the repository that the query accesses.</td>
</tr>
<tr>
<td>SUBJECT_AREA_NAME</td>
<td>Contains the name of the business model being accessed.</td>
</tr>
<tr>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SUCCESS_FLG</td>
<td>Indicates the completion status of the query, as defined in the following list:</td>
</tr>
<tr>
<td></td>
<td>• 0 - The query completed successfully with no errors.</td>
</tr>
<tr>
<td></td>
<td>• 1 - The query timed out.</td>
</tr>
<tr>
<td></td>
<td>• 2 - The query failed because row limits were exceeded.</td>
</tr>
<tr>
<td></td>
<td>• 3 - The query failed due to some other reason.</td>
</tr>
</tbody>
</table>

**Execution Timing-related Columns**

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPILE_TIME_SEC</td>
<td>Contains the time in seconds required to compile the query. The number for COMPILE_TIME_SEC is included in TOTAL_TIME_SEC.</td>
</tr>
<tr>
<td>END_DT</td>
<td>Indicates the date the logical query completed.</td>
</tr>
<tr>
<td>END_HOUR_MIN</td>
<td>Indicates the hour and minute the logical query completed.</td>
</tr>
<tr>
<td>END_TS</td>
<td>Indicates the date and time the logical query completed. The start and end timestamps also reflect any time that the query spent waiting for resources to become available. If the user submitting the query navigates away from the page before the query finishes, then the final fetch never happens and a timeout value of 3600 is recorded. However, if the user navigates back to the page before the timeout, then the fetch completes at that time, which is recorded as the end Ts time.</td>
</tr>
<tr>
<td>START_DT</td>
<td>Indicates the date that the logical query was submitted.</td>
</tr>
<tr>
<td>START_HOUR_MIN</td>
<td>Indicates the hour and minute that the logical query was submitted.</td>
</tr>
<tr>
<td>START_TS</td>
<td>Indicates the date and time that the logical query was submitted.</td>
</tr>
<tr>
<td>TOTAL_TIME_SEC</td>
<td>Indicates the time in seconds that the system spent working on the query while the client waited for responses to its analyses. TOTAL_TIME_SEC includes the time for COMPILE_TIME_SEC.</td>
</tr>
<tr>
<td>RESP_TIME_SEC</td>
<td>Indicates the time taken for query response. Data type is Number(10).</td>
</tr>
</tbody>
</table>

**Execution Details-related Columns**
<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUM_DB_TIME_SEC</td>
<td>Contains the cumulative time of all queries sent to the database. Queries run in parallel, so the cumulative query time is equal to or greater than the total time connected to the database. For example, suppose a logical request spawns 4 physical SQL statements sent to the database, and the query time for 3 of the queries is 10 seconds, and for one query is 15 seconds, CUM_DB_TIME_SEC displays 45 seconds because the queries run in parallel.</td>
</tr>
<tr>
<td>CUM_NUM_DB_ROW</td>
<td>Contains the total number of rows returned by the back-end databases.</td>
</tr>
<tr>
<td>NUM_DB_QUERY</td>
<td>Indicates the number of queries that were submitted to the back-end databases to satisfy the logical query request. For successful queries (SuccessFlag = 0), this number is 1 or greater.</td>
</tr>
<tr>
<td>ROW_COUNT</td>
<td>Indicates the number of rows returned to the query client. When a large amount of data is returned from a query, this column isn’t populated until the user displays all the data.</td>
</tr>
<tr>
<td>TOTAL_TEMP_KB</td>
<td>Specifies the total KB received for a query. Data type is Number(10).</td>
</tr>
</tbody>
</table>

**Cache-related Columns**

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CACHE_IND_FLG</td>
<td>Holds Y to indicate a cache hit for the query; N to indicate a cache miss. Default is N.</td>
</tr>
<tr>
<td>NUM_CACHE_HITS</td>
<td>Indicates the number of times that the cache result returned for the query. NUM_CACHE_HITS is a 32-bit integer (or a 10-digit integer). Default is Null.</td>
</tr>
<tr>
<td>NUM_CACHE_INSERTED</td>
<td>Indicates the number of times that the query generated a cache entry. Default is Null. NUM_CACHE_INSERTED is a 32-bit integer (or a 10-digit integer).</td>
</tr>
</tbody>
</table>

**Usage Tracking Physical Query Logging Table**

The following table describes the database table that tracks physical queries. This database table records the physical SQL information for the logical queries stored in the logical query logging table. The physical query table has a foreign key relationship to the logical query table.

**User, Session, and ID-related Columns**

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Specifies the unique row identifier.</td>
</tr>
</tbody>
</table>
### Column Description

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGICAL_QUERY_ID</td>
<td>Refers to the logical query in the logical query logging table. Data type is Varchar2(50).</td>
</tr>
<tr>
<td>HASH_ID</td>
<td>Indicates the HASH value for the logical query. Data type is Varchar2(128).</td>
</tr>
<tr>
<td>PHYSICAL_HASH_ID</td>
<td>Indicates the HASH value for the physical query. Data type is Varchar2(128).</td>
</tr>
</tbody>
</table>

#### Query Details-related Columns

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUERY_BLOB</td>
<td>Contains the entire physical SQL statement without any truncation. The QUERY_BLOB column is a character string of type long.</td>
</tr>
<tr>
<td>QUERY_TEXT</td>
<td>Contains the SQL statement submitted for the query. Data type is Varchar(1024).</td>
</tr>
</tbody>
</table>

#### Execution Timing-related Columns

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>END_DT</td>
<td>Indicates the date the physical query completed.</td>
</tr>
<tr>
<td>END_HOUR_MIN</td>
<td>Indicates the hour and minute the physical query completed.</td>
</tr>
<tr>
<td>END_TS</td>
<td>Indicates the date and time the physical query completed. The start and end timestamps also reflect any time that the query spent waiting for resources to become available.</td>
</tr>
<tr>
<td>TIME_SEC</td>
<td>Indicates the physical query execution time.</td>
</tr>
<tr>
<td>START_DT</td>
<td>Indicates the date the physical query was submitted.</td>
</tr>
<tr>
<td>START_HOUR_MIN</td>
<td>Indicates the hour and minute the physical query was submitted.</td>
</tr>
<tr>
<td>START_TS</td>
<td>Indicates the date and time the physical query was submitted.</td>
</tr>
</tbody>
</table>

#### Execution Details-related Columns

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROW_COUNT</td>
<td>Contains the number of rows returned to the query client.</td>
</tr>
</tbody>
</table>

### Usage Tracking Initialization Block Table

The following table describes the database table that tracks information about the initialization blocks.

#### User, Session, and ID-related Columns
<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USER_NAME</td>
<td>The name of the user who ran the initialization block. The data type is Varchar2(128).</td>
</tr>
<tr>
<td>TENANT_ID</td>
<td>The name of the tenant of the user who ran the initialization block. The data type is Varchar2(128).</td>
</tr>
<tr>
<td>SERVICE_NAME</td>
<td>The name of the service. The data type is Varchar2(128).</td>
</tr>
<tr>
<td>ECID</td>
<td>The system-generated execution context ID. The data type is Varchar2(1024).</td>
</tr>
<tr>
<td>SESSION_ID</td>
<td>The ID of the session. The data type is Number(10).</td>
</tr>
</tbody>
</table>

**Query Details-related Columns**

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPOSITORY_NAME</td>
<td>The name of the repository that the query accesses. The data type is Varchar2(128).</td>
</tr>
<tr>
<td>BLOCK_NAME</td>
<td>The name of the initialization block that was run. The data type is Varchar2(128).</td>
</tr>
</tbody>
</table>

**Execution Timing-related Columns**

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>START_TS</td>
<td>The date and time that the initialization block started.</td>
</tr>
<tr>
<td>END_TS</td>
<td>The date and time that the initialization block finished. The start and end timestamps also reflect the time that the query spent waiting for resources to become available.</td>
</tr>
<tr>
<td>DURATION</td>
<td>The length of time it took to run the initialization block. The data type is Number(13,3).</td>
</tr>
</tbody>
</table>

**Execution Details-related Columns**

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOTES</td>
<td>Notes about the initialization block and its running. The data type is Varchar2(1024).</td>
</tr>
</tbody>
</table>

**Typical Workflow for Tracking Usage**

Here are the tasks to track the user-level queries to Oracle Analytics Cloud.

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify the usage tracking statistics database</td>
<td>Specify a database to store the usage tracking statistics.</td>
<td>Specify the Usage Tracking Database</td>
</tr>
<tr>
<td>Specify the usage tracking parameters</td>
<td>Specify the connection details and table names of the usage tracking statistics database.</td>
<td>Set Usage Tracking Parameters</td>
</tr>
</tbody>
</table>
Specify the Usage Tracking Database

Before you can track usage of reports, dashboards, and data visualization projects on your system, you must specify the database where you want to store the usage tracking statistics.

The database you specify must have at least one schema defined. The system creates usage tracking tables in the schema whose name matches the user name you specify in the connection pool details. For example, if the name of a schema in the usage tracking database is "ANALYTICS_USAGE", you must specify "ANALYTICS_USAGE" in the User Name field for the connection pool. The usage tracking-tables are created in the schema named "ANALYTICS_USAGE".

You must configure the database and connection pool details in the physical layer of your data model file (RPD). Use the Oracle Analytics Developer Client Tool to edit the data model file.

1. In Oracle Analytics Developer Client Tool, open the data model file in the cloud. From the File menu, select Open, and then In the Cloud. Enter connection information for your instance.

2. Specify the usage tracking database:
   a. In the Physical layer of the data model file, right-click and select New Database.
   b. In the Database dialog, provide a name for your database, specify the database type, for example Oracle 12c, and click OK.
   c. Right-click the newly created database, select New Object, and then select Connection Pool.
   d. In the Connection Pool dialog, enter a name for the connection pool and specify values for:
      • Call interface: Select Default (Oracle Call Interface (OCI)).
      • Require fully qualified table names: Ensure that this check box isn't selected.
      • Data Source Name: Specify the data source to which you want this connection pool to connect and send physical queries. For example:{DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = <DB Host>)(PORT = <DB port>))(CONNECT_DATA = (SERVER = DEDICATED) (SERVICE_NAME = <Servicename>))} As an alternative to providing the data source name, select the Externalize connection check box and enter the name of the database connection that you defined for the data model. You can define database connections for data models using the Console. If you want to use the same database connections in the Oracle Analytics Developer Client Tool, then you don't have to re-enter the connection details. Instead, refer to the database connections “by name” in the Connection Pool dialog. See
Connect to Data in an Oracle Cloud Database and Connect to a Data Source with an External Connection.

- **User name and Password**: Enter a user name that matches the name of a schema available in the usage tracking database.

3. Validate your changes by clicking **Tools, Show Consistency Checker**, and then **Check All Objects**.

4. Optional: Save changes locally by clicking **File**, and then **Save**.

5. Upload the data model file that you edited, to your instance by clicking **File, Cloud**, and then **Publish**.

**Set Usage Tracking Parameters**

To start recording usage information, you specify connection details for the database you want to use and names for the database tables used to track usage. You set these parameters through the Console.

1. Sign in to your service.

2. Click **Console**.

3. Click **System Settings**.

4. Click **Usage Tracking**.

5. Set the following properties:

   - **Usage Tracking Connection Pool**
     Name of the connection pool that you created for your usage tracking database in the format, `<database name>.<connection pool name>`. For example, `UsageTracking.UTConnectionPool`.

   - **Usage Tracking Initialization Block Table**
     Name of the database table you want to use to store information about initialization blocks in the format, `<database name>.<catalog name>.<schema name>.<table name>` or `<database name>.<schema name>.<table name>`. For example, `UsageTracking.Analytics_Usage.InitBlockInfo`.

   - **Usage Tracking Physical Query Logging Table**
     Name of the database table you want to use to store physical query details in the format, `<database name>.<catalog name>.<schema name>.<table name>` or `<database name>.<schema name>.<table name>`. For example, `UsageTracking.Analytics_Usage.PhysicalQueries`.

   - **Usage Tracking Logical Query Logging Table**
     Name of the database table you want to use to store logical query details in the format, `<database name>.<catalog name>.<schema name>.<table name>` or `<database name>.<schema name>.<table name>`. For example, `UsageTracking.Analytics_Usage.LogicalQueries`.

   - **Usage Tracking Max Rows**
     Maximum number of rows that you want in the usage tracking tables.

6. Click **Restart**.

Oracle creates the usage tracking tables and starts to log user queries.
Analyze Usage Tracking Data

Create usage reports to understand the user queries and take appropriate action.

1. On the Home page, click the Page Menu and select Open Classic Home. Create and run an analysis.
   The system populates the query in the usage tracking tables in the usage tracking database.

2. Create a connection to the usage tracking database.
   See Create Database Connections.

3. On the Home page, click Create, and click Data Set.

4. In Create Data Set, click the connection to the usage tracking statistics database, and select the schema specified in the Physical Query and Logical Query Logging table names in System Settings. For example, schema name provided in <database name>.<schema name >.<table name> for the Physical Query and Logical Query Logging table names.

5. In Add Data Set, search for the usage tracking physical query logging table, add all the columns, name the data set (for example, Physical Queries), and then click Add. Similarly, search for the usage tracking logical query logging table, add all the columns, name the data set (for example, Logical Queries), and then click Add.

6. On the data set Results page, click Create Project. Add both the data sets to the project: for example, the Physical Queries and Logical Queries data sets. Name the project (for example, Usage Tracking).

7. In the Prepare tab of the project, click Data Diagram, and create joins between the data sets using a column such as the ID column.

8. In Visualize, drag data to create visualizations based on your requirement.
   Refer to the usage tracking table descriptions in "Understand Usage Tracking Tables" to select applicable columns. For example, you can create a visualization to show how many queries took how much time.

Enable Custom Java Script For Actions

Users working with analyses and dashboards can add action links that invoke custom JavaScript accessible through a web server. To enable this feature, administrators specify the URL of the web server in System Settings and register the web server as a safe domain.

1. Develop your scripts in JavaScript, store them in a web server, and make a note of the URL pointing to the JavaScript (*.JS) file containing the custom scripts.
   For example, you might develop a currency conversion script named mycurrencyconversion that you store in myscripts.js, and the URL might be: http://example.com:8080/mycustomscripts/myscripts.js.

2. Specify the URL of your web server in System Settings:
   a. Click Console, then click System Settings.
   b. In URL for Browser Script Actions, enter the URL that you noted in Step 1.
c. If you're prompted to restart, then follow the on-screen instructions.

3. Register the web server as a safe domain:
   a. Click Console, then click Safe Domains.
   b. Add an entry for the domain in the URL you specified in Step 2.
      For example, you might add: example.com:8080.
   c. For options, select Script and Connect.

4. Test your configuration:
   a. In Classic Home, open or create an analysis.
   b. Display the Column Properties for a column, click Interaction, then Add Action Link.
   c. Click Create New Action, then Invoke a Browser Script.
   d. Under Function Name enter the name of a script in your JavaScript (*.JS) file.
      For example, USERSCRIPT.mycurrencyconversion.
   e. Save the details, and open the analysis.
   f. Click the column to which you added the action, then click the action.

Deploy Write-back

Write-back enables users to update data from analyses.

Topics:
• About Write-back for Administrators
• Enable Write-back in Analyses and Dashboards

About Write-back for Administrators

Write-back enables users to update your data directly from dashboards and analyses.

Users with the 'Write Back to Database' privilege see write-back fields as editable fields in analyses. The values they enter are saved to the database. If a user doesn't have the 'Write Back to Database' privilege, then the write-back fields display as normal fields.

If a user types a value in an editable field and clicks the write-back button, then the application runs the insert or update SQL command defined in the write-back template. If the command succeeds, the analysis is updated with the new value. If there is an error in either reading the template or in running the SQL command, then an error message is displayed.

The insert command runs when a record doesn't yet exist and the user enters new data into the table. In this case, a user has typed in a table record whose value was originally null. The update command runs when a user modifies existing data. To display a record that doesn't yet exist in the physical table, you can create another similar table. Use this similar table to display placeholder records that a user can modify.
Enable Write-back in Analyses and Dashboards

Administrators can enable users to edit the data in analyses and dashboards.

1. Set up your data model:
   a. In the Developer Client Tool, open your data model (RPD file).
   b. In the Physical layer, double-click the physical table that contains the column for which you want to enable write-back.
   c. On the **General** tab of the Physical Table dialog, ensure that **Cacheable** isn't selected. Deselecting this option ensures that Presentation Services users can see updates immediately.
   d. In the Business Model and Mapping layer, double-click the corresponding logical column.
   e. In the Logical Column dialog, select **Writeable**, then click **OK**.
   f. In the Presentation layer, double-click the column that corresponds to the logical column for which you enabled write-back.
   g. In the Presentation Column dialog, click **Permissions**.
   h. Select the **ReadWrite** permission for the appropriate users and application roles.
   i. Save your changes.

2. Create a write-back template and copy it to your clipboard. For example:

   ```xml
   <?xml version="1.0" encoding="utf-8" ?>
   <WebMessageTables xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:oracle.bi.presentation/writebackschemas/v1>
   <WebMessageTable lang="en-us" system="WriteBack" table="Messages">
     <WebMessage name="SetQuotaUseID">
       <XML>
         <writeBack connectionPool="Supplier">
           <insert>INSERT INTO regiontypequota
             VALUES(@{c0},@{c1},'{c2}',@{c3},@{c4})</insert>
           <update>UPDATE regiontypequota SET Dollars=@{c4} WHERE
             YR=@{c0} AND Quarter=@{c1} AND Region='{c2}' AND ItemType=@{c3}</update>
         </writeBack>
       </XML>
     </WebMessage>
   </WebMessageTable>
   </WebMessageTables>
   ```

3. Apply your write-back template in Oracle Analytics:
   a. Click **Console**, then click **System Settings**.
   b. In **Writeback Template XML**, paste in the write-back template that you copied in Step 2.

4. Grant permissions to use the write-back code:
   a. Navigate to Classic home, then click **Administration**.
b. Under Security, click Manage Privileges, and navigate to Write Back.

c. Grant 'Write Back to Database' to Authenticated User.

d. Grant 'Manage Write Back' to BI Service Administrator.

5. To enable write-back in columns:

a. In the analysis editor, display the Column Properties of the column on which you want to enable write-back.

b. In the Column Properties dialog, click the Write Back tab.

   If the column has been enabled for write-back in the repository, then the Enable Write Back box is available.

c. Select the Enable Write Back option.

d. Specify the value of other options if you want to change the default.

e. Save your changes.

   The column is enabled for write-back in any analysis that includes this column.

6. To enable write-back in table views:

a. In the analysis editor, open the table view for editing.

b. Click View Properties.

c. In the Table Properties dialog, click the Write Back tab.

d. Select the Enable Write Back option.

e. Select the Template Name box, specify the value of "WebMessage name=" in the write-back template that you specified in Step 2.

   For example, the Template Name for the example template in Step 2 is 'SetQuotaUseID'.

f. Save your changes.

Configure Advanced Options

You can set several advanced options using the Console.

Topics:

- About Advanced Configuration
- Set Advanced Options

About Advanced Configuration

Administrators can set more advanced, service-level options through the System Settings page.

- Performance and Compatibility Options
- Analysis, Dashboard, and Pixel-Perfect Report Options
- Usage Tracking Options
- Prompt Options
- Format Options
Performance and Compatibility Options

You use these options to configure performance and compatibility settings between Oracle BI Enterprise Edition and Oracle Analytics. For example, you can set the maximum temporary file size.

Note:
If you change a performance and compatibility setting, you must restart the system for the new value to take effect.

<table>
<thead>
<tr>
<th>System Setting</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cache Enable</td>
<td>Specifies whether data query caching is enabled or disabled.</td>
</tr>
<tr>
<td></td>
<td>- enabled — Data caching is enabled.</td>
</tr>
<tr>
<td></td>
<td>- disabled — Caching is disabled.</td>
</tr>
<tr>
<td></td>
<td><strong>Default:</strong> Enabled</td>
</tr>
<tr>
<td>Evaluate Support Level</td>
<td>Specifies who can issue database functions: EVALUATE, EVALUATE_ANALYTIC,</td>
</tr>
<tr>
<td></td>
<td>EVALUATE_AGG, and EVALUATE_PREDICATE.</td>
</tr>
<tr>
<td></td>
<td>By default (0), the EVALUATE database functions are disabled.</td>
</tr>
<tr>
<td></td>
<td>- 1 — Service administrators only. Users with the BI Service Administrator</td>
</tr>
<tr>
<td></td>
<td>application role can invoke EVALUATE database functions.</td>
</tr>
<tr>
<td></td>
<td>- 2 — Anyone. Any user who signs in to Oracle Analytics can invoke EVALUATE</td>
</tr>
<tr>
<td></td>
<td>database functions.</td>
</tr>
<tr>
<td></td>
<td>- 0 (or any other value) — No one. All EVALUATE database functions are</td>
</tr>
<tr>
<td></td>
<td>disabled in Oracle Analytics.</td>
</tr>
<tr>
<td></td>
<td><strong>Valid Values:</strong> 0, 1, 2</td>
</tr>
<tr>
<td></td>
<td><strong>Default:</strong> 0</td>
</tr>
<tr>
<td>OBIEE Compatibility Release</td>
<td>Specifies the on-premise Oracle BI Enterprise Edition version number for feature</td>
</tr>
<tr>
<td></td>
<td>compatibility. This only applies if you upgrade from Oracle BI Enterprise Edition</td>
</tr>
<tr>
<td></td>
<td>to Oracle Analytics, and you want to use a feature from a specific on-premise</td>
</tr>
<tr>
<td></td>
<td>release in Oracle Analytics.</td>
</tr>
<tr>
<td></td>
<td><strong>Valid Values:</strong> 11.1.1.9, 11.1.1.10,</td>
</tr>
<tr>
<td></td>
<td>11.1.1.11, 12.2.1.0, 12.2.1.1, 12.2.1.3, 12.2.1.4, 12.2.2.0,</td>
</tr>
<tr>
<td></td>
<td>12.2.3.0, 12.2.4.0, 12.2.5.0</td>
</tr>
<tr>
<td></td>
<td><strong>Default:</strong> No value.</td>
</tr>
<tr>
<td>System Setting</td>
<td>More Information</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Maximum Working File Percent Size</td>
<td>Specifies that the temporary file doesn't exceed a specified percentage of the global work directory size limit. The size limit defaults for temporary files is 5% (of 100 GB), equivalent to 5 GB. The file limit applies individually to each temporary file, while the size specified for the total global work directory applies collectively to all temporary files created. You can increase or decrease this value within the range of 5% to 50%. This enables temporary file sizes between 5GB and 50GB. Raising this setting above 50% limits concurrency for large operations. <strong>Valid Values:</strong> 5–50 <strong>Default:</strong> 5</td>
</tr>
</tbody>
</table>
| Strong Datetime Type Checking          | Specifies whether to enforce strict checking for date and time data types and whether to reject queries that contain incompatibilities in date and time data types.  

- enabled — Enforces strict checking for date and time data types.  
- disabled — Relaxes strict checking for date and time data types. However, invalid queries or queries with severe date and time incompatibilities may still be still rejected. For example, date and time incompatibilities might be rejected if your relational database uses strict checking for those data types.  

**Default:** enabled |
<table>
<thead>
<tr>
<th>System Setting</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recursive Datetime Type Checking</td>
<td>Specifies whether to enforce strict recursive data type checking for comparisons between identical data types (for example, integer to integer) or non-compatible data types (for example, integer to short integer) on all data sources or with all data sets.</td>
</tr>
<tr>
<td></td>
<td><strong>enabled</strong>—Enforces strict recursive checking for identical or non-compatible data types on all data sources or data sets.</td>
</tr>
<tr>
<td></td>
<td><strong>disabled</strong>—Relaxes strict recursive checking for date and time data types on all data sources or data sets. However, if there are too many data type inconsistencies, you may want to change the data types to be compatible or use constants of the correct data type when comparing a column to a value. For example, after you migrate content from Oracle BI Enterprise Edition 11g to Oracle Analytics, you might start seeing this type of check error in your reports because Oracle BI Enterprise Edition 11g didn't enforce strict checks:</td>
</tr>
<tr>
<td></td>
<td>[nQSError: 22024] A comparison is being carried out between non-compatible types &lt;type1&gt; and &lt;type2&gt;.</td>
</tr>
<tr>
<td></td>
<td><strong>Default:</strong> enabled</td>
</tr>
<tr>
<td>System Setting</td>
<td>More Information</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Disable Right Trim for VARCHAR Data</td>
<td>Specifies whether the automatic removal of trailing spaces from varchar columns is enabled (off) or disabled (on). For example, when this property is enabled (off), when a user starts entering values in a field, the filter dialog automatically trims any trailing spaces.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Off</strong> — Trims trailing whitespaces in varchar columns when processing queries. This is the default for Oracle Analytics. For example, if a user enters the text 'My Product ', it trims it to 'My Product'.</td>
</tr>
<tr>
<td></td>
<td>• <strong>On</strong> — Preserves trailing whitespaces in varchar columns. If you primarily use Oracle Database sources, you might want to keep the default Oracle Database behavior of preserving trailing whitespaces rather than removing them. When you toggle this property on, you avoid the overhead of trimming spaces, and this can improve performance.</td>
</tr>
<tr>
<td></td>
<td>If you disable this property (set it to <strong>On</strong>) and you construct a filter such as <code>PRODUCT_DESCRIPTION = 'My Product '</code>, you must make sure the amount of trailing whitespace used exactly matches the varchar column value. If you don't, the filter won't correctly match the data values.</td>
</tr>
<tr>
<td></td>
<td><strong>Default:</strong> <strong>Off</strong></td>
</tr>
</tbody>
</table>

<p>| Enable Subrequest Shipping                  | Specifies if sub-requests to source databases are executed separately as standalone queries or executed together. By default, sub-requests are shipped separately which can improve performance if you execute complex reports with a large group of sub-requests, that is, you prefer to ship the sub-requests separately in multiple simplified queries rather than ship a large single complicated query all at once. |
|                                            | In Oracle BI Enterprise Edition, the default is set to <strong>NO</strong>. If you used Oracle BI Enterprise Edition and want to retain the previous default behavior, set this property to <strong>NO</strong> to continue executing database sub-requests together. |
|                                            | • <strong>Default</strong> — Database sub-requests are shipped separately. This is the same as the value <strong>YES</strong>. |
|                                            | • <strong>YES</strong> — Database sub-requests are shipped separately. |
|                                            | • <strong>NO</strong> — Database sub-requests are shipped together, all at once. |
|                                            | <strong>Default:</strong> <strong>Default</strong> |</p>
<table>
<thead>
<tr>
<th>System Setting</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database Feature Support Level</td>
<td>Specifies if users can use request variables to override database features.</td>
</tr>
<tr>
<td></td>
<td>• 1 — Only administrators can override database features.</td>
</tr>
<tr>
<td></td>
<td>• 2 — Any user can override database features.</td>
</tr>
<tr>
<td></td>
<td>• 0 — No user can override database features.</td>
</tr>
<tr>
<td></td>
<td><strong>Valid Values:</strong> 0, 1, 2</td>
</tr>
<tr>
<td></td>
<td><strong>Default:</strong> 0</td>
</tr>
<tr>
<td>Enable Database Analytics Node in Data Flows</td>
<td>Specifies whether the Database Analytics node is displayed in data flows.</td>
</tr>
<tr>
<td></td>
<td>• enabled (toggled on) — The Database Analytics node is available in data flows so that data flow designers can apply database analytics functions to the data.</td>
</tr>
<tr>
<td></td>
<td>• disabled — The Database Analytics node is not available in data flows. This prevents data flow designers from generating a potentially high number of SQL statements and slowing database performance.</td>
</tr>
<tr>
<td></td>
<td><strong>Default:</strong> enabled</td>
</tr>
<tr>
<td>Brushing Enabled for Subject Areas</td>
<td>Specifies if brushing is enabled by default for projects that use data from subject areas.</td>
</tr>
<tr>
<td></td>
<td>• enabled — Brushing is on by default for projects that use subject area data. Users can override this setting in the project and canvas properties.</td>
</tr>
<tr>
<td></td>
<td>• disabled — Brushing is off by default for projects that use subject area data. Users can override this setting in the project and canvas properties.</td>
</tr>
<tr>
<td></td>
<td><strong>Default:</strong> enabled</td>
</tr>
<tr>
<td>Brushing Enabled for Data Sets</td>
<td>Specifies if brushing is enabled by default for projects that use data set data.</td>
</tr>
<tr>
<td></td>
<td>• enabled — Brushing is on by default for projects that use data set data. Users can override this setting in the project and canvas properties.</td>
</tr>
<tr>
<td></td>
<td>• disabled — Brushing is off by default for projects that use data set data. Users can override in project and canvas properties.</td>
</tr>
<tr>
<td></td>
<td><strong>Default:</strong> enabled</td>
</tr>
</tbody>
</table>
Analysis, Dashboard, and Pixel-Perfect Report Options

You use these options to set defaults and customizations for dashboards, analyses, and reports. For example, you can configure the analysis editor to open by default to the Criteria tab or the Results tab.

**Note:**
If you change an analysis, dashboard, or pixel-perfect report setting, you must restart the system for the new value to take effect.

<table>
<thead>
<tr>
<th>System Setting</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portal Path</td>
<td>Specifies the URL of the dashboard page that's displayed by default when users sign in to Oracle Analytics. This setting applies to all users, but users can override it after they've signed in.</td>
</tr>
<tr>
<td>Custom Links XML</td>
<td>Specifies the XML code containing Classic Home page header customizations. You can use this XML code to customize the global header section of the Home page to better meet the needs of your users. For example, you can disable certain links or add custom ones.</td>
</tr>
<tr>
<td>Writeback Template XML</td>
<td>Defines the XML configuration for performing writeback on data elements. For example, you can use an XML template to enable users of a dashboard page or an analysis with the ability to modify, or write back, the data that they see in a table view.</td>
</tr>
</tbody>
</table>
| Answers Subject Area Sort Order | Sets the default sort order for subject area content trees. Users can override this default setting in the My Account: Subject Area Sort Order dialog.  
  - asc — Sorts A to Z.  
  - desc — Sorts Z to A.  
  - rpd — Uses the subject area sort order specified in the original analyses.  
  **Valid Values:** asc, desc, rpd  
  **Default:** rpd |
### System Setting

**Answers Editor Start Tab**

Specifies whether the analysis editor opens by default to the Criteria tab or the Results tab. This setting applies when users click an **Edit** link for an analysis from a dashboard, the Home page, or the Catalog page. Users can override this default setting by specifying the **Full Editor** option in the My Account dialog.

- `answerResults` — Opens the analysis editor by default to the Results tab.
- `answerCriteria` — Opens the analysis editor by default to the Criteria tab.

**Valid Values:** `answerResults`, `answerCriteria`

**Default:** `answerResults`

**BIP Reporting Toolbar Mode**

Configures an alternate toolbar for pixel-perfect reports that are included in a dashboard.

- `1` — Don’t display a toolbar for pixel-perfect reports.
- `2` — Displays the URL to the report without the logo, toolbar, tabs, or navigation path.
- `3` — Displays the URL to the report without the header or any parameter selections. Controls such as Template Selection, View, Export, and Send are still available.
- `4` — Displays the URL to the report only. No other page information or options are displayed.
- `6` — Displays parameter prompts for the report in a toolbar.

**Valid Values:** `1, 2, 3, 4, 6`

**Default:** `1`

### Usage Tracking Options

You use these options to specify how you want to monitor system usage. For example, you can set the number of rows that you want stored in the usage tracking tables.

**Note:**

If you change an usage tracking setting, you must restart the system for the new value to take effect.
System Setting | More Information
---|---
Usage Tracking Logical Query Logging Table | Specifies the name of the database table you want to use to store logical query details.
For example, `<database name>.<catalog name>.<schema name>.<table name>` or `<database name>.<schema name>.<table name>`.
Default: No value.

Usage Tracking Physical Query Logging Table | Specifies the name of the database table you want to use to store physical query details.
For example, `<database name>.<catalog name>.<schema name>.<table name>` or `<database name>.<schema name>.<table name>`.
Default: No value.

Usage Tracking Connection Pool | Specifies the name of the connection pool you created for your usage tracking statistics database. For example, `<database name>.<connection pool name>`.
Default: No value.

Usage Tracking Max Rows | Indicates the number of rows allowed in usage tracking tables, with a value of 0 indicating an unlimited number of rows.
Valid Values: Any positive number (up to 64-bit integer)
Default: 0

Usage Tracking Init Block Table | Specifies the name of the fully-qualified database table you use for inserting records that correspond to the initialization block statistics, as it appears in the physical layer of your data model file (RPD).
For example, `<database name>.<catalog name>.<schema name>.<table name>` or `<database name>.<schema name>.<table name>`.
Default: No value.

Prompt Options

You use these options to configure prompt behavior in analyses and dashboards. For example, you can enable search results to automatically display as highlighted when users enter search parameters, without the need to click Search.

These options apply only to analyses and dashboards. They don't apply to data visualizations.

**Note:**
If you change a prompt setting, you must restart the system for the new value to take effect.
<table>
<thead>
<tr>
<th><strong>System Setting</strong></th>
<th><strong>More Information</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Support Auto Complete</td>
<td>Enables or disables the auto-complete functionality available in prompts.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>Enabled</strong> — Enables auto-complete, which means that the <strong>Prompts Auto-Complete</strong> field is displayed and set to <strong>On</strong> in the My Account dialog and in the Dashboard Properties dialog.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>Disabled</strong> — Enables auto-complete, which means that the auto-complete fields in the My Account and Dashboard Properties dialogs aren’t available.</td>
<td></td>
</tr>
<tr>
<td><strong>Default</strong>: <strong>Disabled</strong></td>
<td></td>
</tr>
<tr>
<td>Case Insensitive Auto Complete</td>
<td>Specifies whether, when a user enters a prompt value in analyses and dashboards, the auto-complete functionality is case-insensitive.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>Enabled</strong> — Case isn’t considered when a user enters a prompt value such as &quot;Oracle&quot; or &quot;oracle.&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>Disabled</strong> — Case is considered when a user enters a prompt value, so the user must enter &quot;Oracle&quot; and not &quot;oracle&quot; to find the Oracle record.</td>
<td></td>
</tr>
<tr>
<td><strong>Default</strong>: <strong>Enabled</strong></td>
<td></td>
</tr>
<tr>
<td>Show Null Value When Column Is Nullable</td>
<td>Specifies whether to show the term &quot;NULL&quot; at runtime in the column prompt above the column separator in the drop-down list when the database allows null values.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>always</strong> — Always shows the term &quot;NULL&quot; above the column separator in the drop-down list.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>never</strong> — Never shows the term &quot;NULL&quot; in the drop-down list.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>asDataValue</strong> — Displays the data value in the drop-down list, not the term &quot;NULL&quot; above the separator in the drop-down list.</td>
<td></td>
</tr>
<tr>
<td><strong>Valid Values</strong>: <strong>always, never, asDataValue</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Default</strong>: <strong>always</strong></td>
<td></td>
</tr>
<tr>
<td>Auto Apply Dashboard Prompt Values</td>
<td>Enables the option to hide the <strong>Apply</strong> button so that prompt values can be applied without clicking any button.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>If this property is <strong>Enabled</strong>:</strong>**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>• Displays the <strong>Show Apply Button</strong> and <strong>Show Reset Button</strong> fields in the Edit Page Settings dialog.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>• Displays the <strong>Prompts Apply Buttons</strong> and <strong>Prompts Reset Buttons</strong> fields in the Dashboard Properties dialog.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>• Displays the <strong>Prompt Buttons on Current Page</strong> option on the dashboard builder’s Tools menu.</td>
<td></td>
</tr>
<tr>
<td><strong>Default</strong>: <strong>Enabled</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Restart Required</strong>: <strong>Yes</strong></td>
<td></td>
</tr>
</tbody>
</table>
**System Setting** | **More Information**
--- | ---
Auto Search on Prompt Value Search Dialog | Enables search results to automatically display and highlight when users enter search parameters, without the need to click **Search**. **Default:** Enabled

**Format Options**

You use these options to configure default currency and time zone settings for analyses and dashboards.

These options apply only to analyses and dashboards. They don't apply to data visualizations.

![Note:](image)

If you change a format setting, you must restart the system for the new value to take effect.

**System Setting** | **More Information**
--- | ---
Currencies XML | Defines the default currency that's displayed for currency data in analyses and dashboards. For example, you can change from American dollars ($) to Euros (€).

User Currency Preferences XML | Determines whether users see a **Currency** option in their My Account preferences dialog and the list of currencies available to them. If you provide the **Currency** option, users can select in which currency they prefer to view columns of currency data in analyses and dashboards.
### System Setting

<table>
<thead>
<tr>
<th>Default Data Offset Time Zone</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies a time zone offset of the original data that users see in analyses and dashboards. Enter an offset value that indicates the number of hours away from Greenwich Mean Time (GMT) time. For example, to display values in United States Eastern Standard Time (EST), which is Greenwich Mean Time (GMT) - 5 hours, enter the value GMT-05:00 or the equivalent value in minutes -300. If you don't set this option, no time zone conversion occurs because the value is &quot;unknown&quot;. <strong>Specify a different offset value for each user</strong> If you want to specify a different offset value where session variables can be used (for example, expressions, calculations), don't use the Default Data Offset Time Zone setting. Instead, set the system session variable DATA_TZ in the repository. See About Session Variables.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Default User Preferred Time Zone</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies a default preferred time zone that users see in analyses and dashboards before they select their own in the My Account Preferences dialog. If you don't set this option, Oracle Analytics uses the local time zone. <strong>Specify a different time zone for each user</strong> If you want to specify a different offset value where session variables can be used (for example, expressions, calculations), don't use the Default User Preferred Time Zone setting. Instead, set the system session variable TIMEZONE in the repository. See About Session Variables.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Default Time Zone for Date Calculations</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies the time zone used for evaluating date calculations such as getting the current date/time, truncating datetime values to a date, and extracting time fields from date/time expressions. If you leave this field blank, Oracle Analytics uses the operating system time zone when evaluating date calculations.</td>
<td></td>
</tr>
</tbody>
</table>

### View Options

You use these options to configure default search and viewing settings for users working with analyses and dashboards. These options apply only to analyses and dashboards. They don't apply to data visualizations.
### System Setting

<table>
<thead>
<tr>
<th>System Setting</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prompt Auto Complete Matching Level</strong></td>
<td>Specifies whether the auto-complete functionality uses matching to find the prompt value that the user enters into the prompt field. This setting doesn’t apply if the user accesses the Search dialog to locate and specify a prompt value.</td>
</tr>
<tr>
<td></td>
<td>- <strong>StartsWith</strong> — Searches for a match that begins with the text that the user types. For example, the user types &quot;M&quot; and the following stored values are displayed: &quot;MicroPod&quot; and &quot;MP3 Speakers System&quot;.</td>
</tr>
<tr>
<td></td>
<td>- <strong>WordStartsWith</strong> — Searches for a match at the beginning of a word or group of words. For example, the user types &quot;C&quot; and the following values are displayed: &quot;ComCell&quot;, &quot;MPEG Camcorder&quot;, and &quot;7 Megapixel Digital Camera&quot;.</td>
</tr>
<tr>
<td></td>
<td>- <strong>MatchAll</strong> — Searches for any match within the word or words.</td>
</tr>
<tr>
<td></td>
<td><strong>Valid Values</strong>: MatchAll, StartsWith, WordStartsWith</td>
</tr>
<tr>
<td><strong>Default</strong>: MatchAll</td>
<td></td>
</tr>
</tbody>
</table>

| Default Scrolling Enabled                           | Specifies how data scrolls in these views: table, pivot table, heat matrix, and simple and advanced trellis views.                                      |
|                                                     | - **Enabled** — Data displays with a fixed header and content scrolling controls for users to browse the data.                                        |
|                                                     | - **Disabled** — Data displays with content paging controls for users to browse the data.                                                           |
| **Default**: Enabled                                 |                                                                                                                                                     |

<p>| View Interactions: Include/Exclude Columns          | Specifies whether the Include/Exclude Columns option is selected by default in the Analysis Properties dialog: Interactions tab.                        |
|                                                     | - <strong>Enabled</strong> — The Include/Exclude Columns option is selected by default in the Analysis Properties dialog: Interactions tab.                        |
|                                                     | - <strong>Disabled</strong> — The Include/Exclude Columns option isn’t selected by default in the Analysis Properties dialog: Interactions tab.                      |
| <strong>Default</strong>: Enabled                                 |                                                                                                                                                     |</p>
<table>
<thead>
<tr>
<th>System Setting</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>View Interactions: Display/Hide Running Sum</td>
<td>Specifies whether the <strong>Display/Hide Running Sum</strong> option is selected by default in the Analysis Properties dialog: Interactions tab.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Enabled</strong> — The <strong>Display/Hide Running Sum</strong> option is selected by default in the Analysis Properties dialog: Interactions tab.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Disabled</strong> — The <strong>Display/Hide Running Sum</strong> option isn’t selected by default in the Analysis Properties dialog: Interactions tab.</td>
</tr>
<tr>
<td></td>
<td><strong>Default</strong>: Disabled</td>
</tr>
<tr>
<td>View Interactions: Create/Edit/Remove Groups</td>
<td>Specifies whether the <strong>Create/Edit/Remove Groups</strong> option is selected by default in the Analysis Properties dialog: Interactions tab.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Enabled</strong> — The <strong>Create/Edit/Remove Groups</strong> option is selected by default in the Analysis Properties dialog: Interactions tab.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Disabled</strong> — The <strong>Create/Edit/Remove Groups</strong> option isn’t selected by default in the Analysis Properties dialog: Interactions tab.</td>
</tr>
<tr>
<td></td>
<td><strong>Default</strong>: Disabled</td>
</tr>
<tr>
<td>View Interactions: Move Columns</td>
<td>Specifies whether the <strong>Move Columns</strong> option is selected by default in the Analysis Properties dialog: Interactions tab.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Enabled</strong> — The <strong>Move Columns</strong> option is selected by default in the Analysis Properties dialog: Interactions tab.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Disabled</strong> — The <strong>Move Columns</strong> option isn’t selected by default in the Analysis Properties dialog: Interactions tab.</td>
</tr>
<tr>
<td></td>
<td><strong>Default</strong>: Enabled</td>
</tr>
<tr>
<td>View Interactions: Sort Columns</td>
<td>Specifies whether the <strong>Sort Columns</strong> option is selected by default in the Analysis Properties dialog: Interactions tab.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Enabled</strong> — The <strong>Sort Columns</strong> option is selected by default in the Analysis Properties dialog: Interactions tab.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Disabled</strong> — The <strong>Sort Columns</strong> option isn’t selected by default in the Analysis Properties dialog: Interactions tab.</td>
</tr>
<tr>
<td></td>
<td><strong>Default</strong>: Enabled</td>
</tr>
<tr>
<td>System Setting</td>
<td>More Information</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| View Interactions: Display/Hide Sub-totals  | Specifies whether the **Display/Hide Sub-totals** option is selected by default in the Analysis Properties dialog: Interactions tab.  
  - **Enabled** — The **Display/Hide Sub-totals** option is selected by default in the Analysis Properties dialog: Interactions tab.  
  - **Disabled** — The **Display/Hide Sub-totals** option isn't selected by default in the Analysis Properties dialog: Interactions tab.  
  **Default:** Disabled                                                                        |
| View Interactions: Drill                    | Specifies whether the **Drill** (when not a primary interaction) option is selected by default in the Analysis Properties dialog: Interactions tab.  
  - **Enabled** — The **Drill** (when not a primary interaction) option is selected by default in the Analysis Properties dialog: Interactions tab.  
  - **Disabled** — The **Drill** (when not a primary interaction) option isn't selected by default in the Analysis Properties dialog: Interactions tab.  
  **Default:** Enabled                                                                        |
| View Interactions: Add/Remove Values        | Specifies whether the **Add/Remove Values** option is selected by default in the Analysis Properties dialog: Interactions tab.  
  - **Enabled** — The **Add/Remove Values** option is selected by default in the Analysis Properties dialog: Interactions tab.  
  - **Disabled** — The **Add/Remove Values** option isn't selected by default in the Analysis Properties dialog: Interactions tab.  
  **Default:** Disabled                                                                        |
| View Interactions: Create/Edit/Remove Calculated Items | Specifies whether the **Create/Edit/Remove Calculated Items** option is selected by default in the Analysis Properties dialog: Interactions tab.  
  - **Enabled** — The **Create/Edit/Remove Calculated Items** option is selected by default in the Analysis Properties dialog: Interactions tab.  
  - **Disabled** — The **Create/Edit/Remove Calculated Items** option isn't selected by default in the Analysis Properties dialog: Interactions tab.  
  **Default:** Disabled                                                                        |
Connection Options

You use these options to configure connection defaults. For example, you can specify how often to synchronize the database connections defined in Console.

**Note:**

If you change a connection setting, you must restart the system for the new value to take effect.

<table>
<thead>
<tr>
<th>System Setting</th>
<th>More Information</th>
</tr>
</thead>
</table>
| Table/Pivot View: Max Visible Rows                  | Specifies the maximum number of rows you want displayed for content paging in table and pivot table views in analyses and dashboards. The minimum number of rows you can specify to display is 100.  
**Valid Values:** 100–5000  
**Default:** 5000 |

<table>
<thead>
<tr>
<th>System Setting</th>
<th>More Information</th>
</tr>
</thead>
</table>
| Connection Externalization Enabled                  | Specifies whether to externalize any database connections that administrators defined for data models in Oracle Analytics Cloud, using Console.  
When you externalize the connection information, anyone who uses Oracle Analytics Developer Client Tool to edit data models can refer to the database connections “by name” rather than re-entering the connection details in full (connection pool settings). See Connect to a Data Source using a Connection Defined Through Console.  
- **Enabled** — Externalize the database connections that administrators define for data models through Console.  
- **Disabled** — Don't externalize database connections details. Anyone using Oracle Analytics Developer Client Tool to edit data models must enter the database connection information in the Connection Pool dialog.  
**Default:** Enabled |
### System Setting

**Connection Externalization Polling Interval**

Specifies how often Oracle Analytics Cloud synchronizes database connections defined in Console. Enter a suitable polling interval, in seconds. By default, database connections are synchronized every 180 seconds.

This property is used only when Connection Externalization Enabled is set to *yes*.

**Valid Values:** 60–3600

**Default:** 180

---

### Security Options

Use Security options to control how users can perform specific actions in analyses and dashboards.

These options apply only to analyses and dashboards. They don't apply to data visualizations.

**Note:**

If you change a security setting, you must restart the system for the new value to take effect, unless we state otherwise in this topic.

---

<table>
<thead>
<tr>
<th>System Setting</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enforce Safe Domains in Actions</td>
<td>Determines whether action links that users add to analyses and dashboards can invoke any URL or only URLs that administrators specify in the safe domains list.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Enabled</strong> — Don't allow actions to invoke any URL that's not in the safe domain list.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Disabled</strong> — Allow actions to invoke any URL, even if the URL isn't listed as a safe domain.</td>
</tr>
<tr>
<td></td>
<td><strong>Default:</strong> Enabled for a brand new service and Disabled for an existing service.</td>
</tr>
<tr>
<td></td>
<td><strong>Restart Required:</strong> No</td>
</tr>
</tbody>
</table>
## System Setting

<table>
<thead>
<tr>
<th>Allow HTML Content</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determines whether the <strong>Contains HTML Markup</strong> option is displayed in various dialogs and editors where you can apply formatting. This option allows users to format content with valid HTML markup.</td>
<td></td>
</tr>
<tr>
<td>- <strong>Enabled</strong> — Display the <strong>Contains HTML Markup</strong> option in various dialogs where additional formatting might be useful. For example:</td>
<td></td>
</tr>
<tr>
<td>- For analyses: In the analysis editor, Analysis Properties dialog, Column Properties dialog, New Calculated Measure dialog.</td>
<td></td>
</tr>
<tr>
<td>- For dashboards: In the Dashboard Properties dialog.</td>
<td></td>
</tr>
<tr>
<td>- <strong>Disabled</strong> — Hide the <strong>Contains HTML Markup</strong> option. Users can enter only plain text.</td>
<td></td>
</tr>
<tr>
<td><strong>Default:</strong> Disabled</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>URL for Browser Script Actions</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies the URL for the JavaScript file containing custom Browser Script Actions.</td>
<td></td>
</tr>
<tr>
<td><strong>Default:</strong> No value.</td>
<td></td>
</tr>
</tbody>
</table>

## Set Advanced Options

Use Console to set advanced options for Oracle Analytics.

1. In the Oracle Analytics Home page, click the **Navigator**, and then click **Console**.
2. Click **System Settings**.
3. Update the property value.
4. If required, click **Restart** and then click **OK** to confirm.
   
   Wait a few moments for the changes to refresh through the system.

## Manage Query Caching

Oracle Analytics Cloud maintains a local cache of query results sets in the query cache.

**Topics:**

- About the Query Cache
- Enable or Disable Query Caching
- Monitor and Manage the Cache
- Strategies for Using the Cache
About the Query Cache

The query cache enables Oracle Analytics Cloud to satisfy many subsequent query requests without accessing back-end data sources and this increases query performance. However, the query cache entries might get stale as updates occur on the back-end data sources.

Advantages of Caching

The fastest way to process a query is to skip the bulk of the processing and use a precomputed answer.

With query caching, Oracle Analytics Cloud stores the precomputed results of queries in a local cache. If another query can use those results, then all database processing for that query is eliminated. This can result in dramatic improvements in the average query response time.

In addition to improving performance, being able to answer a query from a local cache conserves network resources and processing time on the database server. Network resources are conserved because intermediate results aren't returned to Oracle Analytics Cloud. Not running the query on the database frees the database server to do other work. If the database uses a charge back system, then running less queries might also cut costs in the budget.

Another benefit of using the cache to answer a query is savings in processing time on Oracle Analytics Cloud, especially if the query results are retrieved from multiple databases. Depending on the query, there might be considerable join and sort processing in the server. If the query is already calculated, then this processing is avoided, freeing server resources for other tasks.

To summarize, query caching can dramatically improve query performance and reduce network traffic, database processing, and processing overhead.

Costs of Caching

Query caching has many obvious benefits, but also certain costs.

- Potential for cached results being stale
- Administrative costs of managing the cache

With cache management, the benefits typically far outweigh the costs.

Administrative Tasks

Some administrative tasks are associated with caching. You must set the cache persistence time for each physical table appropriately, knowing how often data in that table is updated.

When the frequency of the update varies, you must keep track of when changes occur and purge the cache manually when necessary.

Keep the Cache Up To Date

If the cache entries aren't purged when the data in the underlying databases changes, then queries can potentially return results that are out of date.
You must evaluate whether this is acceptable. It might be acceptable to allow the cache to contain some stale data. You must decide what level of stale data is acceptable and then configure (and follow) a set of rules to reflect those levels.

For example, suppose an application analyzes corporate data from a large conglomerate, and you’re performing yearly summaries of the different divisions in the company. New data doesn’t materially affect the queries because the new data affects only next year’s summaries. In this case, the trade-offs for deciding whether to purge the cache might favor leaving the entries in the cache.

Suppose, however, that the databases are updated three times a day and you’re performing queries on the current day’s activities. In this case, you must purge the cache much more often, or perhaps consider not using the cache at all.

Another scenario is that you rebuild the data set from the beginning at periodic intervals (for example, once per week). In this example, you can purge the entire cache as part of the process of rebuilding the data set, ensuring that you never have stale data in the cache.

Whatever your situation, you must evaluate what is acceptable for noncurrent information returned to the users.

Cache Sharing Across Users

If shared logon is enabled for a particular connection pool, then the cache can be shared across users and doesn’t need to be seeded for each user.

If shared logon isn’t enabled and a user-specific database login is used, then each user generates their own cache entry.

Enable or Disable Query Caching

In Oracle Analytics Cloud, the query cache is enabled by default. You can enable or disable query caching on the System Settings page.

1. Click Console.
2. Click System Settings.
3. Click Performance and Compatibility.
4. Set Cache Enable on or off.
   - On — Data query caching is enabled.
   - Off — Caching is disabled.
5. Click Restart and then click OK to confirm.
   Wait a few moments for the changes to refresh through the system.

Monitor and Manage the Cache

To manage the changes in the underlying databases and to monitor cache entries, you must develop a cache management strategy.

You need a process to invalidate cache entries when the data in the underlying tables that compose the cache entry changes, and a process to monitor, identify, and remove any undesirable cache entries.
This section contains the following topics:

- Choose a Cache Management Strategy
- How Data Model Changes Affect the Query Cache

Choose a Cache Management Strategy

The choice of a cache management strategy depends on the volatility of the data in the underlying databases and the predictability of the changes that cause this volatility.

It also depends on the number and types of queries that comprise your cache and the usage those queries receive. This section provides an overview of the various approaches to cache management.

Disable Caching for the System

You can disable caching for the entire system to stop all new cache entries and stop any new queries from using the existing cache. Disabling caching lets you enable it at a later time without losing any entries that are stored in the cache.

Temporarily disabling caching is a useful strategy in situations where you might suspect having stale cache entries, but want to verify if they're actually stale before purging those entries or the entire cache. If you find that the data stored in the cache is still relevant, or after you have safely purged problem entries, then you can safely enable the cache. If necessary, purge the entire cache or the cache that's associated with a particular business model before enabling the cache again.

Cache and Cache Persistence Timing for Specified Physical Tables

You can set a cacheable attribute for each physical table, enabling you to specify whether queries for that table are added to the cache to answer future queries.

If you enable caching for a table, then any query involving the table is added to the cache. All tables are cacheable by default, but some tables mightn't be good candidates to include in the cache unless you use the Cache Persistence Time settings. For example, suppose that you've a table that stores stock ticker data that's updated every minute. You could use the Cache Persistence Time settings to purge the entries for that table every 59 seconds.

You can also use the **Cache persistence time** field to specify how long the entries for this table are stored in the query cache. This is useful for data sources that are updated frequently.

1. In Oracle Analytics Developer Client Tool, in the Physical layer, double-click the physical table.
2. In the Physical Table properties dialog, in the General tab, make one of the following selections:
   - To enable caching, select **Cacheable**.
   - To prevent a table from being cached, deselect **Cacheable**.
3. To set a cache expiration time, specify a **Cache persistence time** and specify a unit of measure (days, hours, minutes, or seconds). If you don't want cache entries to automatically expire, select **Cache never expires**.
4. Click **OK**.
How Data Model Changes Affect the Query Cache

When you modify data models using Data Modeler or Oracle Analytics Developer Client Tool, the changes can have implications for entries that are stored in the cache. For example, if you change the definition of a physical object or a dynamic repository variable, cache entries that reference that object or variable might no longer be valid. These changes might result in the need to purge the cache. There are two scenarios to be aware of: when you modify your existing data model, and when you create (or upload) a new data model.

Changes to the Data Model

When you modify a data model or upload a different RPD file, any changes that you make that affect cache entries automatically result in a purge of all cache entries that reference the changed objects. The purge occurs when you upload the changes. For example, if you delete a physical table from a data model, then all cache entries that reference that table are purged upon check in. Any changes made to a data model in the Business Model and Mapping layer purge all cache entries for that data model.

Changes to Dynamic Repository Variables

The values of dynamic repository variables are refreshed by data that’s returned from queries. When you define a dynamic repository variable, you create an initialization block or use a preexisting one that contains a SQL query. You also configure a schedule to run the query and periodically refresh the value of the variable.

If the value of a dynamic repository variable changes, then any cache entry which uses this variable in a column becomes stale, and a new cache entry is generated when data in that entry is needed again. The old cache entry isn’t removed immediately, but remains until it is cleaned through the usual caching mechanism.

Strategies for Using the Cache

One of the main advantages of query caching is to improve apparent query performance.

Query caching might be valuable to seed the cache during off hours by running queries and caching their results. A good seeding strategy requires that you know when cache hits occur.

If you want to seed the cache for all users, you might seed the cache with the following query:

SELECT User, SRs

After seeding the cache using SELECT User, SRs, the following queries are cache hits:

SELECT User, SRs WHERE user = valueof(nq_SESSION.USER) (and the user was USER1)
SELECT User, SRs WHERE user = valueof(nq_SESSION.USER) (and the user was USER2)
SELECT User, SRs WHERE user = valueof(nq_SESSION.USER) (and the user was USER3)

This section contains the following topics:

• About Cache Hits
• Run a Suite of Queries to Populate the Cache
• Use Agents to Seed the Query Cache
Use Oracle Analytics Developer Client Tool to Automatically Purge the Cache for Specific Tables

About Cache Hits

When caching is enabled, each query is evaluated to determine whether it qualifies for a cache hit.

A cache hit means that Oracle Analytics Cloud was able to use cache to answer the query and didn’t go to the database at all. Oracle Analytics Cloud can use the query cache to answer queries at the same or higher level of aggregation.

Many factors determine whether cache is hit. The table below describes these factors.

<table>
<thead>
<tr>
<th>Factor or Rule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A subset of columns in the SELECT list must match</td>
<td>All of the columns in the SELECT list of a new query have to exist in the cached query to qualify for a cache hit, or they must be able to be calculated from the columns in the query. This rule describes the minimum requirement to hit the cache, but meeting this rule doesn’t guarantee a cache hit. The other rules listed in this table also apply.</td>
</tr>
<tr>
<td>Columns in the SELECT list can be composed of expressions on the columns of the cached queries</td>
<td>Oracle Analytics Cloud can calculate expressions on cached results to answer the new query, but all the columns must be in the cached result. For example, the query: SELECT product, month, averageprice FROM sales WHERE year = 2000 hits cache on the query: SELECT product, month, dollars, unitsales FROM sales WHERE year = 2000 because averageprice can be computed from dollars and unitsales (averageprice = dollars/unitsales).</td>
</tr>
<tr>
<td>Factor or Rule</td>
<td>Description</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td><em>WHERE</em> clause must be semantically the same or a logical subset</td>
<td>For the query to qualify as a cache hit, the <em>WHERE</em> clause constraints must be either equivalent to the cached results, or a subset of the cached results. A <em>WHERE</em> clause that's a logical subset of a cached query qualifies for a cache hit if the subset meets one of the following criterion:</td>
</tr>
<tr>
<td>· A subset of <em>IN</em> list values. Queries requesting fewer elements of an <em>IN</em> list cached query qualify for a cache hit. For example, the following query:</td>
<td></td>
</tr>
<tr>
<td>```sql</td>
<td></td>
</tr>
<tr>
<td>SELECT employeename, region</td>
<td></td>
</tr>
<tr>
<td>FROM employee, geography</td>
<td></td>
</tr>
<tr>
<td>WHERE region in (&quot;EAST&quot;, &quot;WEST&quot;)</td>
<td></td>
</tr>
<tr>
<td>```</td>
<td></td>
</tr>
<tr>
<td>qualifies as a hit on the following cached query:</td>
<td></td>
</tr>
<tr>
<td>```sql</td>
<td></td>
</tr>
<tr>
<td>SELECT employeename, region</td>
<td></td>
</tr>
<tr>
<td>FROM employee, geography</td>
<td></td>
</tr>
<tr>
<td>WHERE region in (&quot;NORTH&quot;, &quot;SOUTH&quot;, &quot;EAST&quot;, &quot;WEST&quot;)</td>
<td></td>
</tr>
<tr>
<td>· It contains fewer (but identical) OR constraints than the cached result.</td>
<td></td>
</tr>
<tr>
<td>· It contains a logical subset of a literal comparison. For example, the following predicate:</td>
<td></td>
</tr>
<tr>
<td>```sql</td>
<td></td>
</tr>
<tr>
<td>WHERE revenue &lt; 1000</td>
<td></td>
</tr>
<tr>
<td>```</td>
<td></td>
</tr>
<tr>
<td>qualifies as a cache hit on a comparable query with the predicate:</td>
<td></td>
</tr>
<tr>
<td>```sql</td>
<td></td>
</tr>
<tr>
<td>WHERE revenue &lt; 5000</td>
<td></td>
</tr>
<tr>
<td>```</td>
<td></td>
</tr>
<tr>
<td>· There is no <em>WHERE</em> clause. If a query with no <em>WHERE</em> clause is cached, then queries that satisfy all other cache hit rules qualify as cache hits regardless of their <em>WHERE</em> clause.</td>
<td></td>
</tr>
<tr>
<td>In addition columns that are used on the <em>WHERE</em> clause must be on the projection list. For example, the following query:</td>
<td></td>
</tr>
<tr>
<td>```sql</td>
<td></td>
</tr>
<tr>
<td>SELECT employeename</td>
<td></td>
</tr>
<tr>
<td>FROM employee, geography</td>
<td></td>
</tr>
<tr>
<td>WHERE region in (&quot;EAST&quot;, &quot;WEST&quot;)</td>
<td></td>
</tr>
<tr>
<td>```</td>
<td></td>
</tr>
<tr>
<td>Doesn't result in a cache hit for the seeding query in the previous list because REGION isn't on the projection list.</td>
<td></td>
</tr>
<tr>
<td>Dimension-only queries must be an exact match</td>
<td>If a query is dimension only, meaning that no fact or measure is included in the query, then only an exact match of the projection columns of the cached query hits the cache. This behavior prevents false positives when there are multiple logical sources for a dimension table.</td>
</tr>
<tr>
<td>Factor or Rule</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Queries with special functions must be an exact match</td>
<td>Other queries that contain special functions such as time series functions (AGO, TODATE, and PERIODROLLING), limit and offset functions (OFFSET and FETCH), relationship functions (ISANCESTOR, ISLEAF, ISROOT, and ISSIBLING), external aggregation functions, and generally filter metrics must also be an exact match with the projection columns in the cached query. In these cases, the filter must also be an exact match. For filter metrics, if the filter metric can be rewritten as a WHERE clause, then the subset cache might be leveraged.</td>
</tr>
<tr>
<td>Set of logical tables must match</td>
<td>To qualify as a cache hit, all incoming queries must have the same set of logical tables as the cache entry. This rule avoids false cache hits. For example, SELECT * FROM product doesn't match SELECT * FROM product, sales.</td>
</tr>
<tr>
<td>Session variable values must match, including security session variables</td>
<td>If the logical SQL or physical SQL statement refers to any session variable, then the session variable values must match. Otherwise, the cache isn't hit. In addition, the value of session variables that are security sensitive must match the security session variable values that are defined in the repository, even though the logical SQL statement itself doesn't reference session variables. See Ensure Correct Cache Results When Using Row-Level Database Security.</td>
</tr>
<tr>
<td>Equivalent join conditions</td>
<td>The resultant joined logical table of a new query request has to be the same as (or a subset of) the cached results to qualify for a cache hit.</td>
</tr>
<tr>
<td>DISTINCT attribute must be the same</td>
<td>If a cached query eliminates duplicate records with DISTINCT processing (for example, SELECT DISTINCT...), then requests for the cached columns must also include the DISTINCT processing; a request for the same column without the DISTINCT processing is a cache miss.</td>
</tr>
</tbody>
</table>
| Queries must contain compatible aggregation levels  | Queries that request an aggregated level of information can use cached results at a lower level of aggregation. For example, the following query requests the quantity sold at the supplier and region and city level:  

```
SELECT supplier, region, city, qtysold  
FROM suppliercity
```

The following query requests the quantity sold at the city level:

```
SELECT city, qtysold  
FROM suppliercity
```

The second query results in a cache hit on the first query. |
| Limited additional aggregation                     | For example, if a query with the column qtysold is cached, then a request for RANK(qtysold) results in a cache miss. Additionally, a query that requests qtysold at the country level can get a cache hit from a query that requests qtysold at the country, region level. |
| ORDER BY clause must be comprised of columns in the select list | Queries that order by columns that aren't contained in the select list result in cache misses. |
Factor or Rule | Description
--- | ---
Diagnosing cache hit behavior | To better assess cache hit behavior, set the ENABLE_CACHE_DIAGNOSTICS session variable to 4, as shown in the following example: \[ \text{ENABLE\_CACHE\_DIAGNOSTICS}=4 \]

Ensure Correct Cache Results When Using Row-Level Database Security

When using a row-level database security strategy, such as a Virtual Private Database (VPD), the returned data results are contingent on the authorization credentials of the user.

Because of this, Oracle Analytics Cloud must know whether a data source is using row-level database security and which variables are relevant to security.

To ensure that cache hits only occur on cache entries that include and match all security-sensitive variables, you must correctly configure the database object and session variable objects in the Oracle Analytics Developer Client Tool, as follows:

- **Database object.** In the Physical layer, in the General tab of the Database dialog, select **Virtual Private Database** to specify that the data source is using row-level database security.
  
  If you are using row-level database security with shared caching, then you must select this option to prevent the sharing of cache entries whose security-sensitive variables don't match.

- **Session Variable object.** For security-related variables, in the Session Variable dialog, select **Security Sensitive** to identify them as sensitive to security when using a row-level database security strategy. This option ensures that cache entries are marked with the security-sensitive variables, enabling security-sensitive variable matching on all incoming queries.

Run a Suite of Queries to Populate the Cache

To maximize potential cache hits, one strategy is to run a suite of queries to populate the cache.

The following are some recommendations for the types of queries to use when creating a suite of queries with which to seed the cache.

- **Common prebuilt queries.** Queries that are commonly run, particularly ones that are expensive to process, are excellent cache seeding queries. Queries whose results are embedded in dashboards are good examples of common queries.

- **SELECT lists with no expressions.** Eliminating expressions on **SELECT** list columns expands the possibility for cache hits. A cached column with an expression can only answer a new query with the same expression; a cached column with no expressions can answer a request for that column with any expression. For example, a cached request such as:

  \[ \text{SELECT QUANTITY, REVENUE...} \]

  can answer a new query such as:
SELECT QUANTITY/REVENUE...

but not the reverse.

- **No WHERE clause.** If there is no WHERE clause in a cached result, then it can be used to answer queries that satisfy the cache hit rules for the select list with any WHERE clause that includes columns in the projection list.

In general, the best queries to seed cache with are queries that heavily consume database processing resources and that are likely to be reissued. Be careful not to seed the cache with simple queries that return many rows. These queries (for example, SELECT * FROM PRODUCTS, where PRODUCTS maps directly to a single database table) require very little database processing. Their expense is network and disk overhead, which are factors that caching doesn't alleviate.

When Oracle Analytics Cloud refreshes repository variables, it examines business models to determine if they reference those repository variables. If they do, Oracle Analytics Cloud purges all cache for those business models. See [How Data Model Changes Affect the Query Cache](#).

### Use Agents to Seed the Query Cache

You can configure agents to seed the Oracle Analytics Cloud query cache.

Seeding the cache can improve response times for users when they run analyses or view analyses that are embedded on their dashboards. You can accomplish this by scheduling agents to run requests that refresh this data.

1. In Oracle Analytics Cloud, open the Classic Home page, and select **Agent (Create section)**.
2. On the General tab, select **Recipient** for the **Run As** option. Personalized cache seeding uses the data visibility of each recipient to customize agent delivery content for each recipient.
3. On the Schedule tab, specify when you want the cache to be seeded.
4. Optional: Select **Condition** and create or select a conditional request. For example, you might have a business model that determines when the ETL process is complete. You could use a report based on this business model to be the conditional trigger for the cache seed to begin.
5. On the Delivery Content tab, select an individual request or an entire dashboard page for which you want to seed the cache. Selecting a dashboard page can save time.
6. On the Recipients tab, select individual users or groups to be the recipients.
7. On the Destinations tab, clear all user destinations and select **Oracle Analytics Server Cache**.
8. Save the agent by selecting the **Save** button in the upper-right corner.

The only difference between cache seeding agents and other agents is that they clear the previous cache automatically and don't appear on the dashboard as alerts.
Use Oracle Analytics Developer Client Tool to Automatically Purge the Cache for Specific Tables

Purging the cache deletes entries from the query cache and keeps your content fresh. You can automatically purge cache entries for specific tables, by setting the **Cache Persistence Time** field for each table in Oracle Analytics Developer Client Tool.

This is useful for data sources that are updated frequently. For example, if you have a table that stores stock ticker data that is updated every minute you can use the **Cache Persistence Time** setting to purge the entries for that table every 59 seconds. See [Cache and Cache Persistence Timing for Specified Physical Tables](#).
Manage Publishing Options

This topic describes tasks performed by administrators managing pixel-perfect publishing.

Topics:

- About Administering Pixel-Perfect Publishing
- Configure System Maintenance Properties
- Configure the Scheduler
- Set Up Delivery Destinations
- Define Runtime Configurations
- Secure Reports
- Audit Reports and Catalog Objects
- Add Translations for the Catalog and Reports

About Administering Pixel-Perfect Publishing

Administrator configures the components required for pixel-perfect publishing.

Administrators must use the Manage Publisher option in the Classic Administration page to set up and configure several components before users start building pixel-prefect reports. You need the BI Service Administrator role to do this.

Roles Required to Perform Pixel-Perfect Publishing Tasks

This topic lists the roles required for pixel-perfect publishing.

<table>
<thead>
<tr>
<th>Application Role</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI Service Administrator</td>
<td>Set up data source connections to retrieve data for reporting from:</td>
</tr>
<tr>
<td></td>
<td>• JDBC Connection</td>
</tr>
<tr>
<td></td>
<td>• JNDI Connection</td>
</tr>
<tr>
<td></td>
<td>• OLAP Connection</td>
</tr>
<tr>
<td></td>
<td>• Web Service Connection</td>
</tr>
<tr>
<td></td>
<td>• HTTP Connection</td>
</tr>
<tr>
<td></td>
<td>• Content Server</td>
</tr>
<tr>
<td></td>
<td>You can also use the following data sources:</td>
</tr>
<tr>
<td></td>
<td>• Oracle BI Analysis</td>
</tr>
<tr>
<td></td>
<td>• Oracle BI Server subject area</td>
</tr>
</tbody>
</table>
Application Role | Tasks
--- | ---
BI Service Administrator | Configure the connections to delivery servers:
- Printer
- Fax
- Email
- HTTP
- FTP
- Content Server
- CUPS (Common UNIX Printing System) Server
- Oracle Content and Experience

BI Service Administrator | Configure the scheduler processors

BI Service Administrator | Configure system runtime properties that do the following:
- Control the processing for different output types
- Enable digital signature
- Tune for scalability and performance
- Define font mappings

BI Service Administrator | Configure server properties such as caching specifications, database failover properties, and database fetch size.

BI Content Author | Fetch and structure the data to use in reports.

BI Consumer | View reports
- Schedule report jobs
- Manage report jobs

BI Content Author | Create report definitions
- Design layouts

Navigate to the Administration Pages for Pixel-Perfect Reporting

Administrators set the options for publishing reports through the administration pages for pixel-perfect reporting.

1. Sign in to Oracle Analytics Cloud.
2. Click the Page menu on the Home page, and select Open Classic Home.
3. Click Administration.
4. Click Manage Publisher.
5. On the Publisher Administration page, select the required option.

Configure System Maintenance Properties

This topic describes how to configure Publisher server properties.

Topics:
- Set Server Caching Specifications
Set Server Caching Specifications

When Publisher processes a report, the data and the report document are stored in cache.

Report-specific caching of data sets can be set as a report property.

To configure caching at the server level:

1. In the Server Configuration page, set the following properties:
   - **Cache Expiration** — Enter the expiration period for the cache in minutes. The default is 30.
   - **Cache Size Limit** — Enter the maximum number of cached items to maintain regardless of the size of these items. The default is 1000.
   - **Maximum Cached Report Definitions** — Enter the maximum number of report definitions to maintain in cache. The default is 50.

2. To manually purge this cache, on the Manage Cache tab, click **Clear Object Cache**.

Set Retry Properties for Database Failover

If Publisher fails to connect to a data source through the defined JDBC or JNDI connection, Publisher switches to the backup database.

The following properties control the number of retries that are attempted before switching to the backup connection for the database.

- **Number of Retries**
  Default value is 6. Enter the number of times to attempt to make a connection before switching to the backup database.

- **Retry Interval (seconds)**
  Default value is 10 seconds. Enter the number of seconds to wait before retrying the connection.

Set Report Viewer Properties

The Report Viewer Configuration tab enables you to set the **Show Apply Button** report viewer property.
If **Show Apply Button** is set to True, reports with parameter options display the **Apply** button in the report viewer. If you change the parameter values, click **Apply** to render the report with the new values.

If **Show Apply Button** is set to False, the report viewer doesn’t display the **Apply** button. If you enter a new parameter value, Publisher automatically renders the report after the new value is selected or entered.

You set this property at the report level to override the system setting.

**Clear Report Objects from the Server Cache**

Use the Manage Cache page to clear the server cache.

The server cache stores report definitions, report data, and report output documents. If you need to manually purge this cache (for example, after patching) use the Manage Cache page.

To clear the report objects from the server cache:

1. From the Administration page, select **Manage Cache**.
2. On the Manage Cache page, click **Clear Object Cache**.

**Clear the Subject Area Metadata Cache**

You can clear the subject area metadata cache.

BI subject area metadata such as the dimension and measure names are cached at the server to quickly open the report in report designer. You can manually clear this cache if the BI subject area is updated through a binary repository (.RPD) file.

To clear the subject area metadata cache:

1. From the Administration page, select **Manage Cache**.
2. On the Manage Cache page, in the Clearing Subject Area Metadata Cache section, click **Clear Metadata Cache**.

**Purge Job Diagnostic Logs**

You can purge old diagnostic logs to increase the available space on your system.

The retention period of job diagnostic logs is set to 30 days, by default. If you frequently enable diagnostic logs, these diagnostic logs might consume space in the database, and you might need to periodically free the space consumed by the old diagnostic logs. You can manually purge the job diagnostic logs older than the retention period.

To purge the job diagnostic logs:

1. On the Administration page, under System Maintenance, select **Manage Job Diagnostics Log**.
2. Click **Purge log beyond retention period**.
Purge Job History

Use the Manage Job Diagnostics Log page to purge old job history.

The retention period of a job history is set to 180 days, by default. You can manually purge the history of jobs that are older than the retention period. When you purge old job history, the saved output, saved XML, job delivery info, and the job status details of the old jobs are deleted.

To purge old job history:

1. On the Administration page, under System Maintenance, select Manage Job Diagnostics Log.
2. Click Purge scheduler metadata.

Upload and Manage Configuration-Specific Files

Use Upload Center to upload and manage the configuration-specific files for font, digital signature, ICC profile, SSH private key, SSL certificate, and JDBC client certificate.

To upload and manage the configuration-specific files:

1. On the Administration page, under System Maintenance, select Upload Center.
2. Click Browse and select the file you want to upload.
3. Select the configuration file type.
4. If you want to overwrite an existing file with the new file, select Overwrite.
5. Click Upload.
6. To manage the uploaded files, use the Filter By Type field to filter the files in the table.

Enable Diagnostics

This topic describes tasks performed by administrators and BI Authors to enable the diagnostics logs.

Topics:

- Enable Diagnostics for Scheduler Jobs
- Enable Diagnostics for Online Reports

Enable Diagnostics for Scheduler Jobs

You can enable diagnostics for a scheduler job in the Schedule Report Job page, and download the diagnostic logs from Report Job History.

You must have BI Administrator or BI Data Model Developer privileges to access the Diagnostics tab in the Schedule Report Job page. Perform the following steps to enable diagnostics.

To enable and download diagnostics for a scheduler job:

1. From the New menu, select Report Job.
2. Select the report to schedule, and click the **Diagnostics** tab.

3. Select and enable the required diagnostics.
   - Select **Enable SQL Explain Plan** to generate a diagnostic log with Explain plan/SQL monitor report information.
   - Select **Enable Data Engine Diagnostic** to generate a data processor log.
   - Select **Enable Report Processor Diagnostic** to generate FO (Formatting Options) and server related log information.
   - Select **Enable Consolidated Job Diagnostic** to generate the entire log, which includes scheduler log, data processor log, FO and server log details.

4. Submit the report.

5. After the report job runs, in the Report Job History page, select your report to view the details.

6. Under Output & Delivery, click **Diagnostic Log** to download the job diagnostic log and view the details.

Use the Manage Job Diagnostics Log page to purge the old job diagnostic logs.

Enable Diagnostics for Online Reports

In the Report Viewer, you can enable diagnostics for online reports.

Administrators and BI Authors can enable diagnostics before running the online report, and then download the diagnostic logs after the report finishes. Diagnostics are disabled by default.

If you enable diagnostics for an online report with interactive output, you can:

- Download the following diagnostic logs in a .zip file:
  - SQL logs
  - Data engine logs
  - Report Processor logs
- View the following details in the diagnostic logs:
  - Exceptions
  - Memory guard limits
  - SQL query

To enable diagnostics and download the diagnostic logs for an online report:

1. If the report is running, click **Cancel** to stop the reporting process.
2. Click **Actions** in the Report Viewer.
3. Select **Enable Diagnostics** from the **Online Diagnostics** option.
4. Submit the report.
5. To download the diagnostic logs after the report runs:
   a. Click **Actions** in the Report Viewer.
   b. Select **Download Diagnostics** from the **Online Diagnostics** option.
Configure the Scheduler

This topic describes the features, architecture, diagnostics, and configuration of the scheduler.

Topics:
- Understand the Scheduler
- About the Scheduler Configuration
- Configure Processors and Processor Threads
- Scheduler Diagnostics

Understand the Scheduler

The updated architecture of the Scheduler uses the Java Messaging Service (JMS) queue technology.

This architecture enables you to add multiple publishing servers to a cluster and then dedicate each server to a particular function: report generation, document generation, or specific delivery channels.

Architecture

The architecture of the Scheduler uses JMS queues and topics to provide a highly scalable, highly performing and robust report scheduling and delivery system.

The figure below displays the scheduler architecture.
The following list describes the tasks performed by the scheduler when a job is submitted:

1. Submit Job
   • Stores job information and triggers in Quartz tables

2. Job Processor
   • When quartz trigger is fired, puts job information in Scheduler job queue

3. Bursting Engine / Batch Job Process
   • Bursting Engine Listener
     – Takes the scheduled job information from the queue
     – Extracts data from data source
     – Splits data according to bursting split by definition
     – Stores data temporarily in temp folder
     – Puts report metadata into Report Queue
   • Batch Job Process
     – Takes the scheduled job information from the queue
     – Extracts data from data source
     – Stores data temporarily in temp folder
     – Puts report metadata into Report Queue

4. FO Report Processor
   • Listens to Report Q
   • Generates report based on metadata
   • Stores report in shared TEMP directory
   • Puts report delivery information in Delivery Queue

5. Delivery Processors
   • Listen to Delivery queue
   • Call delivery API to deliver to different channels

6. Publisher System Topic
   The Publisher System Topic publishes the runtime status and health of the scheduling engine. The topic publishes the status of all instances, the thread status of messages in the JMS queues, the status of all scheduler configurations such as database configuration, JNDI configuration of JMS queues and so on.

About Clustering

Clustering enables you to add server instances on demand to handle processing and delivery load.

The figure below illustrates clustering. Note that the report repository and the scheduler database are shared across the multiple instances; also, the JMS queues for scheduling and JMS topic for publishing diagnostic information are shared across the server by registering JMS queues and topics through JNDI services.
Each managed server instance points to the same report repository. In each managed server instance all the processes such as Job Processor, Report Processor, E-mail Processor, FTP Processor, Fax Processor, and Print Processor are configured. Therefore the moment a server instance pointing to the same repository is deployed, it is added to the cluster and all the processors in this instance are ready to run.

You can select the process to enable on any server instance, thereby using the resources optimally. Moreover, if there is a demand to process heavier jobs you can add more instances for report processing. Similarly, if e-mail delivery is the most preferred delivery channel, then more instances can be added to scale up e-mail delivery.

**How Failover Works**

The failover mechanism ensures that no report fails to deliver due to server unavailability.

Achieve this by balancing each process of the Scheduler using two or more nodes in a cluster thereby ensuring that a failure of any node must be backed up by the second node without any loss of data. For example, by enabling the Job Processor in two nodes, if one node fails, then the second node can process the pending jobs.

If a node goes down, the other nodes continue to service the queue. However, if a report job is in one of the following stages of processing: data retrieval, data formatting, or report delivery, the job is marked as failed, and must be manually resubmitted.

**About Prioritizing Jobs**

You can configure the processing order of jobs.
You can prioritize jobs and ensure that the high-priority report jobs run before the non-critical jobs when multiple jobs run simultaneously. In the General tab of the Report Properties page, you can set the job priority as Critical, Normal, or Low priority. When jobs are queued, the processing of a job depends on the priority specified for the job’s report. If you don’t prioritize jobs, the critical jobs, non-critical jobs, and on-demand queries can compete for resources and the critical jobs might get delayed. In the Report Job History page, you can identify the critical jobs and view the status of each job.

About the Scheduler Configuration

When the scheduler starts automatically, certain configurations occur.

- The scheduler schema is installed to the database by the Repository Creation Utility.
- JMS is configured in your server for publishing.
- The WebLogic JNDI URL is configured.
- Default threads per processor is set to 5.

You can see the configuration in the Scheduler Configuration page under System Maintenance.

Configure Processors and Processor Threads

For each cluster instance that configure, a processor configuration table is displayed. Use the tables to enable and disable processors and specify threads for each processor.

The default number of threads for each processor is set by the Threads per JMS Processor property under JMS Configuration, as shown in the figure below. Edit the threads for a specific processor in the Cluster Instances region by updating the Number Threads setting. Note that processors that use the default setting show no entry in the table. Enter a Number Threads value only to set a thread count for a particular processor to differ from the default. The optimum number of threads per processor depends on the requirements of the system.

You can use the Scheduler Diagnostics page to help in assessing load in the system.

Scheduler Diagnostics

The Scheduler diagnostics page provides the runtime status of the scheduler. It provides status of its JMS configuration, JMS queues, Cluster instance status, Scheduler Database status, Toplink status, and Scheduler (Quartz) status.

The Diagnostics page displays how many scheduled report requests have been received by the JMS queues, how many of them have failed and how many are still running. The JMS status can be viewed at the cluster-instance level enabling you to decide whether to add more instances to scale up by one or more of these JMS processors.

For example, if there’re too many requests queued up for the e-mail processor in one instance, you can consider adding another instance and enabling it to handle e-mail processing. Similarly, if there’re very large reports being processed and showing in the
Report Process queue in running status, then you can add another instance to scale up the Report Process capability.

Also, the Scheduler Diagnostics page reflects the status of each component to show if any component is down. You can see the connection string or JNDI name to the database, which cluster instance associates to which managed server instance, Toplink connection pool configuration, and so on.

If an instance shows a failed status, then you can recover the instance and with the failover mechanism of the JMS set up in the cluster, no jobs submitted are lost. When the server instance is brought back, it is immediately available in the cluster for service. The instance removal and addition reflects dynamically on the diagnostic page.

When an instance is added to the cluster, the Scheduler Diagnostics page immediately recognizes the new instance and displays the status of the new instances and all the threads running on that instance. This provides a powerful monitoring capability to the administrator to trace and resolve issues in any instance or any component of the scheduler.

The Scheduler Diagnostics page provides information on the following components:

- JMS
- Cluster
- Database
- Scheduler Engine

The JMS section provides information on the following:

- JMS Cluster Config: This section provides configuration information for JMS setup:
  - Provider type (Weblogic / ActiveMQ)
  - WebLogic version
  - WebLogic JNDI Factory
  - JNDI URL for JMS
  - Queue names
  - Temporary directory
- JMS Runtime: This provides runtime status of all JMS queues and topics, as shown in the table below.

<table>
<thead>
<tr>
<th>Queue Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queue - BP, Burst.Job.Q</td>
<td>0 pending</td>
</tr>
<tr>
<td>Queue - BP, Burst.Report.Q</td>
<td>0 pending</td>
</tr>
<tr>
<td>Queue - BP, Delivery.Email.Q</td>
<td>0 pending</td>
</tr>
<tr>
<td>Queue - BP, Delivery.File.Q</td>
<td>0 pending</td>
</tr>
<tr>
<td>Queue - BP, Delivery.FTP.Q</td>
<td>0 pending</td>
</tr>
<tr>
<td>Queue - BP, Delivery.Print.Q</td>
<td>0 pending</td>
</tr>
<tr>
<td>Queue - BP, Delivery.WebDAV.Q</td>
<td>0 pending</td>
</tr>
<tr>
<td>Queue - BP, Delivery.Fax.Q</td>
<td>0 pending</td>
</tr>
</tbody>
</table>

The Cluster section provides details on the cluster instance, as shown in the figure below. Use this information to understand the load on each processor.
• JMS instance config
• JMS Wrapper
• JMS Client - System — Provides status of the BIP System topic. The scheduler diagnostic page is a subscriber to this topic.
• JMS Client_producer — Not used.
• JMS Client_schedule — Provides status of the job processor and report processor, each processor showing number of active threads, number of messages received, number of messages failed, and number of messages running.
• JMS Client_delivery — Provides status of different delivery processors as listeners, each delivery processor showing number of active threads, number of messages received, number of messages failed, and number of messages running.

The Database section provides information on these components, as shown in the figure below.

• Database Config — Connection type, JNDI Name, or connection string
• Toplink Config — Connection pooling, logging level
• Database Schema
The Quartz section provides information on these components, as shown in the figure below.

- Quartz Configuration
- Quartz Initialization

```
<table>
<thead>
<tr>
<th>Quartz Config</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>org.quartz.dataSource.mysqld</td>
<td>MySQL connection details</td>
</tr>
<tr>
<td>org.quartz.jobStore.jobStore</td>
<td>job store details</td>
</tr>
<tr>
<td>org.quartz.jobStore.tablePrefix</td>
<td>table prefix for job store</td>
</tr>
<tr>
<td>org.quartz.jobStore.dataSource</td>
<td>database connection details</td>
</tr>
<tr>
<td>org.quartz.jobStore.dataSource.mysqld</td>
<td>database connection details for job store</td>
</tr>
</tbody>
</table>
```

Set Up Delivery Destinations

This topic describes the setup required to deliver Publisher reports. It also describes how to set up the HTTP notification server.

Topics:
- Configure Delivery Options
- Understand Printer and Fax Server Configuration
- Add a Printer
- Add a Fax Server
- Add an Email Server
- Add an HTTP Server
- Add an FTP or SFTP Server
- Add a Content Server
- Add a Common UNIX Printing System (CUPS) Server
- Add an Oracle Content and Experience Server

Configure Delivery Options

You can define the SSL certificate file and set the general properties for e-mail deliveries and notifications.

To configure delivery options:
1. From the Administration page, select **Delivery Configuration**.
2. If you want to use a self-signed certificate, select a file from **SSL Certificate File**.
3. Enter the From address to appear on e-mail report deliveries. The default value is bipublisher-report@oracle.com.
4. Enter the From address to appear on notifications deliveries. The default value is bipublisher-notification@oracle.com.
5. Enter the subject line to display for e-mail notification recipients when the report status is Success, Warning, Failed, or Skipped.
6. Select **Use System Proxy Settings** if the Delivery Manager must look up the proxy server settings from the Java runtime environment.
   - Printer, Fax, WebDAV, HTTP and CUPS servers use proxy settings for HTTP protocol when SSL is not used. When SSL is used, the HTTPS proxy setting is used.
   - FTP and SFTP use proxy settings for FTP.
   - Contents servers and email servers don't support connection over a proxy, regardless of this setting.

You can override the proxy settings per delivery server, using proxy configuration fields on the individual server setup page. If a proxy server and ports are configured for a delivery server, the Delivery Manager uses the proxy server and port configured for the server instead of the one defined in the Java Runtime environment. In Cloud installations, **Use System Proxy Settings** is always selected, and cannot be turned off or overridden by individual server settings.

### Understand Printer and Fax Server Configuration

Understand your printer type before you set up the printer or fax server.

Regardless of the operating system, the printer destination can be any IPP server. The IPP server can be the printer itself, but if the printer doesn't natively support IPP, you can set up a print server that does support IPP (such as CUPS), and then connect to the print server to the printer.

To send a fax, you must set up Common Unix Printing Service (CUPS) and the fax4CUPS extension. For information on setting up CUPS or Windows IPP print servers and how to connect network printers to them, refer to the CUPS or Windows IPP software vendor documentation.

PDF is a popular output format for business reports. However, some reports require printing directly from the report server. For example, paychecks and invoices are usually printed as scheduled batch jobs. Some printers with PostScript Level 3 compliant Raster Image Processing can natively support PDF documents, but there're still many printers in business use that only support PostScript Level 2 that can't print PDF documents directly.

To print PDF documents directly, if your printer or print server doesn't support printing PDF:
- Select a filter - PDF to PostScript or PDF to PCL.
- Configure a custom, or third-party filter.

A filter enables you to call a conversion utility to convert the PDF to a file format supported by your specific printer type. You can use the PDF to PCL conversion only...
for font selection requirements for check printing. For generic printing requirements, use the PDF to PostScript level 2 filter.

Selection of PDF to PCL filter automatically populates the Filter Command field. You can embed PCL commands into RTF templates to invoke the PCL commands at a specific position on the PCL page; for example, to use a font installed on the printer for routing and account numbers on a check.

You can also call a custom filter using operating system commands.

To specify a custom filter, pass the native OS command string with the two placeholders for the input and output filename, {infile} and {outfile}.

This is useful especially if you're trying to call IPP printers directly or IPP printers on Microsoft Internet Information Service (IIS). Unlike CUPS, those print servers don't translate the print file to a format the printer can understand. With the filter functionality, you can call any of the native OS commands to transform the document to the format that the target printer can understand.

For example, to transform a PDF document to a PostScript format, enter the following PDF to PS command in the Filter Command field:

```plaintext
dftops {infile} {outfile}
```

To call an HP LaserJet printer setup on a Microsoft IIS from Linux, you can set Ghostscript as a filter to transform the PDF document into the format that the HP LaserJet can understand. To do this, enter the following Ghostscript command in the Filter Command field:

```plaintext
gs -q -dNOPAUSE -dBATCH -sDEVICE=laserjet -sOutputFile={outfile} {infile}
```

For fax servers, you can use the filter to transform the file to Tag Image File Format (TIFF).

Add a Printer

You can set up a printer to print reports.

To set up a printer:

1. From the Administration page, under Delivery, select Printer, and then click Add Server.

2. Enter the server name and URI of the printer.

3. Optional: If your printer or print server doesn't support printing PDF, enter a filter to call a conversion utility to convert the PDF to a file format supported by your specific printer type.

4. Optional: Enter the user name, password, authentication type (None, Basic, Digest), and encryption Type (None, SSL).

5. Optional: Enter the host, port, user name, password, and authentication type (None, Basic, Digest) of the proxy server.

6. In the Access Control section, deselect Public.
7. From the **Available Roles** list, select one or more roles you want to provide access to the delivery channel, and click **Move** to add them to the **Allowed Roles** list.

8. Click **Apply**.

**Add a Fax Server**

You must set up Common Unix Printing Service (CUPS) and the fax4CUPS extension, if you want to send fax.

To set up a fax server:

1. From the Administration page, under **Delivery**, select **Fax**, and then click **Add Server**.

2. Enter the server name and the URI (Uniform Resource Identifier) of the fax server.

3. Optional: If your fax server doesn't support printing PDF, enter a filter to call a conversion utility to convert the PDF to a file format supported by your specific fax server.

4. Optional: Enter the user name, password, authentication type (None, Basic, Digest), and encryption Type (None, SSL) of the fax server.

5. Optional: Enter the host, port, user name, password, and authentication type (None, Basic, Digest) of the proxy server.

6. In the Access Control section, deselect **Public**.

7. From the **Available Roles** list, select one or more roles you want to provide access to the delivery channel, and click **Move** to add them to the **Allowed Roles** list.

8. Click **Apply**.

**Add an Email Server**

You can add an email server to deliver reports by email.

To add an email server:

1. From the Administration page, under **Delivery**, select **Email**, and then click **Add Server**.

2. Enter the **Server Name** and **Host** of the email server.

3. Optional: Select a **Secure Connection** method to use for connections with the email server.

   Use TLS when the server supports the protocol; SSL is accepted in the response.

4. Optional: Enter the port number, user name, and password.

5. In the Access Control section, deselect **Public**.

6. From the **Available Roles** list, select one or more roles you want to provide access to the delivery channel, and click **Move** to add them to the **Allowed Roles** list.

7. Click **Test Connection**.

8. Click **Apply**.
Deliver Reports Using Email Delivery Service on Oracle Cloud Infrastructure

You can use the Email Delivery service on Oracle Cloud Infrastructure to deliver reports.

If you don't have access to Oracle Cloud Infrastructure Console, ask your Oracle Cloud Infrastructure administrator to provide you access.

To deliver reports using the Email Delivery service on Oracle Cloud Infrastructure:

1. In Oracle Cloud Infrastructure Console, perform these steps.
   a. Generate SMTP credentials.
      i. Open the navigation menu, under Governance and Administration go to Identity, and then click Users.
      ii. Locate the user in the list that has permissions to manage email, and then click the user's name to view the details.
      iii. Click SMTP Credentials, click Generate SMTP Credentials, and then enter a Description of the SMTP Credentials in the dialog box.
      iv. Click Generate SMTP Credentials, copy the user name and password for your records, and then click Close.
   b. Obtain SMTP connection information for your Email Delivery service.
      i. Open the navigation menu. Under Solutions and Platform go to Email Delivery.
      ii. Click Email Configuration. Get the following details of the email server:
         • Server name and host
         • Port number
         • SMTP credentials (user name and password)
         • Secure connection method
   c. Verify that the “From” addresses for report delivery are registered as approved senders.
      Only approved senders can send mail through Oracle Cloud Infrastructure.
      i. Open the navigation menu. Under Solutions and Platform, go to Email Delivery.
      ii. Click Email Approved Senders.

2. In Oracle Analytics Cloud, add a connection to the email server.
   a. From the Administration page, under Delivery, select Email, and then click Add Server.
   b. Enter the name of the email server (Email Delivery service hostname).
   c. Enter the port number and SMTP credentials (user name and password).
   d. Select the secure connection method.
   e. In the Access Control section, deselect Public.
f. From the **Available Roles** list, select one or more roles you want to provide access to the delivery channel, and click **Move** to add them to the **Allowed Roles** list.

g. Click **Test Connection**.

h. Click **Apply**.

3. Set up delivery notification.
   a. From the Administration page, under **Delivery**, select **Delivery Configuration**.
   b. Enter values for **Email From Address** and **Delivery Notification Email From Address**.
   c. Optional: Enter values for **Success Notification Subject**, **Warning Notification Subject**, **Failure Notification Subject**, and **Skipped Notification Subject**.
      The completed jobs use the appropriate notification subject depending on the status of the job.
   d. Deselect **Use System Proxy Settings**.

4. Configure the bursting jobs to deliver reports using the email server.
   Update bursting queries to specify **Email** as the delivery channel in **DEL_CHANNEL** and provide the "From" address in **PARAMETER3**.

5. Test report delivery.
   a. Schedule a job to email a report using the email server.
   b. In the Job History Details page, check the status of the job.

**Add an HTTP Server**

You can register an application URL or postprocess HTTP URL as an HTTP server to send a notification request to after the report has completed.

The HTTP notification sent by Publisher posts a form data for Job ID, report URL and Job Status to the HTTP Server URL page.

To add an HTTP server:

1. From the Administration page, under **Delivery**, select **HTTP**, and then click **Add Server**.
2. Enter the server name and the URL of the server.
3. Optional: Enter the host, port, user name, password, authentication type (None, Basic, Digest), and encryption type (None, SSL) of the server.
4. Optional: If the notification is to be sent through a proxy server, enter the user name, password, and the authentication type (None, Basic, Digest).
5. In the Access Control section, deselect **Public**.
6. From the **Available Roles** list, select one or more roles you want to provide access to the delivery channel, and click **Move** to add them to the **Allowed Roles** list.
7. Click **Apply**.
Add an FTP or SFTP Server

You can add an FTP server or SFTP server as a delivery channel from the Administration page.

If the destination file name supplied to the scheduler contains non-ascii characters, UTF-8 encoding is used to specify the file name to the destination FTP server. Your FTP server must support UTF-8 encoding or the job delivery will fail with "Delivery Failed" error message.

To add an FTP or SFTP server:

1. From the Administration page, under Delivery, select FTP, and then click Add Server.
2. Enter the server name, host name, and port number for the FTP or SFTP server. The default port for FTP is 21. The default port for Secure FTP (SFTP) is 22.
3. To enable Secure FTP (SFTP), select Use Secure FTP.
4. If the FTP server is behind a firewall, select Use Passive Mode.
5. In the Host Key Fingerprint field, enter the host key. The value must match the fingerprint calculated from server's host key at runtime. If it doesn’t match, an exception error is thrown. When you connect the first time, the Delivery Manager API allows you to retrieve the server key fingerprint.
6. Optional: In the Filter Command field, specify a custom filter to apply a file conversion such as encryption.
   To specify a custom filter, pass the native Operating System command string with the two placeholders for the input and output file name, {infile} and {outfile}. For example, to set up encryption of the file using a Filter Command, enter the following:
   
gpg -e -r myKey -o {outfile} {infile}
   
   where
   
   myKey is the ID to gpg key (such as real name, email address, or fingerprint).
   
The Filter command field doesn’t support quotes. Therefore you cannot use certain valid gpg formats that include spaces, for example: "myname <myemail@example.com>"). You must specify the ID in a single string with no spaces.
7. Select Create files with Part extension when copy is in process to create a file on the FTP server with a .part extension while the file is transferring.
   When the file transfer is complete, the file is renamed without the .part extension. If the file transfer doesn't complete, the file with the .part extension remains on the server.
8. Optional: Enter the security information.
   a. If your server is password protected, enter the User name and Password.
   b. Select the Authentication Type: Private Key or Password
   c. Depending on the authentication type selection, select the private key file or specify the private password.
If you selected Private Key as the authentication type, make sure you upload the SSH Private Key file in the Upload Center.

9. Optional: Enter the host, port, user name, password, and authentication type (None, Basic, Digest) of the proxy server.

10. Optional: To deliver PGP encrypted documents to the FTP server:
   a. From the PGP Key list, select the PGP keys you uploaded in Security Center.
      This step updates the filter command in the Filter Command field.
   b. To sign the encrypted document, select Sign Output.
      This step adds a \( -s \) parameter to the existing filter command in the Filter Command field.
   c. If you want to deliver PGP encrypted document in ASCII armored format, select ASCII Armored Output.
      This step adds a \( -a \) parameter to the existing filter command in the Filter Command field.

11. In the Access Control section, deselect Public.

12. From the Available Roles list, select one or more roles you want to provide access to the delivery channel, and click Move to add them to the Allowed Roles list.

13. Click Test Connection.

14. Click Apply.

SSH Options for SFTP

Secure File Transfer Protocol (SFTP) is based on the Secure Shell technology (SSH). Publisher supports the following SSH options for SFTP delivery.

<table>
<thead>
<tr>
<th>SSH Option</th>
<th>Supported Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cipher Suites</td>
<td>• 3des-cbc&lt;br&gt;• blowfish-cbc&lt;br&gt;• aes128-cbc&lt;br&gt;• aes128-ctr&lt;br&gt;• aes192-ctr&lt;br&gt;• aes256-ctr&lt;br&gt;You can use aes192-ctr and aes256-ctr cipher suites only when Publisher is running on a JVM on which the Java Cryptography Extension (JCE) unlimited strength jurisdiction policy files are installed.</td>
</tr>
<tr>
<td>Key Exchange Method</td>
<td>• diffie-hellman-group1-sha1&lt;br&gt;• diffie-hellman-group14-sha1&lt;br&gt;• diffie-hellman-group-exchange-sha1&lt;br&gt;• diffie-hellman-group-exchange-sha256&lt;br&gt;You can use diffie-hellman-group-exchange-sha256 key exchange methods only when Publisher is running on a JVM on which the Java Cryptography Extension (JCE) unlimited strength jurisdiction policy files are installed.</td>
</tr>
</tbody>
</table>
Add a Content Server

You can deliver documents to Oracle WebCenter Content.

When you use a content server as a delivery destination:

- At runtime, the report consumer can tag the report with Security Group and Account metadata (if applicable) to ensure that the appropriate access rights are applied to the document when delivered.
- For documents that require specific custom metadata fields (such as invoice number, customer name, order date), the report author can map the custom metadata fields defined in Content Profile Rule Sets to data fields in the data model.

Publisher communicates with Oracle WebCenter Content Server using the Remote Intradoc Client (RIDC). The connection protocols therefore follow the standards required by the RIDC. The protocols supported are:

- Intradoc: The Intradoc protocol communicates to the Content Server over the Intradoc socket port (typically 4444). This protocol requires a trusted connection between the client and Content Server and will not perform any password validation. Clients that use this protocol are expected to perform any required authentication themselves before making RIDC calls. The Intradoc communication can also be configured to run over SSL.
- HTTP and HTTPS: The HTTP protocol connection requires valid user name and password authentication credentials for each request. You supply the credentials to use for requests in the Publisher Administration page.
- JAX-WS: The JAX-WS protocol is supported only in Oracle WebCenter Content 11g with a properly configured Content Server instance and the RIDC client installed. JAX-WS is not supported outside this environment.

To set up a content server as a delivery destination:

1. From the Administration page, under **Delivery**, select **Content Server**, and then click **Add Server**.
2. Enter the **Server Name**, for example: contentserver01.
3. Enter the connection **URI** for your content server. The URI can take any of the following supported protocols:
   - HTTP/HTTPS — Specifies the URL to the Content Server CGI path.
     For example:
     - http://localhost:16200/cs/idcplg
     - https://localhost:16200/cs/idcplg
   - Intradoc — The Intradoc protocol communicates to the content server over the Intradoc socket port (typically 4444). The IDC protocol also supports communication over SSL. For example:

---

<table>
<thead>
<tr>
<th>SSH Option</th>
<th>Supported Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Key Algorithm</td>
<td>ssh-dss, ssh-rsa</td>
</tr>
</tbody>
</table>
• JAX-WS — Uses the JAX-WS protocol to connect to the content server. For example:
  - http://wlsserver:16200/idcnativews

4. Optional: Enter the user name and password of the content server.

5. Optional: To enable the inclusion of custom metadata with your report documents delivered to the content server, select Enable Custom Metadata.

6. Optional: To deliver PGP encrypted documents to the content server:
   a. From the PGP Key list, select the PGP keys you uploaded in Security Center.
      This step updates the filter command in the Filter Command field.
   b. To sign the encrypted document, select Sign Output.
      This step adds a \( -s \) parameter to the existing filter command in the Filter Command field.
   c. If you want to deliver PGP encrypted document in ASCII armored format, select ASCII Armored Output.
      This step adds a \( -a \) parameter to the existing filter command in the Filter Command field.

7. In the Access Control section, deselect Public.

8. From the Available Roles list, select one or more roles you want to provide access to the delivery channel, and click Move to add them to the Allowed Roles list.

9. Click Test Connection.

10. Click Apply.

Add a Common UNIX Printing System (CUPS) Server

You add CUPS servers from the Administration page.

You can configure Common Unix Printing Service (CUPS) for sending fax and to enable printing using a printer that doesn’t natively support IPP.

To add a CUPS server:

1. From the Administration page, select CUPS to display the list of servers that have been added.

2. Select Add Server.

3. Enter the Server Name and Host and Port for the CUPS server.

Add an Oracle Content and Experience Server

You can deliver reports to an Oracle Content and Experience server to enable easy access and share reports on the cloud.

To add an Oracle Content and Experience server:
1. From the Administration page, under Delivery, select Content and Experience, and then click Add Server.

2. In the Server Name field, type the name of the server through which you want to deliver the reports to the cloud-based content hub.

3. In the URI field, type the URI of the Oracle Content and Experience server. For example, https://host.oraclecloud.com.

4. In the Username and Password fields, provide the credentials for accessing the Oracle Content and Experience server.

5. In the Access Control section, deselect Public.

6. From the Available Roles list, select one or more roles you want to provide access to the delivery channel, and click Move to add them to the Allowed Roles list.

7. Click Test Connection.

8. Click Apply.

Define Runtime Configurations

This topic describes processing properties for PDF document security, FO processing, PDF accessibility, and specific properties for each output type.

Topics:

- Set Runtime Properties
- PDF Output Properties
- PDF Digital Signature Properties
- PDF Accessibility Properties
- PDF/A Output Properties
- PDF/X Output Properties
- DOCX Output Properties
- RTF Output Properties
- PPTX Output Properties
- HTML Output Properties
- FO Processing Properties
- RTF Template Properties
- XPT Template Properties
- PDF Template Properties
- Excel Template Properties
- CSV Output Properties
- Excel Output Properties
- EText Output Properties
- All Outputs Properties
- Memory Guard Properties
• **Data Model Properties**
• **Delivery Properties**
• **Define Font Mappings**
• **Define Currency Formats**

Set Runtime Properties

The Runtime Configuration page enables you to set runtime properties at the server level.

These same properties can also be set at the report level, from the report editor's Properties dialog. If different values are set for a property at each level, then report level takes precedence.

PDF Output Properties

Generate the type of PDF files you want by setting available output properties.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compress PDF output</td>
<td>Specify &quot;true&quot; or &quot;false&quot; to control compression of the output PDF file.</td>
<td>true</td>
<td>pdf-compression</td>
</tr>
<tr>
<td>Hide PDF viewer's menu bars</td>
<td>Specify &quot;true&quot; to hide the viewer application's menu bar when the document is active. The menu bar option is only effective when using the Export button, which displays the output in a standalone Acrobat Reader application outside of the browser.</td>
<td>false</td>
<td>pdf-hide-menubar</td>
</tr>
<tr>
<td>Hide PDF viewer's toolbars</td>
<td>Specify &quot;true&quot; to hide the viewer application's toolbar when the document is active.</td>
<td>false</td>
<td>pdf-hide-toolbar</td>
</tr>
<tr>
<td>Replace smart quotes</td>
<td>Specify &quot;false&quot; if you don't want curly quotes replaced with straight quotes in the PDF output.</td>
<td>true</td>
<td>pdf-replace-smartquotes</td>
</tr>
<tr>
<td>Disable opacity and gradient shading for DVT chart</td>
<td>Specify &quot;true&quot; if you don't want opacity and gradient shading for the PDF output. This reduces the size of the PostScript file.</td>
<td>false</td>
<td>pdf-dvt-no-opacity-no-gradient-shading</td>
</tr>
</tbody>
</table>
| Enable PDF Security                    | Specify "true" if you want to encrypt the PDF output. You can then also specify the following properties:  
  • Open document password  
  • Modify permissions password  
  • Encryption Level | false   | pdf-security                     |
<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open document password</td>
<td>This password is required for opening the document. It enables users to open the document only. This property is enabled only when &quot;Enable PDF Security&quot; is set to &quot;true&quot;. Note that Adobe's password restrictions apply. The password must contain only Latin-1 characters and must be no more than 32 bytes long.</td>
<td>N/A</td>
<td>pdf-open-password</td>
</tr>
<tr>
<td>Modify permissions password</td>
<td>This password enables users to override the security setting. This property is effective only when &quot;Enable PDF Security&quot; is set to &quot;true&quot;. Note that Adobe's password restrictions apply. The password must contain only Latin-1 characters and must be no more than 32 bytes long. If you set a password in the pdf-open-password property without setting a password in the pdf-permissions-password property, or if you set the same password in both the pdf-open-password and pdf-permissions-password properties, the user gets full access to the document and its features, and permission settings such as &quot;Disable printing&quot; are bypassed or ignored.</td>
<td>N/A</td>
<td>pdf-permissions-password</td>
</tr>
<tr>
<td>Property Name</td>
<td>Description</td>
<td>Default</td>
<td>Configuration Name</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Encryption level</td>
<td>Specify the encryption level for the output PDF file. The possible values are:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 0: Low (40-bit RC4, Acrobat 3.0 or later)</td>
<td>2 - high</td>
<td>pdf-encryption-level</td>
</tr>
<tr>
<td></td>
<td>• 1: Medium (128-bit RC4, Acrobat 5.0 or later)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 2: High (128-bit AES, Acrobat 7.0 or later)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>This property is effective only when &quot;Enable PDF Security&quot; is set to &quot;true&quot;.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>When Encryption level is set to 0, you can also set the following properties:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Disable printing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Disable document modification</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Disable context copying, extraction, and accessibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Disable adding or changing comments and form fields</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>When Encryption level is set to 1 or higher, the following properties are</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>available:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Enable text access for screen readers</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Enable copying of text, images, and other content</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Allowed change level</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Allowed printing level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disable document modification</td>
<td>Permission available when &quot;Encryption level&quot; is set to 0. When set to &quot;true&quot;,</td>
<td>false</td>
<td>pdf-no-changing-the-document</td>
</tr>
<tr>
<td></td>
<td>the PDF file cannot be edited.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disable printing</td>
<td>Permission available when &quot;Encryption level&quot; is set to 0. When set to &quot;true&quot;,</td>
<td>false</td>
<td>pdf-no-printing</td>
</tr>
<tr>
<td></td>
<td>printing is disabled for the PDF file.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disable adding or changing comments and form</td>
<td>Permission available when &quot;Encryption level&quot; is set to 0. When set to &quot;true&quot;,</td>
<td>false</td>
<td>pdf-no-accff</td>
</tr>
<tr>
<td>fields</td>
<td>the ability to add or change comments and form fields is disabled.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disable context copying, extraction, and</td>
<td>Permission available when &quot;Encryption level&quot; is set to 0. When set to &quot;true&quot;,</td>
<td>false</td>
<td>pdf-no-cceda</td>
</tr>
<tr>
<td>accessibility</td>
<td>the context copying, extraction, and accessibility features are disabled.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property Name</td>
<td>Description</td>
<td>Default</td>
<td>Configuration Name</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Enable text access for screen readers</td>
<td>Permission available when &quot;Encryption level&quot; is set to 1 or higher. When set to &quot;true&quot;, text access for screen reader devices is enabled.</td>
<td>true</td>
<td>pdf-enable-accessibility</td>
</tr>
<tr>
<td>Enable copying of text, images, and other content</td>
<td>Permission available when &quot;Encryption level&quot; is set to 1 or higher. When set to &quot;true&quot;, copying of text, images, and other content is enabled.</td>
<td>false</td>
<td>pdf-enable-copying</td>
</tr>
</tbody>
</table>
| Allowed change level               | Permission available when "Encryption level" is set to 1 or higher. Valid Values are:  
  - 0: none  
  - 1: Allows inserting, deleting, and rotating pages  
  - 2: Allows filling in form fields and signing  
  - 3: Allows commenting, filling in form fields, and signing  
  - 4: Allows all changes except extracting pages | 0       | pdf-changes-allowed           |
| Allowed printing level             | Permission available when "Encryption level" is set to 1 or higher. Valid values are:  
  - 0: None  
  - 1: Low resolution (150 dpi)  
  - 2: High resolution | 0       | pdf-printing-allowed          |
### Property Name

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
</table>
| Use only one shared resources object for all pages | The default mode of Publisher creates one shared resources object for all pages in a PDF file. This mode has the advantage of creating an overall smaller file size. However, the disadvantages are the following:  
  - Viewing may take longer for a large file with many SVG objects  
  - If you choose to break up the file by using Adobe Acrobat to extract or delete portions, then the edited PDF files are larger because the single shared resource object (that contains all of the SVG objects for the entire file) is included with each extracted portion. Setting this property to "false" creates a resource object for each page. The file size is larger, but the PDF viewing is faster and the PDF can be broken up into smaller files more easily. | true    | pdf-use-one-resources     |

### PDF Navigation Panel Initial View

Controls the navigation panel view presented when a user first opens a PDF report. The following options are supported:

- Panels Collapsed - displays the PDF document with the navigation panel collapsed.
- Bookmarks Open (default) - displays the bookmark links for easy navigation.
- Pages Open - displays a clickable thumbnail view of each page of the PDF.

**Bookmarks Open**

**pdf-pagemode**

### PDF Digital Signature Properties

You set properties at the report level to enable digital signature for a report and to define the placement of the signature in the output PDF document.

Note that to implement digital signature for a report based on a PDF layout template or an RTF layout template, you must set the property **Enable Digital Signature** to "True" for the report.

You also must set the appropriate properties to place the digital signature in the desired location on your output report. Your choices for placement of the digital signature depend on the template type. The choices are as follows:
• (PDF only) Place the digital signature in a specific field by setting the **Existing signature field name** property.

• (RTF and PDF) Place the digital signature in a general location of the page (top left, top center, or top right) by setting the **Signature field location** property.

• (RTF and PDF) Place the digital signature in a specific location designated by x and y coordinates by setting the **Signature field x coordinate** and **Signature field y coordinate** properties.

If you choose this option, you can also set **Signature field width** and **Signature field height** to define the size of the field in your document.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable Digital Signature</td>
<td>Set this to &quot;true&quot; to enable digital signature for the report.</td>
<td>false</td>
<td>signature-enable</td>
</tr>
<tr>
<td>Existing signature field name</td>
<td>This property applies to PDF layout templates only. If the report is based on a PDF template, then you can enter a field from the PDF template in which to place the digital signature.</td>
<td>N/A</td>
<td>signature-field-name</td>
</tr>
<tr>
<td>Signature field location</td>
<td>This property can apply to RTF or PDF layout templates. This property provides a list that contains the following values: Top Left, Top Center, Top Right. Choose one of these general locations and Publisher inserts the digital signature to the output document, sized and positioned appropriately. If you choose to set this property, do not enter X and Y coordinates or width and height properties.</td>
<td>N/A</td>
<td>signature-field-location</td>
</tr>
<tr>
<td>Signature field X coordinate</td>
<td>This property can apply to RTF or PDF layout templates. Using the left edge of the document as the zero point of the X axis, enter the position in points that you want the digital signature to be placed from the left. For example, if you want the digital signature to be placed horizontally in the middle of an 8.5 inch by 11 inch document (that is, 612 points in width and 792 points in height), enter 306.</td>
<td>0</td>
<td>signature-field-pos-x</td>
</tr>
<tr>
<td>Signature field Y coordinate</td>
<td>This property can apply to RTF or PDF layout templates. Using the bottom edge of the document as the zero point of the Y axis, enter the position in points that you want the digital signature to be placed from the bottom. For example, if you want the digital signature to be placed vertically in the middle of an 8.5 inch by 11 inch document (that is, 612 points in width and 792 points in height), enter 396.</td>
<td>0</td>
<td>signature-field-pos-y</td>
</tr>
</tbody>
</table>
### Property Name

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature field width</td>
<td>Enter in points (72 points equal one inch) the desired width of the inserted digital signature field. This applies only if you're also setting the <strong>Signature field x coordinate</strong> and <strong>Signature field Y coordinate</strong> properties.</td>
<td>0</td>
<td>signature-field-width</td>
</tr>
<tr>
<td>Signature field height</td>
<td>Enter in points (72 points equal one inch) the desired height of the inserted digital signature field. This applies only if you're also setting the <strong>Signature field x coordinate</strong> and <strong>Signature field Y coordinate</strong> properties.</td>
<td>0</td>
<td>signature-field-height</td>
</tr>
</tbody>
</table>

### PDF Accessibility Properties

Set the properties described in the table below to configure PDF accessibility.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make PDF output accessible</td>
<td>Set to “true” to make the PDF outputs accessible. Accessible PDF output contains the document title and PDF tags.</td>
<td>False</td>
</tr>
<tr>
<td>Use PDF/UA format for accessible PDF output</td>
<td>Set to “true” to use the PDF/UA format for the accessible PDF outputs.</td>
<td>False</td>
</tr>
</tbody>
</table>

### PDF/A Output Properties

Set the properties described in the table below to configure PDF/A output.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDF/A version</td>
<td>Set the PDF/A version.</td>
<td>PDF/A-1B</td>
<td>pdfa-version</td>
</tr>
</tbody>
</table>
### PDF/A ICC Profile Data

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDF/A ICC Profile Data</td>
<td>The name of the ICC profile data file, for example: CoatedFOGRA27.icc. The ICC (International Color Consortium) profile is a binary file describing the color characteristics of the environment where this PDF/A file is intended to be displayed. The ICC profile that you select must have a major version below 4. To use a specific profile data file other than the default settings in the JVM, obtain the file and place it under <code>&lt;bi publisher repository&gt;/Admin/Configuration</code>. When you set this property, you must also set a value for PDF/A ICC Profile Info (pdfa-icc-profile-info).</td>
<td>Default profile data provided by JVM</td>
<td>pdfa-icc-profile-data</td>
</tr>
</tbody>
</table>

#### Properties

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDF/A ICC Profile Info</td>
<td>ICC profile information (required when pdfa-icc-profile-data is specified)</td>
<td>sRGB IEC61966-2.1</td>
<td>pdfa-icc-profile-info</td>
</tr>
<tr>
<td>PDF/A file identifier</td>
<td>One or more valid file identifiers set in the xmpMM:Identifier field of the metadata dictionary. To specify more than one identifier, separate values with a comma (,).</td>
<td>Automatically generated file identifier</td>
<td>pdfa-file-identifier</td>
</tr>
<tr>
<td>PDF/A document ID</td>
<td>Valid document ID. The value is set in the xmpMM:DocumentID field of the metadata dictionary.</td>
<td>None</td>
<td>pdfa-document-id</td>
</tr>
<tr>
<td>PDF/A version ID</td>
<td>Valid version ID. The value is set in the xmpMM:VersionID field of the metadata dictionary.</td>
<td>None</td>
<td>pdfa-version-id</td>
</tr>
<tr>
<td>PDF/A rendition class</td>
<td>Valid rendition class. The value is set in the xmpMM:RenditionClass field of the metadata dictionary.</td>
<td>None</td>
<td>pdfa-rendition-class</td>
</tr>
</tbody>
</table>

### PDF/X Output Properties

Configure PDF/X output by setting the properties described below. The values that you set for these properties will depend on the printing device.

Note the following restrictions on other PDF properties:

- **pdf-version** — Value above 1.4 is not allowed for PDF/X-1a output.
- **pdf-security** — Must be set to False.
- **pdf-encryption-level** — Must be set to 0.
- **pdf-font-embedding** — Must be set to true.
<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PDF/X ICC Profile Data</strong></td>
<td>(Required) The name of the ICC profile data file, for example: CoatedFOGRA27.icc.</td>
<td>None</td>
<td><code>pdfx-dest-output-profile-data</code></td>
</tr>
<tr>
<td></td>
<td>The ICC (International Color Consortium) profile is a binary file describing the color characteristics of the intended output device. For production environments, the color profile may be provided by your print vendor or by the printing company that prints the generated PDF/X file. The file must be placed under <code>&lt;bi publisher repository&gt;/Admin/Configuration</code>. Profile data is also available from Adobe support or colormanagement.org.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PDF/X output condition identifier</strong></td>
<td>(Required) The name of one of the standard printing conditions registered with ICC (International Color Consortium). The value that you enter for this property is a valid &quot;Reference name,&quot; for example: FOGRA43. Choose the appropriate value for the intended printing environment. This name is often used to guide automatic processing of the file by the consumer of the PDF/X document, or to inform the default settings in interactive applications.</td>
<td>None</td>
<td><code>pdfx-output-condition-identifier</code></td>
</tr>
<tr>
<td><strong>PDF/X output condition</strong></td>
<td>A string describing the intended printing condition in a form that will be meaningful to a human operator at the site receiving the exchanged file. The value is set in OutputCondition field of OutputIntents dictionary.</td>
<td>None</td>
<td><code>pdfx-output-condition</code></td>
</tr>
<tr>
<td><strong>PDF/X registry name</strong></td>
<td>A registry name. Set this property when the <code>pdfx-output-condition-identifier</code> is set to a characterization name registered in a registry other than the ICC registry.</td>
<td><code>http://www.color.org</code></td>
<td><code>pdfx-registry-name</code></td>
</tr>
<tr>
<td><strong>PDF/X version</strong></td>
<td>The PDF/X version set in GTS_PDFXVersion and GTS_PDFXConformance fields of Info dictionary. PDF/X-1a:2003 is the only value currently supported.</td>
<td><code>PDF/X-1a:2003</code></td>
<td><code>pdfx-version</code></td>
</tr>
</tbody>
</table>
DOCX Output Properties

The table below describes the properties that control DOCX output files.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable change tracking</td>
<td>Set to &quot;true&quot; to enable change tracking in the output document.</td>
<td>false</td>
<td>docx-track-changes</td>
</tr>
<tr>
<td>Protect document for tracked changes</td>
<td>Set to &quot;true&quot; to protect the document for tracked changes.</td>
<td>false</td>
<td>docx-protect-document-for-tracked-changes</td>
</tr>
<tr>
<td>Default font</td>
<td>Use this property to define the font style and size in the output when no other font has been defined. This is particularly useful to control the sizing of empty table cells in generated reports. Enter the font name and size in the following format &lt;FontName&gt;:&lt;size&gt; for example: Arial:12. Note that the font you choose must be available to the processing engine at runtime.</td>
<td>Arial:12</td>
<td>docx-output-default-font</td>
</tr>
<tr>
<td>Open password</td>
<td>Use this property to specify the password that report users must provide to open any DOCX report.</td>
<td>NA</td>
<td>docx-open-password</td>
</tr>
</tbody>
</table>

RTF Output Properties

Configure RTF output files by setting the properties described in the table below.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable change tracking</td>
<td>Set to &quot;true&quot; to enable change tracking in the output RTF document.</td>
<td>false</td>
<td>rtf-track-changes</td>
</tr>
<tr>
<td>Protect document for tracked changes</td>
<td>Set to &quot;true&quot; to protect the document for tracked changes.</td>
<td>false</td>
<td>rtf-protect-document-for-tracked-changes</td>
</tr>
</tbody>
</table>
## PPTX Output Properties

The table below describes the properties that control PPTX output files.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open password</td>
<td>Use this property to specify the password that report users must provide to open any PPTX report.</td>
<td>NA</td>
<td>pptx-open-password</td>
</tr>
</tbody>
</table>
HTML Output Properties

The table below describes the properties that control HTML output files.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show header</td>
<td>Set to &quot;false&quot; to suppress the template header in HTML output.</td>
<td>true</td>
<td>html-show-header</td>
</tr>
<tr>
<td>Show footer</td>
<td>Set to &quot;false&quot; to suppress the template footer in HTML output.</td>
<td>true</td>
<td>html-show-footer</td>
</tr>
<tr>
<td>Replace smart quotes</td>
<td>Set to &quot;false&quot; if you don't want curly quotes replaced with straight quotes in the HTML output.</td>
<td>true</td>
<td>html-replace-smartquotes</td>
</tr>
<tr>
<td>Character set</td>
<td>Specify the output HTML character set.</td>
<td>UTF-8</td>
<td>html-output-charset</td>
</tr>
<tr>
<td>Make HTML output accessible</td>
<td>Set to &quot;true&quot; to make the HTML output accessible.</td>
<td>false</td>
<td>make-accessible</td>
</tr>
<tr>
<td>Use percentage width for table columns</td>
<td>Set to &quot;true&quot; to display table columns according to a percentage value of the total width of the table rather than as a value in points. This property is especially useful if the browser display tables with extremely wide columns. Setting this property to true improves the readability of the tables.</td>
<td>true</td>
<td>html-output-width-in-percentage</td>
</tr>
<tr>
<td>Property Name</td>
<td>Description</td>
<td>Default</td>
<td>Configuration Name</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------</td>
<td>---------</td>
<td>--------------------</td>
</tr>
</tbody>
</table>
| View Paginated | When you set this property to true, HTML output will render in the report viewer with pagination features. These features include:  
  • Generated table of contents  
  • Navigation links at the top and bottom of the page  
  • Ability to skip to a specific page within the HTML document  
  • Search for strings within the HTML document using the browser's search capability  
  • Zoom in and out on the HTML document using the browser's zoom capability  
Note that these features are supported for online viewing through the report viewer only. | false | |
| Reduce Padding in Table-cell | When you set this property to true, cells in HTML tables are displayed without padding, which maximizes the page space available for text. | false | html-reduce-padding |
| Embed images and charts in HTML for offline viewing | When you set this property to true, charts and images are embedded in the HTML output, which is suitable for viewing offline. | true | html-use-data-uri |
| Use SVG for charts | When you set this property to true, charts display as a SVG (Scalable Vector Graphic) to provide a higher resolution in the HTML output. When you set this property to false, charts display as a raster image. | true | html-use-svg |
| Keep original table width | When you set this property to true, if a column in a table is deleted, the original width of the table is maintained. | true | html-keep-original-table-width |
| Enable horizontal scrollbar automatically for html table | When you set this property to true, a horizontal scroll bar is added to a table that doesn't fit within the current size of the browser window. | false | html-enable-horiz-table-scroll |
FO Processing Properties

The table below describes the properties that control FO processing.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use BI Publisher’s XSLT processor</td>
<td>Controls the use of parser. If set to false, then XSLT isn’t parsed.</td>
<td>true</td>
<td>xslt-xdoparser</td>
</tr>
<tr>
<td>Enable scalable feature of XSLT</td>
<td>Controls the scalable feature of the XDO parser.</td>
<td>false</td>
<td>scalable</td>
</tr>
<tr>
<td>processor</td>
<td>The property “Use BI Publisher’s XSLT processor” must be set to “true” for this property to be effective.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enable XSLT runtime optimization</td>
<td>When set to “true”, the overall performance of the FO processor is increased and the size of the temporary FO files generated in the temp directory is significantly decreased. Note that for small reports (for example 1-2 pages) the increase in performance isn’t as marked. To further enhance performance when you set this property to true, set the Extract attribute sets property to “false”.</td>
<td>true</td>
<td>xslt-runtime-optimization</td>
</tr>
<tr>
<td>Enable XPath Optimization</td>
<td>When set to “true”, the XML data file is analyzed for element frequency. The information is then used to optimize XPath in XSL.</td>
<td>false</td>
<td>xslt-xpath-optimization</td>
</tr>
<tr>
<td>Property Name</td>
<td>Description</td>
<td>Default</td>
<td>Configuration Name</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Pages cached during processing</td>
<td>This property is enabled only when you specify a Temporary Directory (under General properties). During table of contents generation, the FO Processor caches the pages until the number of pages exceeds the value specified for this property. It then writes the pages to a file in the Temporary Directory.</td>
<td>50</td>
<td>system-cache-page-size</td>
</tr>
<tr>
<td>Bidi language digit substitution type</td>
<td>Valid values are &quot;None&quot; and &quot;National&quot;. When set to &quot;None&quot;, Eastern European numbers are used. When set to &quot;National&quot;, Hindi format (Arabic-Indic digits) is used. This setting is effective only when the locale is Arabic, otherwise it's ignored.</td>
<td>National</td>
<td>digit-substitution</td>
</tr>
<tr>
<td>Disable variable header support</td>
<td>When set to true, prevents variable header support. Variable header support automatically extends the size of the header to accommodate the contents.</td>
<td>false</td>
<td>fo-prevent-variable-header</td>
</tr>
<tr>
<td>Enable multithreading</td>
<td>If you have a multiprocessor machine or a machine with a dual-core single processor, you might achieve faster document generation by setting this option to True.</td>
<td>false</td>
<td>fo-multi-threads</td>
</tr>
<tr>
<td>Disable external references</td>
<td>When set to true, disallows importing of secondary files such as subtemplates or other XML documents during XSL processing and XML parsing. This increases the security of the system. Set this to &quot;false&quot; if the report or template calls external files.</td>
<td>true</td>
<td>xdk-secure-io-mode</td>
</tr>
<tr>
<td>Property Name</td>
<td>Description</td>
<td>Default</td>
<td>Configuration Name</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>FO Parsing Buffer Size</td>
<td>Specifies the size of the buffer for the FO Processor. When the buffer is full, the elements from the buffer are rendered in the report. Reports with large tables or pivot tables that require complex formatting and calculations may require a larger buffer to properly render those objects in the report. Increase the size of the buffer at the report level for these reports. Note that increasing this value affects the memory consumption of the system.</td>
<td>1000000</td>
<td>fo-chunk-size</td>
</tr>
<tr>
<td>FO extended linebreaking</td>
<td>When set to true, punctuation, hyphenation, and international text are handled properly when line breaking is necessary.</td>
<td>true</td>
<td>fo-extended-linebreaking</td>
</tr>
<tr>
<td>Enable XSLT runtime optimization for sub-template</td>
<td>Provides an option to perform XSL import in FOProcessor before passing only one XSL to XDK for further processing. This allows xslt-optimization to be applied to the entire main XSL template which already includes all its subtemplates. The default is true. If you call the FOProcessor directly, the default is false.</td>
<td>true</td>
<td>xslt-do-import</td>
</tr>
<tr>
<td>Report Timezone</td>
<td>Valid values: User or JVM. When set to User, Publisher uses the User-level Report Time Zone setting for reports. The User Report Time Zone is set in the user’s Account Settings. When set to JVM, Publisher uses the server JVM timezone setting for all users’ reports. All reports therefore display the same time regardless of individual user settings. This setting can be overridden at the report level.</td>
<td>User</td>
<td>fo-report-timezone</td>
</tr>
</tbody>
</table>
## RTF Template Properties

Configure RTF templates by setting the properties described in the table below.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDF Bidi Unicode Version</td>
<td>Specifies the Unicode version (3.0 or 4.1) used to display the BIDI strings in the PDF output.</td>
<td>4.1</td>
<td>pdf-bidi-unicode-version</td>
</tr>
</tbody>
</table>
| Extract attribute sets | The RTF processor automatically extracts attribute sets within the generated XSL-FO. The extracted sets are placed in an extra FO block, which can be referenced. This improves processing performance and reduces file size. Valid values are:  
  - Enable - extract attribute sets for all templates and subtemplates  
  - Auto - extract attribute sets for templates, but not subtemplates  
  - Disable - do not extract attribute sets | Auto    | rtf-extract-attribute-sets  |
| Enable XPath rewriting  | When converting an RTF template to XSL-FO, the RTF processor automatically rewrites the XML tag names to represent the full XPath notations. Set this property to "false" to disable this feature. | true    | rtf-rewrite-path            |
### XPT Template Properties

Configure XPT templates by setting the properties described in the table below.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Characters used for checkbox</strong></td>
<td>The default PDF output font doesn't include a glyph to represent a checkbox. If the template contains a checkbox, use this property to define a Unicode font for the representation of checkboxes in the PDF output. You must define the Unicode font number for the &quot;checked&quot; state and the Unicode font number for the &quot;unchecked&quot; state using the following syntax: <code>fontname;&lt;unicode font number for true value's glyph &gt;;&lt;unicode font number for false value's glyph&gt;</code></td>
<td>Albany WT J:9746,9747/A Note that the font that you specify must be made available at runtime.</td>
<td></td>
</tr>
</tbody>
</table>
| **XPT Scalable Mode**                | When you set this property to true, the scheduled reports that use the XPT template and include a large amount of data run without memory issues. The first 100,000 rows of data in the report are stored in memory and the remaining rows are stored in the file system.  
When you set this property to false, the scheduled reports that use XPT template are processed in-memory. Set this property to false for reports that contain less data.                                          | False   | rtf-checkbox-glyph                  |
| **Enable Asynchronous Mode for Interactive Output** | When you set this property to true, interactive reports that use the XPT template make asynchronous calls to Oracle WebLogic Server.  
When you set this property to false, interactive reports that use the XPT template make synchronous calls to Oracle WebLogic Server. Oracle WebLogic Server limits the number of synchronous calls. Any calls that are stuck expire in 600 seconds. | True    |                                     |
PDF Template Properties

Generate the types of PDF files you want by setting available PDF template properties.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
<th>Configuration Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove PDF fields from output</td>
<td>Specify &quot;true&quot; to remove PDF fields from the output. When PDF fields are removed, data entered in the fields cannot be extracted.</td>
<td>false</td>
<td>remove-pdf-fields</td>
</tr>
<tr>
<td>Set all fields as read only in output</td>
<td>By default, all fields in the output PDF of a PDF template is read only. If you want to set all fields to be updatable, set this property to &quot;false&quot;.</td>
<td>true</td>
<td>all-field-readonly</td>
</tr>
<tr>
<td>Maintain each field's read only setting</td>
<td>Set this property to &quot;true&quot; if you want to maintain the &quot;Read Only&quot; setting of each field as defined in the PDF template. This property overrides the settings of &quot;Set all fields as read only in output.&quot;</td>
<td>false</td>
<td>all-fields-readonly-asis</td>
</tr>
</tbody>
</table>

Excel Template Properties

Configure Excel templates by setting the properties described in the table below.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable Scalable Mode</td>
<td>When set to true, large reports that use Excel template run without out of memory issues. Data overflows automatically into multiple sheets if a group of data in a sheet exceeds 65000 rows. This overcomes the Microsoft Excel limitation of 65000 rows per sheet. When set to false, large reports that use Excel template can cause out of memory issues.</td>
<td>false</td>
</tr>
</tbody>
</table>

CSV Output Properties

The table below describes the properties that control comma-delimited value output.
### Excel Output Properties

You can set specific properties to control Excel output.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSV delimiter</td>
<td>Specifies the character used to delimit the data in comma-separated value output. Other options are: Semicolon (,), Tab (\t) and Pipe (|).</td>
<td>Comma (,)</td>
</tr>
<tr>
<td>Remove leading and trailing white space</td>
<td>Specify &quot;True&quot; to remove leading and trailing white space between data elements and the delimiter.</td>
<td>False</td>
</tr>
<tr>
<td>Add UTF-8 BOM Signature</td>
<td>Specify &quot;False&quot; to remove the UTF-8 BOM signature from the output.</td>
<td>True</td>
</tr>
<tr>
<td>Show grid lines</td>
<td>Set to true to show the Excel table grid lines in the report output.</td>
<td>False</td>
</tr>
<tr>
<td>Page break as a new sheet</td>
<td>When set to &quot;True&quot; a page break specified in the report template generates a new sheet in the Excel workbook.</td>
<td>True</td>
</tr>
<tr>
<td>Minimum column width</td>
<td>When the column width is less than the specified minimum and it contains no data, the column is merged with the preceding column. The value must be set in points. The valid range for this property is 0.5 to 20 points.</td>
<td>3 (in points, 0.04 inch)</td>
</tr>
<tr>
<td>Minimum row height</td>
<td>When the row height is less than the specified minimum and it contains no data, the row is removed. The value must be set in points. The valid range for this property is 0.001 to 5 points.</td>
<td>1 (in points, 0.01 inch)</td>
</tr>
<tr>
<td>Keep values in same column</td>
<td>Set this property to True to minimize column merging. Column width is set based on column contents using the values supplied in the Table Auto Layout property. Output may not appear as neatly laid out as when using the original layout algorithm.</td>
<td>False</td>
</tr>
</tbody>
</table>
### Table Auto Layout

Specify a conversion ratio in points and a maximum length in points, for example 6.5, 150. See example.

For this property to take effect, the property "Keep values in same column" must be set to True.

This property expands the table column width to fit the contents. The column width is expanded based on the character count and conversion ratio up to the maximum specification.

Example: Assume a report with two columns of Excel data -- Column 1 contains a text string that's 18 characters and Column 2 is 30 characters long. When the value of this property is set to 6.5, 150, the following calculations are performed:

- Column 1 is 18 characters:
  - Apply the calculation: 18 * 6.5 pts = 117 pts
  - The column in the Excel output will be 117 pts wide.

- Column 2 is 30 characters:
  - Apply the calculation: 30 * 6.5 pts = 195 pts
  - Because 195 pts is greater than the specified maximum of 150, Column 2 will be 150 pts wide in the Excel output.

### Maximum allowable nested table row count

Specify the maximum allowable row count for a nested table. Allowed values are 15000 to 999,999.

During report processing, nested inner table rows cannot be flushed to the XLSX writer, therefore they stay in-memory, increasing memory consumption. Set this limit to avoid out-of-memory exceptions. When this limit is reached for the size of the inner table, generation is terminated. The incomplete XLSX output file is returned.

### Open password

Use this property to specify the password that report users must provide to open any XLSX output file.

**Configuration name:** `xlsx-open-password`

### EText Output Properties

The table below describes the properties that control EText output files.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add UTF-8 BOM Signature</td>
<td>When set to true, the Etext output is in UTF-8 Unicode with BOM format.</td>
<td>false</td>
</tr>
<tr>
<td>Enable bigdecimal</td>
<td>When set to true, you enable high-precision numeric calculation of the Etext output.</td>
<td>false</td>
</tr>
</tbody>
</table>
All Outputs Properties

The properties in the table below apply to all outputs.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use 11.1.1.5 compatibility mode</td>
<td>Reserved. Do not update unless instructed by Oracle.</td>
<td>false</td>
</tr>
</tbody>
</table>

Memory Guard Properties

The Runtime Configuration page lists the default values of the memory guard properties. The values of the memory guard properties depend on the compute shape used for your instance.

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum report data size for online reports</td>
<td>Limits the data size for online reports.</td>
<td>300MB</td>
</tr>
<tr>
<td>Maximum report data size for offline (scheduled) reports</td>
<td>Limits the data size for scheduled reports.</td>
<td>500MB</td>
</tr>
<tr>
<td>Maximum report data size for bursting reports</td>
<td>Limits the data size for bursting reports.</td>
<td>500MB</td>
</tr>
<tr>
<td>Free memory threshold</td>
<td>Ensures a minimum available free memory space.</td>
<td>500MB</td>
</tr>
<tr>
<td>Maximum report data size under the free memory threshold</td>
<td>Limits the data size of a report when the Free memory threshold property is set to a positive value.</td>
<td>50MB</td>
</tr>
<tr>
<td>Minimum time span between garbage collection runs</td>
<td>Ensures a minimum time gap in seconds between any two subsequent garbage collection runs.</td>
<td>300 (seconds)</td>
</tr>
<tr>
<td>Maximum wait time for free memory to come back above the threshold value</td>
<td>Limits the time in seconds for a run-report request to wait for the free JVM memory to exceed the threshold value. This property value takes effect only if you specify a positive value for the Free memory threshold property. If free memory is still below the threshold value after the specified wait time, the run-report request is rejected.</td>
<td>30 (seconds)</td>
</tr>
<tr>
<td>Timeout for online report</td>
<td>Specifies the timeout value in seconds for online reports.</td>
<td>535 (seconds)</td>
</tr>
<tr>
<td>Maximum rows for CSV output</td>
<td>Limits the rows for reports in CSV format.</td>
<td>1000000</td>
</tr>
</tbody>
</table>

Data Model Properties

The Runtime Configuration page lists the values of the data model properties. The values of the data model properties depend on the compute shape used for your instance.
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum data size limit for data generation</td>
<td>Limits the size of XML data that can be generated by executing a data model.</td>
<td>500MB</td>
</tr>
<tr>
<td>Maximum sample data size limit</td>
<td>Limits the size of a sample data file that can be uploaded from the data model editor.</td>
<td>1MB</td>
</tr>
<tr>
<td>Enable Data Model scalable mode</td>
<td>Prevents out of memory conditions. When set to true, the data engine takes advantage of the disk space while processing data.</td>
<td>True</td>
</tr>
<tr>
<td>Enable Auto DB fetch size mode</td>
<td>Avoids out of memory conditions, but can significantly increase the processing time. This setting is recommended only for frequently processing complex queries of hundreds of columns. When set to true, the database fetch size is set at runtime according to the total number of columns and the total number of query columns in the data set. Ignores the DB fetch size setting. This property overrides the data model-level database fetch size properties.</td>
<td>True</td>
</tr>
<tr>
<td>DB fetch size</td>
<td>Limits the database fetch size for a data model. This property value takes effect only when Enable Auto DB fetch size mode is set to False.</td>
<td>20 (rows)</td>
</tr>
<tr>
<td>SQL Query Timeout</td>
<td>Specifies the timeout for SQL query-based data models. Irrespective of the settings at the instance level or data model level, the maximum SQL query timeout is 10 minutes for all the reports running online. This avoids stuck threads and server outages.</td>
<td>600 seconds</td>
</tr>
<tr>
<td>Enable Data Model diagnostic</td>
<td>Writes the data set details, memory, and SQL processing time information to the log file when set to true. Oracle recommends setting this property to true only for debugging purposes. If you enable this property, the processing time is increased.</td>
<td>False</td>
</tr>
<tr>
<td>Enable SQL Session Trace</td>
<td>When set to true, for every SQL query that's processed, Publisher writes a SQL session trace log to the database. A database administrator can examine the log.</td>
<td>False</td>
</tr>
<tr>
<td>Enable SQL Pruning</td>
<td>Applies only to the Oracle Database queries that use Standard SQL. If your query returns many columns but only a subset are used by your report template, SQL pruning returns only those columns required by the template. If you enable this property, the processing time and the memory usage reduces. SQL pruning is not applicable for PDF, Excel, and E-text template types.</td>
<td>False</td>
</tr>
</tbody>
</table>
### Define Runtime Configurations

**Property**  | **Description**                                                                                                                                                                                                 | **Default**
---|---|---
Enable Data Chunking | When set to true, you can enable XML data chunking for individual data models, reports, and report jobs. Select this property and specify an appropriate value for the Data Chunk Size property to process large and long-running reports. | False

Data Chunk Size | Specifies the data size for each data chunk. Applies only when the Enable Data Chunking property is set to true. | 300MB

DV Data Row Limit | Limits the number of rows that can be retrieved from a data set. | 2000000

Trim Leading and Trailing Spaces From Parameter Value | Trims the leading and trailing spaces from the parameter values of data models. | True

### Delivery Properties

The properties in the table below apply to report delivery.

**Property Name**  | **Description**                                                                                                                                                                                                 | **Default**
---|---|---
Enable FTP/SFTP delivery retry | If a delivery through an FTP or SFTP delivery channel fails, Publisher makes another attempt to deliver, 10 seconds after the first attempt fails. This setting affects all FTP and SFTP delivery requests, and can't be configured for individual servers. | True

### Define Font Mappings

Map base fonts in RTF or PDF templates to target fonts to be used in the published document.

You can specify font mapping at the site or report level. Font mapping is performed only for PDF output and PowerPoint output.

There're two types of font mappings:

- **RTF Templates** — for mapping fonts from RTF templates and XSL-FO templates to PDF and PowerPoint output fonts
- **PDF Templates** — for mapping fonts from PDF templates to different PDF output fonts.

### Make Fonts Available for Publishing

A set of Type1 fonts and a set of TrueType fonts are available for publishing. You can select any of the fonts in these sets as a target font with no additional setup required.

The predefined fonts are located in `<oracle_home>/oracle_common/internal/fonts`. To map to another font, place the font in this directory to make it available for
publishing at runtime. If the environment is clustered, then you must place the font on every server. See Predefined Fonts.

Set Font Mapping at the Site Level or Report Level

A font mapping can be defined at the site level or the report level.

- To set a mapping at the site level, select the Font Mappings link from the Administration page.
- To set a mapping at the report level, view the Properties for the report, then select the Font Mappings tab. These settings apply to the selected report only.

The report-level settings take precedence over the site-level settings.

Create a Font Map

From the Administration page, under Runtime Configuration, select Font Mappings.

To create a Font Mapping:

1. Under RTF Templates or PDF Templates, select Add Font Mapping.
2. Enter the following on the Add Font Mapping page:
   - **Base Font** — enter the font family to map to a new font. Example: Arial
   - Select the **Style**: Normal or Italic (Not applicable to PDF Template font mappings)
   - Select the **Weight**: Normal or Bold (Not applicable to PDF Template font mappings)
   - Select the **Target Font Type**: Type 1 or TrueType
   - Enter the **Target Font**
     If you selected TrueType, you can enter a specific numbered font in the collection. Enter the TrueType Collection (TTC) Number of the desired font.

Predefined Fonts

The following Type1 fonts are built-in to Adobe Acrobat and by default the mappings for these fonts are available for publishing.

You can select any of these fonts as a target font with no additional setup required.

The Type1 fonts are listed in the table below.

<table>
<thead>
<tr>
<th>Number</th>
<th>Font Family</th>
<th>Style</th>
<th>Weight</th>
<th>Font Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>serif</td>
<td>normal</td>
<td>normal</td>
<td>Time-Roman</td>
</tr>
<tr>
<td>1</td>
<td>serif</td>
<td>normal</td>
<td>bold</td>
<td>Times-Bold</td>
</tr>
<tr>
<td>1</td>
<td>serif</td>
<td>italic</td>
<td>normal</td>
<td>Times-Italic</td>
</tr>
<tr>
<td>1</td>
<td>serif</td>
<td>italic</td>
<td>bold</td>
<td>Times-BoldItalic</td>
</tr>
<tr>
<td>2</td>
<td>sans-serif</td>
<td>normal</td>
<td>normal</td>
<td>Helvetica</td>
</tr>
<tr>
<td>2</td>
<td>sans-serif</td>
<td>normal</td>
<td>bold</td>
<td>Helvetica-Bold</td>
</tr>
<tr>
<td>2</td>
<td>sans-serif</td>
<td>italic</td>
<td>normal</td>
<td>Helvetica-Oblique</td>
</tr>
<tr>
<td>Number</td>
<td>Font Family</td>
<td>Style</td>
<td>Weight</td>
<td>Actual Font</td>
</tr>
<tr>
<td>--------</td>
<td>----------------</td>
<td>-----------</td>
<td>--------</td>
<td>-----------------</td>
</tr>
<tr>
<td>2</td>
<td>sans-serif</td>
<td>italic</td>
<td>bold</td>
<td>Helvetica-BoldOblique</td>
</tr>
<tr>
<td>3</td>
<td>monospace</td>
<td>normal</td>
<td>normal</td>
<td>Courier</td>
</tr>
<tr>
<td>3</td>
<td>monospace</td>
<td>normal</td>
<td>bold</td>
<td>Courier-Bold</td>
</tr>
<tr>
<td>3</td>
<td>monospace</td>
<td>italic</td>
<td>normal</td>
<td>Courier-Oblique</td>
</tr>
<tr>
<td>3</td>
<td>monospace</td>
<td>italic</td>
<td>bold</td>
<td>Courier-BoldOblique</td>
</tr>
<tr>
<td>4</td>
<td>Courier</td>
<td>normal</td>
<td>normal</td>
<td>Courier</td>
</tr>
<tr>
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<td>Courier-Bold</td>
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<td>italic</td>
<td>normal</td>
<td>Courier-Oblique</td>
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<tr>
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</tr>
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</tr>
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The TrueType fonts are listed in the table below. All TrueType fonts are subset and embedded into PDF.

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<th>Style</th>
<th>Weight</th>
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<td>TrueType (Japanese flavor)</td>
</tr>
<tr>
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<td>TrueType (Korean flavor)</td>
</tr>
<tr>
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<td>normal</td>
<td>normal</td>
<td>ALBANWTS.ttf</td>
<td>TrueType (Simplified Chinese flavor)</td>
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<tr>
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<td>TrueType (Latin1 only, Fixed width)</td>
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<tr>
<td>6</td>
<td>Andale Duospace WT</td>
<td>bold</td>
<td>bold</td>
<td>ADUOB.ttf</td>
<td>TrueType (Latin1 only, Fixed width)</td>
</tr>
</tbody>
</table>
### Define Currency Formats

Currency formats defined in the Administration Runtime Configuration page are applied at the system level. Currency formats can also be applied at the report level. The report-level settings take precedence over the system-level settings here.

### Understand Currency Formats

The Currency Formats tab enables you to map a number format mask to a specific currency so that your reports can display multiple currencies with their own corresponding formatting. Currency formatting is only supported for RTF and XSL-FO templates.

To apply currency formats in the RTF template, use the format-currency function.

To add a currency format:

1. Click the **Add** icon.
2. Enter the ISO currency code, for example: USD, JPY, EUR, GBP, INR.
3. Enter the format mask to apply for this currency.
The Format Mask must be in the Oracle number format. The Oracle number format uses the components "9", "0", "D", and "G" to compose the format, for example: 9G999D00

where
9 represents a displayed number only if present in data
G represents the group separator
D represents the decimal separator
0 represents an explicitly displayed number regardless of incoming data

The figure below shows sample currency formats.

Secure Reports

This topic describes how to secure pixel-perfect reporting.

Topics:
- Use Digital Signature in a PDF Document
- Use PGP Keys for Encrypted Report Delivery

Use Digital Signature in a PDF Document

You can apply digital signatures to PDF output documents.

Digital signatures enable you to verify the authenticity of the documents you send and receive. You can upload your digital signature file to a secure location, and at runtime sign the PDF output with the digital signature. The digital signature verifies the signer's identity and ensures that the document hasn't been altered after it was signed.

For additional information, refer to the Verisign and Adobe websites.

Prerequisites and Limitations

When you use digital signatures with documents in Publisher, you must be aware of a few limitations.

Keep the following limitations in mind:
You can register only a single digital signature with Publisher.

Only the reports scheduled in Publisher can include the digital signature.

The digital signature is enabled at the report level; therefore, multiple templates assigned to the same report share the digital signature properties.

**Obtain Digital Certificates**

You can obtain a digital certificate either by purchasing one or by using the self-sign method.

To obtain a digital certificate:

- Perform one of the following:
  - Purchase a certificate from an authority, verify and trust the authenticity of the certificate, and then use Microsoft Internet Explorer 7 or later to create a PFX file based on the certificate you purchased.
  - Create a self-signed certificate using a software program such as Adobe Acrobat, Adobe Reader, OpenSSL, or OSDT as part of a PFX file, and then use the PFX file to sign PDF documents by registering it with Publisher. Bear in mind that anyone can create a self-signed certificate, so use care when verifying and trusting such a certificate.

**Create PFX Files**

If you obtained a digital certificate from a certificate authority, you can create a PFX file using that certificate and Microsoft Internet Explorer 7 or later.

You don't need to create a PFX file if a self-signed certificate PFX file already exists.

To create a PFX file with Microsoft Windows Explorer 7 or later:

1. Ensure that your digital certificate is saved on your computer.
2. Open Microsoft Internet Explorer.
3. From the Tools menu, click **Internet Options** and then click the Content tab.
4. Click Certificates.
5. In the Certificates dialog, click the tab that contains your digital certificate and then click the certificate.
6. Click **Export**.
7. Follow the steps in the Certificate Export Wizard. For assistance, refer to the documentation provided with Microsoft Internet Explorer.
8. When prompted, select **Use DER encoded binary X.509** as your export file format.
9. When prompted, save your certificate as part of a PFX file to an accessible location on your computer.

After you create your PFX file, you can use it to sign PDF documents.
Apply a Digital Signature

You can set up and sign your output PDF documents with a digital signature.

To apply a digital signature:

1. Register the digital signature in the Publisher Administration page and specify the roles that are authorized to sign documents.
2. Specify the display field location.
3. Select the **Enable Digital Signature** property for the report.
4. Log in as a user with an authorized role and submit the report through the Publisher scheduler, choosing the PDF output. When the report completes, it is signed with your digital signature in the specified location of the document.

Register Your Digital Signature and Assign Authorized Roles

Publisher supports the identification of a single digital signature.

You must upload the digital signature file in Upload Center.

To register a digital signature:

1. On the Administration tab, under **Security Center**, click **Digital Signature**.
2. Select the digital signature file you uploaded in Upload Center and enter the password for the digital signature.
3. Enable the Roles that must have the authority to sign documents with this digital signature. Use the shuttle buttons to move Available Roles to the Allowed Roles list.
4. Click **Apply**.

Specify the Signature Display Field or Location

You must specify the location for the digital signature to appear in the completed document. The methods available depend on whether the template type is PDF or RTF.

If the template is PDF, use one of the following options:

- Specify a template field in a PDF template for the digital signature.
- Specify the location for the digital signature in the report properties.

If the template is RTF, specify the location for the digital signature in the report properties.

Specify a Template Field in a PDF Template for the Digital Signature

Include a field in the PDF template for digital signatures.

Report authors can add a new field or configure an existing field in the PDF template for the digital signature. See Add or Designate a Field for a Digital Signature.
Specify the Location for the Digital Signature in the Report Properties

When you specify a location in the document to place the digital signature, you can either specify a general location (Top Left, Top Center, or Top Right) or you can specify x and y coordinates in the document.

You can also specify the height and width of the field for the digital signature by using runtime properties. You don't need to alter the template to include a digital signature.

To specify the location for the digital signature:

1. In the catalog, navigate to the report.
2. Click the Edit link for the report to open the report for editing.
3. Click Properties and then click the Formatting tab.
4. Scroll to the PDF Digital Signature group of properties.
5. Set Enable Digital Signature to True.
6. Specify the location in the document where you want the digital signature to appear by setting the appropriate properties as follows (note that the signature is inserted on the first page of the document only):
   - **Existing signature field name** — Doesn't apply to this method.
   - **Signature field location** — Provides a list containing the following values:
     - Top Left, Top Center, Top Right
     Select one of these general locations and Publisher places the digital signature in the output document sized and positioned appropriately.
     If you set this property, then don't enter X and Y coordinates or width and height properties.
   - **Signature field X coordinate** — Using the left edge of the document as the zero point of the X axis, enter the position in points to place the digital signature from the left.
     For example, to place the digital signature horizontally in the middle of an 8.5 inch by 11 inch document (that is, 612 points in width and 792 points in height), enter 306.
   - **Signature field Y coordinate** — Using the bottom edge of the document as the zero point of the Y axis, enter the position in points to place digital signature from the bottom.
     For example, to place the digital signature vertically in the middle of an 8.5 inch by 11 inch document (that is, 612 points in width and 792 points in height), enter 396.
   - **Signature field width** — Enter in points the desired width of the inserted digital signature field. This applies only if you’re setting the X and Y coordinates.
   - **Signature field height** — Enter in points the desired height of the inserted digital signature field. This applies only if you’re setting the X and Y coordinates.
Run and Sign Reports with a Digital Signature

If you've been assigned a role that's been granted the digital signature privilege, you can sign a generated report with a signature, if the report has been configured to include signatures. You can sign only scheduled reports with signatures.

To sign reports with a digital signature:

1. Log in as a user with a role granted digital signature privileges.
2. In the catalog, navigate to the report that has been enabled for digital signature, and click Schedule.
3. Complete the fields on the Schedule Report Job page, select PDF output, and then submit the job.
   
   The completed PDF displays the digital signature.

Use PGP Keys for Encrypted Report Delivery

You can use PGP encryption to secure file delivery through the FTP server and the Content server.

You can configure the FTP server and Content server delivery channels to use the PGP public keys to deliver PGP encrypted files. You can configure an FTP server to use the PGP encrypted files in ASCII armor format.

Use Security Center to upload and download the PGP keys.

Manage PGP Keys

You can upload, download, and delete the PGP keys in the Administration page.

To manage PGP Keys:

1. From the Administration page, under Security Center, select PGP Keys.
2. To upload PGP keys to keystore, click Choose File, select the PGP key file, and then click Upload.
3. To download the PGP public keys, click the download icon corresponding to the public key file.
4. To delete PGP keys, in the PGP Keys table, click the delete icon corresponding to the PGP keys.

Audit Reports and Catalog Objects

An administrator can enable auditing, configure the connection to the data source for auditing, and create auditing reports.

Topics:

- About Audit of Reports and Catalog Objects
- Enable Audit of Reports and Catalog Objects
- Specify the Data Source for Audit
About Audit of Reports and Catalog Objects

You can audit the reports and catalog objects.

When you enable auditing, you can find out the time of access and who accessed the catalog objects such as reports, data models, sub-templates, style templates, and folders.

Auditing helps you track:

- Report start, process, end, and download
- Report job pause, resume, and cancellation
- Resource creation, modification, copy, and deletion
- Resource access

Enable Audit of Reports and Catalog Objects

Administrators can enable or disable auditing of publishing activities.

To enable auditing:

1. Navigate to the Server Configuration page.
2. Select Enable Monitor and Audit.
3. Set Audit Level to Medium.

Specify the Data Source for Audit

Configure the data source for auditing if you want to create the audit reports.

To configure the data source for auditing:

1. In the Administration page, click JNDI Connection.
2. Click Add Data Source.
3. In the Data Source Name field, enter AuditViewDB.
4. In the JNDI Name field, enter jdbc/AuditViewDataSource.
5. Click Test Connection to confirm the connection to the AuditViewDB data source.
6. Define security for this data source. Move the required roles from the Available Roles list to the Allowed Roles list. Only users assigned the roles on the Allowed Roles list can create or view reports from this data source.
7. Click Apply.

View Audit Data

You can download and use the sample reports for viewing the audited information.

Make sure you select Enable Monitor and Audit in the Server Configuration page to log audit data, and then configure the JNDI connection to the AuditViewDB data source to view the audit data.
The sample reports use the JNDI connection to fetch data from the data source for auditing. The report layout and data model are pre-designed in the sample reports. You can customize the report layout, but don't change the data model in the sample reports. The sample reports are configured to run as a scheduled job because the size of auditing data can be large. If you want to view an audit report online, select the Run Report Online property and make sure you don't select the Auto Run property of the report.

To view audit data:

1. Download the sample audit reports from the Publisher home page in Oracle Technology Network.
2. Upload the sample audit reports to a shared folder in the catalog.
3. Schedule the sample audit reports you want to view.
   a. Navigate to the sample audit report in the catalog.
   b. Click Schedule.
   c. In the General tab, specify the dates for the Date From and Date To parameters.
   d. In the Output tab, make sure the output format is PDF.
      You can add delivery destinations if required.
4. After the scheduled job completes, view the report in the Report Job History page.

Add Translations for the Catalog and Reports

This topic describes how to export and import translation files both for the catalog and for individual report layouts.

Topics:

- Introduction
- Export and Import a Catalog Translation File
- Template Translation
- Use a Localized Template

Introduction

Publisher supports two types of translation: Catalog Translation and Template (or layout) Translation.

Catalog translation enables the extraction of translatable strings from all objects contained in a selected catalog folder into a single translation file; this file can then be translated and uploaded back to Publisher and assigned the appropriate language code.

Catalog translation extracts not only translatable strings from the report layouts, but also the user interface strings that are displayed to users, such as catalog object descriptions, report parameter names, and data display names.

Users viewing the catalog see the item translations appropriate for the UI Language they selected in their My Account preferences. Users see report translations appropriate for the Report Locale that they selected in their My Account preferences.
Template translation enables the extraction of the translatable strings from a single RTF-based template (including sub templates and style templates) or a single Publisher layout template (.xpt file). Use this option when you only need the final report documents translated. For example, your enterprise requires translated invoices to send to German and Japanese customers.

Limitations of Catalog Translation

If you have XLIFF file translations for specific reports and then you import a catalog translation file for the folder in which the existing translations reside, you overwrite the existing XLIFF files.

Export and Import a Catalog Translation File

This procedure describes the process of exporting an XLIFF file from the catalog, importing the translated file back to the catalog, and testing the translation.

Importing and exporting XLIFF files can only be performed by an Administrator.

To import and export an XLIFF file:

1. Select the folder in the catalog, click the Translation toolbar button, and then click Export XLIFF.
2. Save the XLIFF file to a local directory.
3. Open the Translation file (catalog.xlf) and apply translations to the Boilerplate text, as shown in the following figure.

4. After the file is translated, upload the XLIFF file to the Publisher server: Click the Translation toolbar button, then click Import XLIFF. Upload the translated XLIFF to the server.
5. To test the translation, select My Account from Signed In As in the global header.
6. On the General tab of the My Account dialog, change the Report Locale and the UI Language preferences to the appropriate language and click **OK**.

7. View the objects in the translated folder.

Template Translation

RTF and Publisher (.xpt) templates can be translated from the Properties page. Template translation includes:

- RTF templates
- RTF sub templates
- Style templates
- Publisher templates (.xpt)

To access the Properties page, click the **Properties** link for the layout in the Report Editor, as shown below.

From the Properties page you can generate an XLIFF file for a single template. Click **Extract Translation** to generate the XLIFF file.

Generate the XLIFF File from the Layout Properties Page

Generate the XLIFF file for report layout templates, style templates, and sub templates.

To generate the XLIFF file for report layout templates:

1. Navigate to the report in the catalog and click **Edit** to open it for editing.
2. From the thumbnail view of the report layouts, click the **Properties** link of the layout (RTF or XPT) to open the Layout Properties page.
3. In the **Translations** region, click **Extract Translation**.

Publisher extracts the translatable strings from the template and exports them to an XLIFF (.xlf file).

4. Save the XLIFF to a local directory.

To generate the XLIFF file for style templates and sub templates:

1. Navigate to the style template or sub template in the catalog and click **Edit** to open the Template Manager.

2. In the **Translations** region, click **Extract Translation**.

Publisher extracts the translatable strings from the template and exports them to an XLIFF (.xlf file).

3. Save the XLIFF to a local directory.

**Translate the XLIFF File**

When you download a XLIFF file, it can be sent to a translation provider, or using a text editor, you can enter the translation for each string.

A “translatable string” is any text in the template intended for display in the published report, such as table headers and field labels. Text supplied at runtime from the data is not translatable, nor is any text that you supply in the Microsoft Word form fields.

You can translate the template XLIFF file into as many languages as desired and then associate these translations to the original template.

**Upload the Translated XLIFF File to Publisher**

You can run the Template Manager to upload the translated XLIFF file to Publisher.

To upload a translated XLIFF file:

1. Navigate to the report, sub template, or style template in the catalog and click **Edit** to open it for editing.

For reports only:

   From the thumbnail view of the report layouts, click the **Properties** link of the layout to open the Template Manager.

2. In the Translations region, click the **Upload** toolbar button.

3. In the Upload Translation File dialog, locate the file in the local directory and select the **Locale** for this translation.

4. Click **OK** to upload the file and view it in the Translations table.

**Use a Localized Template**

You can create localized templates for reports.

If you need to design a different layout for the reports that you present for different localizations, then you can create new RTF file designed and translated for the locale and upload this file to the Template Manager.

The localized template option is not supported for XPT templates.
Design the Localized Template File

Use the same tools that you used to create the base template file, translating the strings and customizing the layout as desired for the locale.

Upload the Localized Template to Publisher

Upload localized template files in rtf format.

To upload a localized template:

1. Navigate to the report, subtemplate, or style template in the catalog and click Edit to open it for editing.
   
   For reports only:
   
   From the thumbnail view of the report layouts, click the Properties link of the layout to open the Template Manager.

2. In the Templates region, click the Upload toolbar button.

3. In the Upload Template File dialog, locate the file in the local directory, select rtf as the Template Type and select the Locale for this template file.

4. Click OK to upload the file and view it in the Templates table.
Part III
Reference

This part provides reference information.

Appendices:
- Frequently Asked Questions
- Troubleshoot
Frequently Asked Questions

This reference provides answers to common questions asked by administrators responsible for configuring and managing Oracle Analytics Cloud.

Topics:

- **Top FAQs to Configure and Manage Oracle Analytics Cloud**
  - Can I see how many users are currently signed in?
  - Where can I find the public key for my service?
  - Can I see the SQL generated by an analysis and analyze the log?
  - What happens to my content if I terminate my subscription to Oracle Analytics Cloud?

- **Top FAQs to Back Up and Restore User Content**
  - What do I need to back up?
  - How often should I take snapshots?
  - Where are my snapshots stored?
  - How long can I keep my snapshots?
  - What does Oracle back up?
  - How often does Oracle back up?
  - How long does Oracle keep system-generated backups?
  - Can I use the Oracle system-generated backup to restore user content instead of my snapshots?
  - Do I need to back up and restore the actual data associated with my data sets separately?

- **Top FAQs to Index Content and Data**
  - What can I index?
  - What is a certified data set?
  - How often should I schedule a crawl?
  - Are there considerations when indexing subject areas with large tables?
  - How are search results ordered?
  - Should I use Don’t Index to secure my catalog items?
  - How do I build an index most effectively?
  - Why are there many select distinct queries on the database during indexing?
Top FAQs to Configure and Manage Oracle Analytics Cloud

The top FAQs for configuring and managing Oracle Analytics Cloud are identified in this topic.

Can I see how many users are currently signed in?
Yes. Display the Home page, click Console, and then click Sessions and Query Cache. See Monitoring Users Who Are Signed In.

Where can I find the public key for my service?
Display the Home page, click Console, Connections, click the menu icon, and then click Get Public Key.

Can I see the SQL generated by an analysis and analyze the log?
Yes. Display the Home page, click Console, and then click Sessions and Query Cache. See Analyzing SQL Queries and Logs.

What happens to my content if I terminate my subscription to Oracle Analytics Cloud?
Before you terminate your subscription, take a snapshot of your system, that is, the latest data model, catalog content, application roles, and so on. If you subscribe to Oracle Analytics Cloud in the future, you can import content from this archive file. See Uploading Snapshots and Restoring from a Snapshot.

Can I change the default logo and dashboard style for the whole deployment?
Yes. When logged in as Administrator, navigate to the Classic Home page, click the user profile icon, click Administration, and then click Manage Themes. Create a new theme including dashboard properties such as logo, branding, page colors, and link colors, and click Active. This new style is applied for all new browser sessions.

Can I upload a data model RPD file from Oracle BI Enterprise Edition?
Yes. If you’ve modeled your business data with Oracle BI Enterprise Edition, then you don’t need to start from scratch in Oracle Analytics Cloud. Instead of using Data Modeler, you can use the Developer Client Tool to upload and edit your data model in the cloud. See Upload Data Models from Oracle BI Enterprise Edition.

Top FAQs to Back Up and Restore User Content

The top FAQs for backing up and restoring user content are identified in this topic.

What does Oracle back up?
Oracle regularly backs up your entire Oracle Analytics Cloud environment, including system configuration and user content. Oracle Support Services use these system-generated backups to restore an environment that becomes corrupt. System-generated backups aren’t accessible to customers and they’re not intended to provide customer-requested recovery points.
How often does Oracle back up?
Daily.

How long does Oracle keep system-generated backups?
30 days.

Where does Oracle keep system-generated backups?
System-generated backups are stored in Oracle Cloud Infrastructure Object Storage. The Oracle Cloud Infrastructure Object Storage service is inherently a highly durable storage service and is governed by the resiliency and disaster recovery service level agreements offered by that service.

What do I need to back up?
You should regularly back up the content that users create to a file called a snapshot. User content includes catalog content such as reports, dashboards, data visualization projects, and pixel perfect reports, data sets, data flows, data models, security roles, service settings, and so on.

If something goes wrong with your content or service, you can revert to the content you saved in a snapshot. Snapshots are also useful if you want to move or share content from one service to another.

To back up user content, see Take a Snapshot.
To restore user content, see Restore from a Snapshot.

How often should I take snapshots?
Oracle recommends that you take snapshots at significant checkpoints, for example, before you make a major change to your content or environment. In addition, Oracle recommends that you take regular weekly snapshots or at your own defined frequency based on the rate of change of your environment and rollback requirements.

Where are my snapshots stored?
Snapshots are saved in Oracle Cloud storage. Optionally, you can download snapshots to your own file system and store them locally.

How long can I keep my snapshots?
Snapshots are retained in Oracle Cloud storage forever. You can delete snapshots that you don’t need.

Can I use the Oracle system-generated backup to restore user content instead of my snapshots?
No. System-generated backups aren’t available to customers. You must use the snapshot feature to back up and restore user content.

Do I need to back up and restore the actual data associated with my data sets separately?
Yes.
What capabilities in Oracle Analytics Cloud can I use to implement a disaster recovery plan?

Target Service Uptime information for Oracle Analytics Cloud is available at: Oracle PaaS and IaaS Public Cloud Services - Pillar document

If an unforeseen disaster happens, a well-architected business continuity plan will enable you to recover as quickly as possible and continue to provide services to Oracle Analytics Cloud users.

Oracle Analytics Cloud offers several features that you can implement to minimize disruption for users:

- **Snapshots**: Oracle recommends that you back up user content regularly to a snapshot. If required, you can restore the content in your snapshot to a redundant Oracle Analytics Cloud environment. See Take Snapshots and Restore.

- **Pause and resume**: You can deploy a passive backup Oracle Analytics Cloud environment, and use the pause and resume feature to control metering and minimize costs. See Pause and Resume a Service.

- **Diverse regional availability**: Oracle Analytics Cloud is available in several global regions. You can deploy a redundant Oracle Analytics Cloud environment in a different region to mitigate the risk of region-wide events. See Data Regions for Platform and Infrastructure Services.

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**Top FAQs to Index Content and Data**

The top FAQs for indexing data models and catalog content are identified in this topic.

**What can I index?**

You can choose to index:

- **Data models** - Subject area, dimensions names and values, and measure names and values. You must be an administrator to modify the data model indexing preferences.

- **Catalog content** - Projects, analyses, dashboards, and reports. You must be an administrator to modify the catalog indexing preferences.

- **File-based data sets** - You can index a file-based data set so that the specified users can build visualizations with a data set's data. Or you can certify a file-based data set so that the specified users can search for its data from the home page. Any user can set a file-based data set to index or certify the data set.

**What is a certified data set?**

Any user can upload a spreadsheet to create a data set, and uploaded spreadsheets can be of varying quality. When a user certifies a shared data set, it means that the user is confirming that the data set contains good, reliable data that other users can search for from the home page. When you and users who've been granted access to data sets search from the home page, the data in a certified data set is ranked high in the search results.
How often should I schedule a crawl?

The index updates automatically as users add or modify catalog content. By default, the catalog and data model crawl run once per day. In some cases you might want to change this default after importing a BAR file, if automatic indexing didn't run, or if your data updates occur less frequently (for example, monthly).

Are there considerations when indexing subject areas with large tables?

You can index any size table, but big tables will take longer to index. For large subject areas that have many tables or large tables, consider indexing only the columns your users will need to search for.

Because index files are compact, it is rare to exceed the storage space that Analytics Cloud reserves for indexing.

How are search results ordered?

Search results are listed in this order:

1. Data model (semantic layer)
2. Certified data sets
3. Personal data sets
4. Catalog items (projects, analyses, dashboards, and reports)

Should I use Don't Index to secure my catalog items?

No. Oracle doesn't recommend setting the Crawl Status field to Don't Index as a way of hiding a catalog item from users. Users won't see the item in search results or on the home page, but are still able to access the item. Instead, use permissions to apply the proper security to the item.

How do I build an index most effectively?

For best results only index the subject areas, dimensions, catalog items, and certify data sets that users need to find. Indexing all items yields too many search results. Oracle recommends that you deselect all data model and catalog items and then select only the items that the user needs. You can then add items to the index as needed.

Why are there many select distinct queries on the database during indexing?

This is most likely because the data model's indexing option is set to Index. When you set this option to Index, the metadata and values are indexed, which means that during indexing the select distinct queries are run to fetch the data values for all of the columns in all of the subject areas that are configured for indexing.

If this system overhead isn't acceptable or if users don't need the additional functionality to visualize data values from the search bar on the Home page, then go to the Console, click Search Index, and set the indexing option to Index Metadata Only. Setting this option to Index Metadata Only option indexes dimension and measure names, only, and doesn't run select distinct queries.
Troubleshoot

This topic describes common problems that you might encounter preparing data in Oracle Analytics Cloud and explains how to solve them.

Topics:

• Troubleshoot General Issues
  – I can’t sign in
  – I’m having trouble resetting my password
  – I can’t access certain options from the Home page
  – I see a performance decrease when using Mozilla Firefox
  – I’m having trouble uploading data from a spreadsheet (XLSX) exported from Microsoft Access

• Troubleshoot Configuration Issues
  – I can’t access options in the Console
  – I can’t upload my snapshot

• Troubleshoot Indexing
  – A home page search returns no results
  – A home page search returns too many or duplicate items
  – Expected items are missing from search results

Troubleshoot General Issues

This topic describes common problems that you might encounter and explains how to solve them.

I can’t sign in to Oracle Analytics Cloud

You’re likely trying to sign in using the incorrect credentials. You must sign in to Oracle Analytics Cloud using the Oracle Cloud Identity Domain credentials that were mailed to you from Oracle or provided by your administrator. You can’t sign in to Oracle Analytics Cloud using your account credentials for Oracle.com.

I’m having trouble resetting my password

When you sign up to use Oracle Analytics Cloud, you get an e-mail with a temporary password. Be careful if you copy and paste this password. If you accidentally include a blank space at the start or end of it when copying, then the password won’t be recognized when you paste it in. Make sure that you paste only the password without any blank spaces.
I can’t access certain options from the Home page

Check with your administrator to ensure that you have the correct permissions to access the options that you need.

I see a performance decrease when using Mozilla Firefox

If you use Mozilla Firefox and notice a decrease in the performance of the cloud service, then ensure that the **Remember History** option is enabled. When Firefox is set to not remember the history of visited pages, then web content caching is also disabled, which greatly affects the performance of the service. See Firefox documentation for details on setting this option.

I’m having trouble uploading data from a spreadsheet (XLSX) exported from Microsoft Access

Open your spreadsheet in Microsoft Excel and resave it as an Excel Workbook (*.xlsx). When you export spreadsheets from other tools the file format can vary slightly. Saving your data again from Microsoft Excel can fix this.

My analysis or project times out

You attempt to run an analysis or project and find that it times out. You see a message similar to this:

```
[nQSError: 60009] The user request exceeded the maximum query governing execution time.
```

This message is displayed when an Oracle Analytics query spends more than the allotted time communicating with the data source. For performance reasons, the limit for a single query to run is 10 minutes.

Try running the query again. To prevent this error, avoid long running queries.

**Note:**

For direct connections to Oracle Database, the query limit automatically extends to 60 minutes to accommodate occasional, longer running queries. To avoid excessive loads on the database, Oracle Analytics restricts the number of queries that are allowed to automatically extend at any one time. If your analysis or project connects to any other data source or connects to an Oracle Database indirectly through Data Gateway, the query limit is always 10 minutes; the limit doesn't extend beyond 10 minutes.

# Troubleshoot Configuration Issues

This topic describes common problems that you might encounter when configuring or managing Oracle Analytics Cloud and explains how to solve them.

**I can’t access options in the Console**

If you see an “unauthorized” message or don’t see an option in the Console, you probably don’t have the BI Service Administrator application role. You must have the
BI Service Administrator application role to access most Console options, for example Users and Roles, Snapshots, Connections, Safe Domains, Session and Query Cache, Issue SQL, Virus Scanner, Mail Server, and Search Index.

Ask an administrator to verify your permissions. See Assigning Application Roles to Users.

I can't upload my snapshot

You can only upload snapshots taken from Oracle Analytics Cloud, Oracle Business Intelligence Cloud Service, Oracle Data Visualization Cloud Service, Oracle BI Enterprise Edition (12c), and Oracle Analytics Server. Check where the .bar file you’re trying to upload was originally downloaded from.

I can't use Oracle Analytics Developer Client Tool/Administration Tool in SSL mode

If the default security certificates don't work, import the server security certificates. For example, on the machine where you’ve installed Developer Client/Administration Tool, you might use the Key and Certificate Management Tool (keytool) to execute these commands:

```
C:\Oracle\Middleware\oracle_common\jdk\jre\bin\keytool.exe -importcert -alias oacserver -file C:\Oracle\Middleware\oracle_common\jdk\jre\lib\security\server.crt -keystore C:\Oracle\Middleware\oracle_common\jdk\jre\lib\security\cacerts -storepass thepassword
```

Troubleshoot Indexing

This topic describes common problems that you might encounter when indexing data models and catalog content and explains how to solve them.

A home page search returns no results

If you search on the home page and no results are returned, then check that the Index User Folders option is selected. If this option isn't selected then nothing in the catalog is indexed.

This option is located on the Search Index page's Catalog tab.

A home page search returns too many or duplicate items

If your search results aren't meaningful, then reduce the number of items to index. For example, if a dimension called Sales is included in 20 subject areas and all subject areas are indexed, then when you search for Sales your results will contain 20 items called Sales.

Go to the Search Index page's Data Model and Catalog tabs and reduce the number of items to index. Oracle suggests that you deselect everything and then select only the items that you need.
Expected items are missing from search results

If some items are missing from your search results, then check that the crawl job completed successfully. Sometimes a crawl was terminated or its progress totals are zero. In such cases, rerun the crawl.

1. Click Console.
2. Click Search Index.
3. Click Monitor Crawls.
4. Click the Configure Crawls link.
5. In the Data Model tab, deselect and then reselect the Enable Data Model Crawl checkbox.
6. Click Save.
7. Click the Monitor Crawls link and locate the scheduled job. The revised crawl will run in a few minutes.