Oracle® Cloud

Administering Oracle Fusion Data Intelligence

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Preface

Learn how to get started with Oracle Fusion Data Intelligence.

Topics

- Audience
- Related Documentation
- Conventions

Audience

This document is intended for administrators who implement, configure, and manage Oracle Fusion Data Intelligence.

Related Documentation

These related Oracle resources provide more information.

- Using Oracle Fusion Data Intelligence
- Getting Started with Oracle Analytics Cloud
- Visualizing Data and Building Reports in Oracle Analytics Cloud
- Preparing Data in Oracle Analytics Cloud

Conventions

The following text conventions are used in this document.

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

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1

Get Started with Oracle Fusion Data Intelligence

Let’s explore Oracle Fusion Data Intelligence and what you need to know to get started with administration.

Topics:

- About Oracle Fusion Data Intelligence
- About Oracle Fusion Data Intelligence Service Level Objective
- About Oracle Fusion Data Intelligence Releases
- About Oracle Fusion Data Intelligence Components
- About Oracle Fusion Data Intelligence Console
- Comparison of Capabilities Between Analytics Cloud Associated with Fusion Data Intelligence and Standalone Analytics Cloud
- Usage Guidelines for Autonomous AI Lakehouse Associated with Oracle Fusion Data Intelligence
- Preview Features
- Generally Available Features
- Third Party Data Connectors
- Region Availability
- Billing Metrics of Autonomous AI Lakehouse Associated with Oracle Fusion Data Intelligence
- Oracle Fusion Data Intelligence Security Considerations

About Oracle Fusion Data Intelligence

Oracle Fusion Data Intelligence is a family of prebuilt, cloud native analytics applications for Oracle Cloud Applications that provides line-of-business users with prebuilt insights to improve decision-making.

It empowers business users with industry-leading, AI-powered, self-service analytics capabilities for data preparation, visualization, enterprise reporting, augmented analysis, and natural language processing. It's a Cloud application that delivers best-practice key metrics and deep analyses to help decision-makers run their business. Oracle Fusion Data Intelligence is built on top of Oracle Analytics Cloud and Oracle Autonomous AI Lakehouse. This packaged service starts with Oracle Fusion Cloud Applications, and you can deploy rapidly, personalize, and extend it. The service extracts and loads data from your Oracle Fusion Cloud Applications into an instance of Oracle Autonomous AI Lakehouse. Business users can then create and customize dashboards in Oracle Analytics Cloud.

This service consists of a data pipeline, data warehouse, semantic model, and best-practice content such as prebuilt key metrics, workbooks, and visualizations. Oracle manages the service starting with deployment through performance monitoring, upgrades, and maintenance

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for the prebuilt content. You can customize the prebuilt content as defined in the Customize Oracle Fusion Data Intelligence section. Apart from your Oracle Fusion Cloud Applications data, you can load external data from non-Oracle Fusion Cloud Applications sources such as SalesForce or EBusiness Suite into Oracle Autonomous AI Lakehouse associated with Oracle Fusion Data Intelligence. See Manage Data Connections.

Oracle Fusion Data Intelligence incorporates the appropriate cache management strategy to optimize performance.

You can only configure the semantic model customizations and security through the Oracle Fusion Data Intelligence Semantic Model Extensions framework as explained in Customize Oracle Fusion Data Intelligence. You can't configure the semantic model using Oracle Analytics Cloud Semantic Modeler or APIs. You can configure select supported use cases through Oracle Analytics Client Tools and then merge them with the semantic model in Oracle Fusion Data Intelligence using the External Application Merge capability. See Merge Your External Applications. It isn't possible to open online, update, or merge the prebuilt semantic model using Oracle Analytics Client Tools.

If you extract, integrate, or share Oracle Fusion Data Intelligence data to any external system, you need to be licensed by the employee metric for the specific module. For example, if you've Oracle Fusion HCM Analytics (employee metric) and Oracle Fusion ERP Analytics data (user metric) you can only share Oracle Fusion HCM Analytics data. You may need to contact your Oracle Account Representative to update your licensing terms.

Oracle Fusion Data Intelligence runs on Oracle Cloud Infrastructure and is integrated with many infrastructure services. Before you begin using Oracle Fusion Data Intelligence, familiarize yourself with Oracle Cloud Infrastructure. See Welcome to Oracle Cloud Infrastructure.

To familiarize yourself with the Oracle Fusion Data Intelligence user experience, see Learn About the New Oracle Fusion Data Intelligence Experience.

About Oracle Fusion Data Intelligence Service Level Objective

Oracle Fusion Data Intelligence is built on Oracle Cloud Infrastructure and leverages the Oracle PaaS Cloud services.

Oracle Fusion Data Intelligence availability is tied to dependent Oracle services such as Oracle Identity Cloud Service, Oracle Analytics Cloud, Oracle Autonomous AI Lakehouse, and Oracle Cloud IaaS services, including compute and storage. Each of these services has published service level agreements under Oracle Cloud SLA. See the Oracle PaaS and IaaS Public Cloud Services Pillar Document (PDF).

Oracle Fusion Data Intelligence has a service-level objective (SLO) of 99.9%.

About Oracle Fusion Data Intelligence Releases

Updates to Oracle Fusion Data Intelligence are mainly released as Application and Platform releases with major features and minor, security, and emergency patches.

Here are the details:

- Platform Releases:
  - Platform Releases contain updates to your service; for example they may contain security patches and updates to the Console accessible to administrators.
  - You don't need to schedule the upgrade, make any selection, or take any action because Oracle applies the release patches automatically. These updates include

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operating system and security patches, and are applied for all customers on the same day.

- Because these releases don't change the data model or content, business users aren't affected.
- All reports and dashboards are available during the upgrade process. Pipelines (incremental daily schedule) may get delayed if the pipeline coincides with the upgrade.
- You can expect a major release every quarter (February, May, August, and November), a minor patch every month, and patches as needed for emergency fixes.
- Early information about what's new in a major release is made available a week prior to the product help updates for the given release. See What's New for Oracle Fusion Data Intelligence.
- During a platform patch, the same Semantic Model Extension application batch processes paused during an application upgrade are paused.

> **Note**
>
> Bundle generation and deployment pause while platform patching is in progress. They automatically resume when patching or a rollback finishes, so no manual restart required.

- Application Releases:
  - Application Releases contain updates to the data model and new content when available.
  - You'll receive notification emails about these releases.
  - You'll find the release numbers listed in the Release Updates tile of the Console, where you can view the available releases and apply them as appropriate.
  - You'll notice an auto-update target date for major releases. You can update to a release any time before the predefined date by changing it to a date that's convenient for you. See Update Your Application. On the predefined date, if you haven't yet updated, then Oracle Fusion Data Intelligence automatically updates your data model and content.
  - All reports and dashboards are available during the upgrade process.
  - You can expect a major release every quarter (February, May, August, and November) and optional updates or emergency patches. Each patch is cumulative. For example, if you choose to apply the 26.R2.P3 patch, then the previous patches (such as 26.R2.P1 and 26.R2.P2) are also applied with the 26.R2.P3 patch. You won't see the older patches listed in the Release Updates tile of the Console when the release changes to the current one (such as 26.R1.P3).
  - You aren't impacted by major application releases which have undergone testing to negate the impact to existing business users. Major application releases don't cause service downtime.
  - During an application upgrade, all Semantic Model Extension application batch processes are paused, including:
    - Sandbox processes such as Apply, Merge, and Publish Model.
    - Processes that trigger system steps. See "What triggers the system steps to run?" in Top FAQs for Customization and Data Augmentation.

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* External application merge.
* Semantic Model Bundle import.

About Oracle Fusion Data Intelligence Components

Oracle Fusion Data Intelligence consists of several core components such as Oracle Cloud Infrastructure Identity and Access Management, Oracle Fusion Data Intelligence Console, data pipeline infrastructure, Oracle Autonomous AI Lakehouse, and Oracle Analytics Cloud.

It has prebuilt components that Oracle manages and extensible components that you can manage. Oracle manages these prebuilt components that you can customize and extend:

- Data pipeline to Oracle Fusion Cloud Applications
- Data model
- Semantic model
- Best practice content such as key metrics, workbooks, and reports

You can:

- Add external data sources into the same Oracle Autonomous AI Lakehouse as the Oracle Fusion Cloud Applications data.
- Use any ETL tool or the robust Oracle Data Integrator with its many connectors to load data into the custom schemas and tables in the same Oracle Autonomous AI Lakehouse repository.
- Connect to data using the more than 30 self-service connectors rather than loading data into Oracle Autonomous AI Lakehouse.
- Import Microsoft Excel files or spreadsheets.
- Extend the semantic model.
- Create key metrics, dashboards, and reports.

About Oracle Fusion Data Intelligence Console

You must have the Oracle Fusion Data Intelligence service administrator role to access the Console and perform administration tasks.

The following table outlines the tasks that you can perform on the Oracle Fusion Data Intelligence Console.

Task	More information
Release Updates	Decide upon and apply the application updates (except the emergency patches that are deployed automatically). See Manage Application Updates.
Virus Scanner	Use the Virus Scanner option on the Console to connect to your virus scanning server. See Configure a Virus Scanner.
Security	Manage users and their access to subject areas and data. See Manage Users, Groups, Application Roles, and Data Access.
Offering Updates	Monitor the offering updates, know how to fix update issues, and resume updating after resolving the issues. See Update Your Subscriptions.
Reporting Configuration	Specify how data is presented on the key metrics, workbooks, visualizations, dashboards, and reports. See About Reporting Configurations.

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Task	More information
Data Configuration	Use the Data Configuration option to: • Configure connections to several source systems and managed pipelines. • Modify pipeline settings, data augmentations, and application-specific configurations. See Configure Oracle Fusion Data Intelligence Data.
Enable Features	Enable the functionality available as a: • Preview feature to try it out. See Make Preview Features Available. • Generally available feature that needs you to enable it to use the specific functionality. See Enable Generally Available Features.
Semantic Model Extensions	Configure extensions and customizations to the semantic model. Join with custom data objects or import external semantic models. See Customize Oracle Fusion Data Intelligence.
Data Validation	Validate data after loading it from the Oracle Fusion Cloud Applications source into your data warehouse. See Validate Oracle Fusion Data Intelligence Data.
Uploads	Upload and download data related to security and financial categories to your data warehouse using files. See Manage Uploads and Downloads.
Bundles	Manage snapshots of your application artifacts as bundles. Promote changes to the semantic model, security configurations, and customized key metrics from non-production to Production environments. See Bundle Your Application Artifacts.
Bundle Repository	Provides an app-store experience for importing bundles created by partners or other users. Use the repository to share bundles and provide updates easily from Oracle internal and external partners with users. See About the Bundle Repository.

Comparison of Capabilities Between Analytics Cloud Associated with Fusion Data Intelligence and Standalone Analytics Cloud

As an Oracle Fusion Data Intelligence service administrator, you perform certain tasks differently in the Oracle Analytics Cloud instance associated with Oracle Fusion Data Intelligence than the standalone Oracle Analytics Cloud instance.

Service administrators have access to two console user interfaces, and administrative tasks span both the consoles. The Oracle Fusion Data Intelligence Console allows administrators to manage central tasks that are common to both users as well as the application. The Oracle Analytics Cloud Console allows administrators to configure features that are specific to analytics. An Oracle Analytics Cloud instance associated with Oracle Fusion Data Intelligence is directly connected to the Oracle Autonomous AI Lakehouse instance and doesn't support connections to external systems. For example, connections to social media platforms aren't supported through an Oracle Analytics Cloud instance associated with an Oracle Fusion Data Intelligence instance. You can use the Oracle Fusion Data Intelligence Console to define external connections and extensions to the repository file but you can't directly access the repository (rpd) file.

The following table outlines the tasks that you can and can't perform on the Oracle Analytics Cloud instance Console that's included with Oracle Fusion Data Intelligence. You must have the Oracle Fusion Data Intelligence service administrator role to access the Console and perform these administration tasks:

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Tasks	More Information
Maps	Define how users display their data on maps. See Manage Map Information for Analyses.
Extensions	Upload custom visualization types or custom data actions. See Manage Custom Plug-ins.
Social	Not available. External connections to social media platforms aren't allowed in Oracle Fusion Data Intelligence.
Search Index	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.
Safe Domains	Don't change the default details. Authorize access to safe domains. See Register Safe Domains.
Users and Roles	Not available. Use the Security option on the Console in Oracle Fusion Data Intelligence to define users and roles. See Manage Users, Groups, Application Roles, and Data Access.
Snapshots	Not available. Use the Bundles option on the Console in Oracle Fusion Data Intelligence to manage snapshots. See Bundle Your Application Artifacts.
Semantic Model Connections	Don't change the default details. Additional database connections for the semantic model aren't supported through the Oracle Analytics Cloud Console. Only the connection to Oracle Autonomous AI Lakehouse is supported. However, all direct connections from the visualization layer in the Oracle Analytics Cloud instance are supported.
Virus Scanner	Don't change the default details. Use the Virus Scanner option on the Console in Oracle Fusion Data Intelligence to connect to your virus scanning server. See Configure a Virus Scanner.
Session and Query Cache	See which users are signed in and troubleshoot report queries. This is also accessible from the Console in Oracle Fusion Data Intelligence. See Monitor Users and Activity Logs.
Issue SQL	Test and debug SQL queries. See Run Test SQL Queries.
Mail Server	Connect to your email server. See Set Up an Email Server to Deliver Reports.
Monitor Deliveries	Track deliveries sent by the email server. See Track the Reports You Distribute by Email or Through Agents.
System Settings	Not authorized. Oracle Fusion Data Intelligence doesn't allow configuration of advanced options for the associated Oracle Analytics Cloud instance. Oracle directly manages the Oracle Analytics Cloud system settings for each of the Oracle Fusion Data Intelligence instances and tunes the instances to provide an optimized user experience.
Remote Data Connectivity	Register one or more Data Gateway agents for remote connectivity to visualization workbooks. See Configure and Register Data Gateway for Visualization.
Vanity URL	Not available.
Early access to Oracle Analytics Cloud updates	Not available. Oracle Fusion Data Intelligence manages platform updates. See About Oracle Fusion Data Intelligence Releases.

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Usage Guidelines for Autonomous AI Lakehouse Associated with Oracle Fusion Data Intelligence

Oracle Fusion Data Intelligence provisions instances of Oracle Autonomous AI Lakehouse to store data. As part of the integrated SaaS offering of Oracle Fusion Data Intelligence, Oracle doesn't allow or recommend certain Oracle Autonomous AI Lakehouse administration tasks.

As a service administrator, you can access the Oracle Autonomous AI Lakehouse instance associated with Oracle Fusion Data Intelligence using the Oracle Cloud Infrastructure Console. The following table outlines the tasks that aren't allowed or recommended.

Task	More information
Database lifecycle management	You can't stop, delete, pause, or restart the database. Oracle Fusion Data Intelligence controls these activities for the instance. You can’t rename the database or use the **Auto start/stop schedule** option for the Oracle Autonomous AI Lakehouse instance associated with Oracle Fusion Data Intelligence.
Changes to auto-provisioned resources	You can scale up resources such as ECPUs for additional capacity or terabytes for additional storage. However, you can't scale down such resources to levels below those automatically provisioned with Oracle Fusion Data Intelligence. Auto-scale for ECPUs is turned on by default by Oracle Fusion Data Intelligence and you can't turn it off. By default, the **Storage auto scaling** toggle under the **Manage resource allocation** option is turned off and you can’t turn it on for the Oracle Autonomous AI Lakehouse instance associated with Oracle Fusion Data Intelligence.
Autonomous Data Guard	This action is restricted because Oracle Fusion Data Intelligence doesn't currently support failover to the instance populated through Data Guard.
Restore from backups	Oracle Autonomous AI Lakehouse provides daily backups. While restoring to a new instance may be useful to view or copy data from backup, it isn't recommended to restore backups against the Oracle Autonomous AI Lakehouse instance associated with Oracle Fusion Data Intelligence. Doing so may put the data pipelines and factory content in an inconsistent state.

The Oracle Autonomous AI Lakehouse instance created by Oracle Fusion Data Intelligence is primarily for use by the service. While you can insert custom data and query the database, it has an impact on the database storage and compute. Following are some guidelines:

Custom Usage	Guidance
Adding data to custom schemas	You can add as many as 50 gigabytes of custom data to the service. For more than 50 gigabytes, you must scale up the storage through the Oracle Cloud Infrastructure Console, which is charged to your Oracle Cloud account. If you intend to do compute-intensive queries and transformations on your custom data, then you can scale up additional ECPUs using the Oracle Cloud Infrastructure Console, which is charged to your Oracle Cloud account. See Scale Up Oracle Autonomous AI Lakehouse.

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Custom Usage	Guidance
Adding additional ECPUs	Ensure that you have adequate ECPUs configured in Oracle Autonomous AI Lakehouse (and corresponding sessions) to be able to run custom ETL. For every ECPU that's allocated as part of the Oracle Fusion Data Intelligence instance creation, you shouldn't exceed 5 low service concurrent sessions for custom ETL. Exceeding this can impact the ETL or reporting performance and therefore isn't supported. If you need to run more sessions, then ensure that you've additional ECPUs added to your Oracle Autonomous AI Lakehouse instance. Each additional ECPU that you add this way allows as many as 300 low sessions. You must avoid Medium or High sessions in all cases because they block the ETL pipeline.
Adding database connections	See Tutorial. Follow these guidelines: • If you plan to run compute-intensive queries or create many concurrent database connections, then you can scale up additional ECPUs through the Oracle Cloud Infrastructure Console, which is charged to your Oracle Cloud account. • Aim for fewer than 10 concurrent database connections. • When you configure the connections, ensure that you select the service with the *low* prefix in its name. Don't select the service with the *high* prefix because it can lead to performance issues in reports and delays in completion of daily data refreshes in Oracle Fusion Data Intelligence. • Close unused sessions in a timely manner to ensure no adverse impact on the performance of Oracle Fusion Data Intelligence.

Preview Features

Oracle Fusion Data Intelligence offers certain functionality as preview features for you to try. Preview features are high-confidence features that are complete from design, specification, and implementation perspective. These features have a roadmap commitment but may change before they become generally available.

You can evaluate the Preview features for production use as-is based on your specific requirements. If you've questions on the feasibility of deploying a specific Preview feature for production use in your instance, contact Oracle Support.

Preview features are disabled by default but administrators can enable them for use. See Make Preview Features Available.

> **Note**
>
> Preview features aren’t available for restricted realms.

Application Settings

Feature	Description
Bundle Repository	You can share bundles from one instance to another using the Bundle Repository capability. You can share them within the same tenancy as private bundles or share as public bundles for tenancies with specific entitlements. See Share Bundles.

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Feature	Description
AI Concierge	AI Concierge provides administrators AI-powered capabilities to know and complete the administrator tasks. You can ask questions in conversational English regarding administrator functions and data pipeline process. It performs tasks such as activating functional areas, enabling features, creating data extensions, and configuring data pipeline parameters after getting your confirmation. See Access AI Concierge. AI Concierge is enabled by default.
Data Share	Share the warehouse data to external target systems in addition to Oracle Autonomous AI Lakehouse. Use this functionality to share with other target systems where additional analysis is required. This functionality has licensing restrictions. Contact your Oracle account manager for details.

Connectors

See Third Party Data Connectors

Data Applications

Feature	Description
DA Scripts	A script based custom data application, that helps define a consolidated extract, transform, and publish instructions for data pipeline. This feature is enabled by default. See Overview of Data Scripting.

Functional Areas

See *Features Available for Preview* in:

- Fusion CX Analytics
- Fusion ERP Analytics
- Fusion HCM Analytics
- Fusion SCM Analytics

Notifications

Feature	Description
Event Notification	This feature publishes data pipeline events to the Oracle Cloud Infrastructure Audit service. See Enable Event Notifications (Preview).

Pipeline Features

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Feature	Description
Data Refresh Estimate	This feature enables prediction of completion time for a data refresh. You can see the predicted time under Data Pipeline in the Pipeline Parameters section on the Pipeline Settings page. See About Data Refresh Performance. • **On** – Display the **Estimated Refresh Completion** detail under Data Pipeline in the Pipeline Parameters section on the Pipeline Settings page. • **Off** – Hide the **Estimated Refresh Completion** detail under Data Pipeline in the Pipeline Parameters section on the Pipeline Settings page. Default: Off
Frequent Data Refresh V2	This feature enables a new version of Frequent Data Refresh. To configure, navigate to the Frequent Data Refresh page in Pipeline Settings. See Schedule Frequent Data Refreshes. • **On** – Display the **Frequent Data Refresh** tab on the Pipeline Settings page. • **Off** – Hide the **Frequent Data Refresh** tab on the Pipeline Settings page. Default: Off
Frequent Refresh Tables	This feature enables custom warehouse tables for frequent data refresh. See Schedule Frequent Refreshes of Warehouse Tables (Preview). • **On** – Display the **Frequent Refresh Tables** tab on the Pipeline Settings page. • **Off** – Hide the **Frequent Refresh Tables** tab on the Pipeline Settings page. Default: Off
Functional Area Schedule Override	This feature enables you to override the schedules for data pipelines by specifying a different refresh schedule. See Override Data Pipeline Schedules for Functional Areas (Preview). • **On** – Display the **Functional Area Schedule Override** tab on the Pipeline Settings page. • **Off** – Hide the **Functional Area Schedule Override** tab on the Pipeline Settings page. Default: Off
Prioritized Data Refresh	This feature enables you to configure the warehouse tables for prioritized refresh ahead of other data in the regularly scheduled daily refresh cycles. See Prioritize Datasets for Incremental Refresh (Preview). • **On** – Display the **Prioritized Data Refresh** tab on the Pipeline Settings page. • **Off** – Hide the **Prioritized Data Refresh** tab on the Pipeline Settings page. Default: Off

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Feature	Description
Support multiple sources	This feature enables using data from multiple sources in one data application to ensure data refresh happens in a consistent manner using data from all sources in the group. See Create a Custom Data Application that Uses Data from Multiple Sources. • **On** – Display the **Source Group** tab on the Manage Connections page. • **Off** – Hide the **Source Group** tab on the Manage Connections page.
Wait to start refresh	This feature lets you configure when the refresh process starts, either based on data readiness in the source table or at a fixed time interval after scheduled time. See Configure Incremental Refresh to Wait for Specific Oracle Fusion Cloud Applications Data Availability. • **On** – Display the **Wait to start refresh** checkbox in the Data Refresh Schedule section on the Pipeline Settings page. • **Off** – Hide the **Wait to start refresh** checkbox in the Data Refresh Schedule section on the Pipeline Settings page.

Limited Availability Features

Limited Availability features are early-stage capabilities available for deployment with approval from Oracle Product Management. As these features continue to evolve, they may undergo revisions and are generally intended for evaluation rather than production use, unless otherwise explicitly committed by Oracle. For questions about access, behavior, configuration, usage, or issues with these features, submit a General Guidance Service Request through Oracle Support.

Generally Available Features

Oracle Fusion Data Intelligence offers certain functionality as generally available that you must enable using the Console. Generally available features are publicly available features that you can use for production workloads.

Generally available features are disabled by default but the administrators can make these features available for use; see Enable Generally Available Features.

Connectors

See Third Party Data Connectors

Pipeline Features

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Feature	Description
Frequent Refresh	This feature provides an ability to configure the Frequent Data Refresh process. Ensure to configure the frequent data refresh on the Pipeline Settings page by selecting the frequency and functional areas. This feature enables certain pipeline refresh schedules to be set to a frequency of 4 hours or more. See Schedule Frequent Refreshes of Data. • **On** – Display the **Frequent Refresh** option on the Pipeline Settings page. • **Off** – Hide the **Frequent Refresh** option on the Pipeline Settings page. Default: Off Restart Required: No
Scheduled Data Reload	For select functional areas, an administrator can schedule a full refresh on a weekly, monthly, or quarterly basis. This feature requires incremental data refresh to be scheduled for a daily frequency. **Note** In Platform 26.R3 and later releases, full reload won't be done when you activate a functional area or data augmentation. You might need to do full reload on some functional areas or data augmentations if required. See Schedule Periodic Full Reload of Functional Area Data. • **On** – Display the **Reload Data Schedule** tab on the Pipeline Settings page. • **Off** – Hide the **Reload Data Schedule** tab on the Pipeline Settings page. Default: Off Restart Required: No
Reset and Reload the Data Source	This feature enables reset and reload of a data source. You can reset and reload data for all the activated functional areas, augmentations, and data applications. See Reset and Reload the Data Source. • **On** – Display the **Data Source Reset and Reload** detail under Data Pipeline in the Pipeline Parameters section on the Pipeline Settings page. • **Off** – Hide the **Data Source Reset and Reload** detail under Data Pipeline in the Pipeline Parameters section on the Pipeline Settings page. Default: Off Restart Required: No

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Feature	Description
Reset Data Warehouse	This feature enables the option to reset the data warehouse (hard reset) and delete all data. The action is irreversible. During the data warehouse reset, all the activated functional areas are moved to “Saved” state and you must reactivate them. See Reset the Data Warehouse. • **On** – Display the **Reset Data Warehouse** action on the Pipeline Settings page. • **Off** – Hide the **Reset Data Warehouse** action on the Pipeline Settings page. Default: Off Restart Required: No
SME Options for Data Augmentation	This feature enables the semantic modeling options of Dimension, Extend Entity, and Fact in the Data Augmentation wizard. Augmentations that are configured as dimensions, custom fact, or extend entity won't be available for semantic model extensions. See About Augmenting Your Data. • **On** – Display the **Create Dimension**, **Create Fact**, and **Extend Entity** in the **Augumentation Type** list of values in the Data Augmentation wizard. • **Off** – Hide the **Create Dimension**, **Create Fact**, and **Extend Entity** in the **Augumentation Type** list of values in the Data Augmentation wizard. Default: Off Restart Required: No

Semantic Model Features

Feature	Description
Upload Multiple External Applications	This feature enables you to upload multiple external applications within semantic model extensions. Oracle recommends that you keep this feature disabled unless you have a strong business requirement to use multiple external applications. Supporting multiple applications increases validation and merge processing, which can result in longer import and deployment times. If multiple versions of an external application were unintentionally imported, remove older duplicate versions, consolidate into a single application where possible, and then disable this feature to prevent future accidental duplication. For bundle deployment, configure this setting in the same way across both the source and target instances. If the settings don't match, bundle deployment fails. Before regenerating and redeploying the bundle, ensure the setting is same in both instances. See Import Semantic Model. • **On** – Allows import and deployment of multiple external applications. • **Off** – Prevents import and deployment of multiple external applications. Default: **Off** for all new 26.R2 and later instances and for instances with no or a single external application uploaded prior to 26.R2. **On** for instances with multiple RPDs uploaded prior to 26.R2. Restart Required: No

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Third Party Data Connectors

Oracle Fusion Data Intelligence enables you to connect to a variety of data sources and remote applications to provide the background information for reports. Certain data connectors are available as preview features while some are available by default.

Currently when you load data from "external" sources into Oracle Fusion Data Intelligence, be aware of the limit of 50GB of data. You'll be charged for data that exceeds this limit. See Is there a limitation on external data volume that's extracted into the Autonomous AI Lakehouse? and Which data sources are included in my subscription and not subject to the 50GB limit?

Data Connectors Available as Preview Features

Preview features are disabled by default but administrators can enable them for use. See Make Preview Features Available.

Connector	Description
AWS S3	This feature enables connecting to the data in the Amazon Simple Storage Service instance. See Load Data from Amazon Simple Storage Service into Oracle Fusion Data Intelligence (Preview). • **On** – Display the **AWS S3** option in the Create Connection dialog. • **Off** – Hide the **AWS S3** option in the Create Connection dialog.
Azure SQL	This feature enables connecting to an Azure SQL instance to bring data into Oracle Fusion Data Intelligence for data augmentation. See Load Data from Azure SQL into Oracle Fusion Data Intelligence (Preview). • **On** – Display the **Azure SQL** option in the Create Connection dialog. • **Off** – Hide the **Azure SQL** option in the Create Connection dialog.
Azure Storage Connector	This feature enables connecting to the data in the Azure Storage to extract it and build data augmentation for running analytics. See Load Data from Azure Storage into Oracle Fusion Data Intelligence (Preview). • **On** – Display the **Azure Storage** option in the Create Connection dialog. • **Off** – Hide the **Azure Storage** option in the Create Connection dialog.
Oracle Autonomous Database	This feature enables connecting to the custom data in Oracle Autonomous AI Database. You can create up to five connections to different Oracle Autonomous AI Database instances which are denoted as **Oracle Autonomous Database 1**, **Oracle Autonomous Database 2**, **Oracle Autonomous Database 3**, **Oracle Autonomous Database 4**, and **Oracle Autonomous Database 5**. See Load Data from Oracle Autonomous Database into Oracle Fusion Data Intelligence (Preview). • **On** – Display the Oracle Autonomous AI Database option such as **Oracle Autonomous Database 1** in the Create Connection dialog. • **Off** – Hide the Oracle Autonomous AI Database option such as **Oracle Autonomous Database 1** in the Create Connection dialog.

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Connector	Description
Oracle Enterprise Data Management Cloud	This feature enables connecting to Oracle Enterprise Data Management Cloud instance to build data augmentation with data from that instance. See Load Data from Oracle Enterprise Data Management Cloud into Fusion Data Intelligence (Preview). • **On** – Display the **Oracle Enterprise Data Management Cloud** option in the Create Connection dialog. • **Off** – Hide the **Oracle Enterprise Data Management Cloud** option in the Create Connection dialog.
Oracle EPM FCCS Integrator	This feature enables data extraction from Oracle Cloud EPM Financial Consolidation and Close to bring data into Oracle Fusion Data Intelligence for data augmentation. See Create a Oracle Fusion Data Intelligence EPM Integrator Connection. • **On** – Display the **Oracle EPM FCCS Integrator** option in the Create Connection dialog. • **Off** – Hide the **Oracle EPM FCCS Integrator** option in the Create Connection dialog.
Oracle EPM Planning Integrator	This feature enables data extraction from Oracle Cloud EPM Planning to bring data into Oracle Fusion Data Intelligence for data augmentation. See Create a Oracle Fusion Data Intelligence EPM Integrator Connection. • **On** – Display the **Oracle EPM Planning Integrator** option in the Create Connection dialog. • **Off** – Hide the **Oracle EPM Planning Integrator** option in the Create Connection dialog.
Oracle Cloud EPM Profitability and Cost Management Integrator	This feature enables data extraction from Oracle Cloud EPM Profitability and Cost Management to bring data into Oracle Fusion Data Intelligence for data augmentation. See Create a Oracle Fusion Data Intelligence EPM Integrator Connection. • **On** – Display the **Oracle Cloud EPM Profitability and Cost Management Integrator** option in the Create Connection dialog. • **Off** – Hide the **Oracle Cloud EPM Profitability and Cost Management Integrator** option in the Create Connection dialog.
Oracle Cloud EPM Tax Reporting Integrator	This feature enables data extraction from Oracle Cloud EPM Tax Reporting Integrator to bring data into Oracle Fusion Data Intelligence for data augmentation. See Create a Oracle Fusion Data Intelligence EPM Integrator Connection. • **On** – Display the **Oracle Cloud EPM Tax Reporting Integrator** option in the Create Connection dialog. • **Off** – Hide the **Oracle Cloud EPM Tax Reporting Integrator** option in the Create Connection dialog.

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Connector	Description
EPM Financial Close and Consolidation Data Export	This feature enables connecting to a EPM Export Data instance to bring data into Oracle Fusion Data Intelligence for data augmentation. See Load Data from EPM Export Data Instance into Fusion Data Intelligence (Preview). • **On** – Display the **EPM Financial Close and Consolidation Data Export** option in the Create Connection dialog. • **Off** – Hide the **EPM Financial Close and Consolidation Data Export** option in the Create Connection dialog. This connector will be deprecated soon. Oracle recommends that you use Oracle EPM FCCS Integrator connector.
EPM Planning and Budgeting Data Export	This feature enables connecting to a EPM Export Data instance to bring data into Oracle Fusion Data Intelligence for data augmentation. See Load Data from EPM Export Data Instance into Fusion Data Intelligence (Preview). • **On** – Display the **EPM Planning and Budgeting Data Export** option in the Create Connection dialog. • **Off** – Hide the **EPM Planning and Budgeting Data Export** option in the Create Connection dialog. This connector will be deprecated soon. Oracle recommends that you use Oracle EPM Planning Integrator connector.
EPM Profitability and Cost Management Data Export	This feature enables connecting to an Oracle EPM instance to build a managed data pipeline with data from that instance. See Load Data from EPM Export Data Instance into Fusion Data Intelligence (Preview). • **On** – Display the **EPM Profitability and Cost Management Data Export** option in the Create Connection dialog. • **Off** – Hide the **EPM Profitability and Cost Management Data Export** option in the Create Connection dialog. This connector will be deprecated soon. Oracle recommends that you use Oracle Cloud EPM Profitability and Cost Management Integrator connector.
Fusion Augmentations	This feature enables the Fusion Augmentations source that you can use for data augmentations and frequent data refresh. After enabling this feature and after system initialization has completed, you can create data augmentations. See Perform Data Augmentations with Fusion Augmentations Source. • **On** – Display the **Fusion Augmentations** option in **Data Source** on the Data Configuration page. • **Off** – Hide the **Fusion Augmentations** option in **Data Source** on the Data Configuration page.
Fusion Supply Chain Planning	This features enables connecting to a Fusion Supply Chain Planning and create augmentations on that data. SeeLoad Data from Fusion Supply Chain Planning into Oracle Fusion Data Intelligence (Preview). • **On** – Display the **SCP** option in the Create Connection dialog. • **Off** – Hide the **SCP** option in the Create Connection dialog.

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Connector	Description
Oracle E-Business Suite On-Prem	This feature enables configuring a remote agent to load data from on-premises Oracle E-Business Suite (EBS) to build a managed data pipeline with data from that instance. See Load Data from On-premises E-Business Suite into Fusion Data Intelligence (Preview). • **On** – Display the **Oracle E-Business Suite On-Prem** option in the Create Connection dialog. • **Off** – Hide the **Oracle E-Business Suite On-Prem** option in the Create Connection dialog.
Oracle Eloqua	This feature enables connecting to an Oracle Eloqua instance to bring business relevant marketing and sales campaign data to build a managed data pipeline with data from that instance. See Connect with Your Oracle Eloqua Data Source (Preview). • **On** – Display the **Oracle Eloqua** option in the Create Connection dialog. • **Off** – Hide the **Oracle Eloqua** option in the Create Connection dialog.
Oracle EPM - Enterprise Data Management	This feature enables connecting to Oracle EPM instance and build a complete managed data pipeline with that data. See Load Data from Oracle Enterprise Performance Management into Fusion Data Intelligence (Preview). • **On** – Display the **Oracle EPM - Enterprise Data Management** option in the Create Connection dialog. • **Off** – Hide the **Oracle EPM - Enterprise Data Management** option in the Create Connection dialog.
Oracle EPM - Financial Close and Consolidation	This feature enables connecting to an Oracle EPM instance to build a managed data pipeline with data from that instance. See Load Data from Oracle Enterprise Performance Management into Fusion Data Intelligence (Preview). • **On** – Display the **Oracle EPM - Financial Close and Consolidation** option in the Create Connection dialog. • **Off** – Hide the **Oracle EPM - Financial Close and Consolidation** option in the Create Connection dialog.
Oracle EPM - Planning and Budgeting	This feature enables connecting to an Oracle EPM instance to build a managed data pipeline with data from that instance. See Load Data from Oracle Enterprise Performance Management into Fusion Data Intelligence (Preview). • **On** – Display the **Oracle EPM - Planning and Budgeting** option in the Create Connection dialog. • **Off** – Hide the **Oracle EPM - Planning and Budgeting** option in the Create Connection dialog.
Oracle EPM - Profitability and Cost Management	This feature enables connecting to an Oracle EPM instance to build a managed data pipeline with data from that instance. See Load Data from Oracle Enterprise Performance Management into Fusion Data Intelligence (Preview). • **On** – Display the **Oracle EPM - Profitability and Cost Management** option in the Create Connection dialog. • **Off** – Hide the **Oracle EPM - Profitability and Cost Management** option in the Create Connection dialog.

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Connector	Description
Oracle JD Edwards On-Prem	This feature enables connecting to various data sources in an on-premises Oracle JD Edwards instance to build a managed data pipeline with data from that instance. See Load Data from On-premises JD Edwards into Fusion Data Intelligence (Preview). • **On** – Display the **Oracle JD Edwards On-Prem** option in the Create Connection dialog. • **Off** – Hide the **Oracle JD Edwards On-Prem** option in the Create Connection dialog.
Oracle JDBC	This feature enables connecting Remote Agent managed connectivity to Oracle database using JDBC. You can create up to five connections and they're denoted as **Oracle JDBC 1**, **Oracle JDBC 2**, **Oracle JDBC 3**, **Oracle JDBC 4**, and **Oracle JDBC 5**. See Load Data from Oracle Database Using JDBC into Fusion Data Intelligence (Preview). • **On** – Display the Oracle JDBC option such as **Oracle JDBC 1** in the Create Connection dialog. • **Off** – Hide the Oracle JDBC option such as **Oracle JDBC 1** in the Create Connection dialog.
MongoDB	This feature enables connecting to MongoDB instance to build a managed data pipeline with data from that instance. See Load Data from MongoDB into Fusion Data Intelligence (Preview). • **On** – Display the **MongoDB** option in the Create Connection dialog. • **Off** – Hide the **MongoDB** option in the Create Connection dialog.
MySQL Cloud	This feature enables connecting to MySQL Cloud instance to build data augmentation with data from that instance. See Load Data from MySQL Cloud Database into Fusion Data Intelligence (Preview). • **On** – Display the **MySQL Cloud** option in the Create Connection dialog. • **Off** – Hide the **MySQL Cloud** option in the Create Connection dialog.
MySQL On-Prem	This feature enables connecting to MySQL On-Prem instance to build data augmentation with data from that instance. See Load Data from On-premises MySQL Database into Fusion Data Intelligence (Preview). • **On** – Display the **MySQL On-Prem** option in the Create Connection dialog. • **Off** – Hide the **MySQL On-Prem** option in the Create Connection dialog.
Oracle PeopleSoft On-Prem - Campus Solutions	This feature enables connecting to various data sources in an on-premises Oracle PeopleSoft instance to build a managed data pipeline with data from that instance. See Load Data from On-premises PeopleSoft into Fusion Data Intelligence (Preview). • **On** – Display the **Oracle PeopleSoft On-Prem - Campus Solutions** option in the Create Connection dialog. • **Off** – Hide the **Oracle PeopleSoft On-Prem - Campus Solutions** option in the Create Connection dialog.

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Connector	Description
Oracle PeopleSoft On-Prem - Financials	This feature enables connecting to various data sources in an on-premises Oracle PeopleSoft instance to build a managed data pipeline with data from that instance. See Load Data from On-premises PeopleSoft into Fusion Data Intelligence (Preview). • **On** – Display the **Oracle PeopleSoft On-Prem - Financials** option in the Create Connection dialog. • **Off** – Hide the **Oracle PeopleSoft On-Prem - Financials** option in the Create Connection dialog.
Oracle PeopleSoft On-Prem - Human Resources	This feature enables connecting to various data sources in an on-premises Oracle PeopleSoft instance to build a managed data pipeline with data from that instance. See Load Data from On-premises PeopleSoft into Fusion Data Intelligence (Preview). • **On** – Display the **Oracle PeopleSoft On-Prem - Human Resources** option in the Create Connection dialog. • **Off** – Hide the **Oracle PeopleSoft On-Prem - Human Resources** option in the Create Connection dialog.
Oracle PeopleSoft On-Prem - Learning Management	This feature enables connecting to various data sources in an on-premises Oracle PeopleSoft instance to build a managed data pipeline with data from that instance. See Load Data from On-premises PeopleSoft into Fusion Data Intelligence (Preview). • **On** – Display the **Oracle PeopleSoft On-Prem - Learning Management** option in the Create Connection dialog. • **Off** – Hide the **Oracle PeopleSoft On-Prem - Learning Management** option in the Create Connection dialog.
QuickBooks Online	This feature enables connecting to a QuickBooks instance to bring data into Oracle Fusion Data Intelligence for data augmentation. See Load Data from QuickBooks Online into Oracle Fusion Data Intelligence (Preview). • **On** – Display the **QuickBooks Online** option in the Create Connection dialog. • **Off** – Hide the **QuickBooks Online** option in the Create Connection dialog.
Remote Agent	This feature enables bringing data from on-premises applications like Oracle E-Business Suite and Oracle JD Edwards into Oracle Fusion Data Intelligence. See Set up the Remote Agent to Load Data into Fusion Data Intelligence (Preview). • **On** – Display the Remote Agent option in the Create Connection dialog. • **Off** – Hide the Remote Agent option in the Create Connection dialog.
Oracle Transportation Management	This feature enables connecting to an Oracle Transportation Management Cloud Service instance and creating augmentations using that data. See Load Data from Oracle Transportation Management Cloud Service into Oracle Fusion Data Intelligence (Preview). • **On** – Display the **Oracle Transportation Management** option in the Create Connection dialog. • **Off** – Hide the **Oracle Transportation Management** option in the Create Connection dialog.

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Connector	Description
Oracle Warehouse Management Cloud	This feature enables connecting to Oracle Warehouse Management System (WMS) Cloud service instance and creating augmentations using that data. See Load Data from Oracle Warehouse Management Cloud into Oracle Fusion Data Intelligence (Preview). • **On** – Display the **Warehouse Management Cloud** option in the Create Connection dialog. • **Off** – Hide the **Warehouse Management Cloud** option in the Create Connection dialog.
SFTP	This feature enables connecting to a Secure FTP source to build a managed data pipeline with data from that instance. See Load Data from an SFTP Source into Fusion Data Intelligence (Preview). • **On** – Display the SFTP option in the Create Connection dialog. • **Off** – Hide the SFTP option in the Create Connection dialog.
Snowflake	This feature enables connecting to a Snowflake instance to bring data into Oracle Fusion Data Intelligence for data augmentation. See Load Data from Snowflake into Oracle Fusion Data Intelligence (Preview). • **On** – Display the **Snowflake** option in the Create Connection dialog. • **Off** – Hide the **Snowflake** option in the Create Connection dialog.
SQL Server	This feature enables connecting to a SQL Server instance to bring data into Oracle Fusion Data Intelligence for data augmentation. See Load Data from SQL Server into Oracle Fusion Data Intelligence (Preview). • **On** – Display the **SQL Server** option in the Create Connection dialog. • **Off** – Hide the **SQL Server** option in the Create Connection dialog.
Taleo	This feature enables connecting to a Taleo instance to bring data into Oracle Fusion Data Intelligence for data augmentation. See Load Data from Taleo into Fusion Data Intelligence (Preview). • **On** – Display the **Taleo** option in the Create Connection dialog. • **Off** – Hide the **Taleo** option in the Create Connection dialog.

Data Connectors Available as Generally Available (Opt-in) Features

Generally available features are disabled by default but the administrators can make these features available for use; see Enable Generally Available Features.

Connector	Description
Oracle Analytics Publisher	This feature enables connecting to an Oracle Analytics Publisher instance to bring data into Oracle Fusion Data Intelligence for data augmentation. See Load Data from Oracle Analytics Publisher into Fusion Data Intelligence. • **On** – Display the **Oracle Analytics Publisher** option in the Create Connection dialog. • **Off** – Hide the **Oracle Analytics Publisher** option in the Create Connection dialog.

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Connector	Description
Shopify	This feature enables connecting to a Shopify instance to build a managed data pipeline with data from that instance. See Load Data from Shopify into Fusion Data Intelligence. • **On** – Display the Shopify option in the Create Connection dialog. • **Off** – Hide the Shopify option in the Create Connection dialog.

Data Connectors Available By Default

Connector	Description
Google Analytics	This feature enables connecting to a Google Analytics instance and building a complete managed data pipeline with that data. See Load Data from Google Analytics into Oracle Fusion Data Intelligence.
Oracle Object Storage Service	This feature enables connecting to Oracle Object Storage to ingest datasets into Oracle Fusion Data Intelligence followed by data augmentation. See Load Data from Oracle Object Storage Service into Fusion Data Intelligence.
Salesforce	This feature enables connecting to a Salesforce SaaS source and build a complete managed data pipeline with that data. See Load Data from Salesforce into Fusion Data Intelligence.

Region Availability

Oracle Fusion Data Intelligence is available in the following regions currently:

Commercial

Region Location	Region Name	Region Key
Abu Dhabi, UAE	me-abudhabi-1	AUH
Amsterdam, Netherlands	eu-amsterdam-1	AMS
Ashburn, VA	us-ashburn-1	IAD
Dubai, UAE	me-dubai-1	DXB
Frankfurt, Germany	eu-frankfurt-1	FRA
Hyderabad, India	ap-hyderabad-1	HYD
Jeddah, Saudi Arabia	me-jeddah-1	JED
London, United Kingdom	uk-london-1	LHR
Melbourne, Australia	ap-melbourne-1	MEL
Milan, Italy	eu-milan-1	LIN
Monterrey, Mexico	mx-monterrey-1	MTY
Montreal, Canada	ca-montreal-1	YUL
Morocco, North Africa	af-casablanca-1	LEJ
Mumbai, India	ap-mumbai-1	BOM
Newport, United Kingdom	uk-cardiff-1	CWL
Osaka, Japan	ap-osaka-1	KIX
Phoenix, AZ	us-phoenix-1	PHX

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Region Location	Region Name	Region Key
Riyadh, Saudi Arabia	me-riyadh-1	RUH
Santiago, Chile	sa-santiago-1	SCL
Sao Paulo, Brazil	sa-saopaulo-1	GRU
Singapore, Singapore	ap-singapore-1	SIN
Singapore West, Singapore	ap-singapore-2	XSP
Stockholm, Sweden	eu-stockholm-1	ARN
Sydney, Australia	ap-sydney-1	SYD
Tokyo, Japan	ap-tokyo-1	NRT
Toronto, Canada	ca-toronto-1	YYZ
Vinhedo, Brazil	sa-vinhedo-1	VCP
Zurich, Switzerland	eu-zurich-1	ZRH

Government

Region Location	Region Name	Region Key
UK Gov South (London), United Kingdom	uk-gov-london-1	LTN
UK Gov West (Newport), United Kingdom	uk-gov-cardiff-1	BRS
US Gov East (Ashburn), United States	us-langley-1	LFI
US Gov West (Phoenix), United States	us-luke-1	LUF
US DoD East (Ashburn), United States	us-gov-ashburn-1	RIC
US DoD West (Phoenix), United States	us-gov-phoenix-1	TUS

EU Sovereign

Region Location	Region Name	Region Key
Frankfurt, Germany	eu-frankfurt-2	STR
Madrid, Spain	eu-madrid-2	VLL

About Oracle Fusion Data Intelligence on Government Cloud

Oracle Fusion Data Intelligence is available on Oracle Cloud Infrastructure in several government regions.

Government Cloud customers can use Oracle Fusion Data Intelligence to explore and perform collaborative analytics for data preparation, visualization, enterprise reporting, and augmented analysis for their organization. However, for you to securely run your workloads, you must be aware of your security and compliance responsibilities.

Before you start with Oracle Fusion Data Intelligence, take some time to familiarize yourself with some general information that applies to all cloud services available on Oracle Cloud Infrastructure.

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- US Government Cloud: See For All Oracle US Government Cloud Customers
- UK Government Cloud: See Oracle UK Sovereign Cloud

Billing Metrics of Autonomous AI Lakehouse Associated with Oracle Fusion Data Intelligence

Oracle Autonomous AI Database introduced the ECPU billing metric and is now retiring the legacy OCPU billing metric for Oracle Autonomous AI Lakehouse.

ECPUs provide the same price-performance as OCPUs with continuous improvements over time. Updating to the ECPU and storage billing metrics provides the following additional benefits:

- Lower entry cost.
- Finer granularity for scaling the data warehouse.
- Lower storage costs.

Refer to the ECPU billing metric FAQ for more details about ECPUs and associated benefits.

Using ECPU impacts your service in the following ways:

- When you sign into Oracle Autonomous AI Lakehouse from the Oracle Cloud Infrastructure Console, you'll see the provisioned capacity stated in ECPUs.
- If you scale up your Oracle Autonomous AI Lakehouse, you'll be billed against the replacement ECPU billing metrics based on your rate card for Oracle Cloud Infrastructure billing.
- All database tools will be turned off by default. If you've already been using any of these tools such as APEX, then no data loss occurs when they're turned off. You can turn them on from the Oracle Autonomous AI Lakehouse Oracle Cloud Infrastructure Console. If you wish to use database tools such as Oracle Machine Learning (OML), Graph Studio, or Data Transforms, then you must allocate dedicated ECPUs that'll consume credits against your Universal Credits (UCC) subscription. For more information, see Manage Autonomous Database Built-in Tools.

Reach out to your Oracle contact and review the Universal Credits (UCC) subscription agreement and make sure you understand the ECPU billing metric. If you have general questions about preparing for this change, contact your Oracle account team, connect through Fusion Data Intelligence customer forum, or create a service request (SR) on My Oracle Support.

Oracle Fusion Data Intelligence Security Considerations

Use this checklist to ensure comprehensive security for your Oracle Fusion Data Intelligence instances.

Topics:

- Security Setup Tasks
- Oracle Identity Cloud Service Access Management Tasks
- Semantic Model Extensions Security Tasks
- Data Augmentation Security Tasks
- Oracle Fusion Data Intelligence Security Tasks

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- Audit Security Tasks
- Oracle Analytics Cloud Security Tasks
- Oracle Autonomous AI Lakehouse Security Tasks

Security Setup Tasks

Integrate your Oracle Fusion Data Intelligence instance to streamline identity management across users, groups, and roles. Control network exposure using a private endpoint and enhance security by enforcing access control lists and configuring Single Sign-On (SSO).

Task	Description	More Information
Integrate Instance	Create an Integrated Oracle Fusion Data Intelligence Instance.	Create an Integrated Oracle Fusion Data Intelligence Instance
Configure Single Sign-On	Set up user access to Oracle Fusion Data Intelligence using Single Sign-On.	Set Up User Access to Oracle Fusion Data Intelligence Using Single Sign-On
Configure Private Endpoint	Deploy Oracle Fusion Data Intelligence with a private endpoint.	Deploy Oracle Fusion Data Intelligence with a Private Endpoint
Configure Access Control List	Manage requests to access the Oracle Fusion Data Intelligence resources directly from the internet.	Configure the Access Control List

Oracle Identity Cloud Service Access Management Tasks

Efficiently manage user access within Oracle Fusion Data Intelligence by leveraging Oracle Identity Cloud Service to configure users through automatic synchronization from Oracle Fusion Cloud Applications, manual creation, or importing from external systems.

After users are configured, define and manage user access permissions by creating specific Oracle Fusion Data Intelligence groups. See About Managing Users, Groups, Application Roles, and Data Access.

Task	Description	More Information
Create Users	Create or synchronize users.	About Users
Create Groups	Create or synchronize groups.	About Groups

Oracle Fusion Data Intelligence Security Tasks

Create custom application roles in Oracle Fusion Data Intelligence when the predefined roles don't meet your business requirements.

Custom application roles provide flexible and precise data security tailored to your organization’s requirements. You can secure subject areas, objects, and data at a granular level by creating duty roles and data roles, mapping roles to user groups, and applying custom security contexts. Administrators can tailor data access rules, manage user assignments, and ensure that the security configurations are published and are in effect.

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Task	Description	More Information
Create Custom Application Duty Roles	Create or use existing duty roles.	• Create an Application Role
Map Duty Roles	Assign groups to duty roles.	• Assign Groups to Application Roles
Create Custom Application Data Roles	Create or use existing data roles.	• Create an Application Role
Configure Security Context on Data Role	Define and group objects to secure data.	• Define and Assign Custom Security Contexts
Map Data Roles	Assign groups to data roles.	• Assign Groups to Application Roles
Configure Security Assignments	Create users, manage users, define rules and exclusions, and automate security assignments.	• Create a Security Assignment • Manage Users for a Security Assignment • Set Exclusion Rules for Security Assignments • Update Security Assignments Automatically
Specify Data Access Rules	Override prebuilt data roles.	• Specify Data Access Rules
Map Licensed Groups	Assign users to licensed groups.	• Licensed Roles

Semantic Model Extensions Security Tasks

Manage user's access to subject areas and subject area elements in Oracle Fusion Data Intelligence by configuring object permissions and assigning the permissions to ready-to-use or custom duty roles.

Task	Description	More Information
Configure Object Permissions	Secure subject areas and related elements.	Configure Object Permissions

Data Augmentation Security Tasks

Use Remote Agent to securely load on-premises data into Oracle Fusion Data Intelligence. Extract data from systems like E-Business Suite, PeopleSoft, and JD Edwards and load the extracted data in Oracle Autonomous AI Lakehouse ensuring secure data handling.

Task	Description	More Information
Connect to On-premises data sources.	Securely augment your data using a Remote Agent.	Connect With On-premises Sources

Oracle Fusion Data Intelligence Security Automation Tasks

Automate role-based access control by mapping specific data security privileges to corresponding business units through defined security contexts and organizational data security policies, ensuring continuous compliance and data integrity.

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Task	Description	More Information
Apply Existing Fusion Security Assignments	Apply existing security assignments within Oracle Fusion Data Intelligence for pillars other than Oracle Cloud HCM.	Apply Existing Fusion Security Assignments
Add Application Roles to a Group	Map application roles with the predefined and custom groups.	Add Application Roles to a Group
Download and Upload Data Security Exclusion Rules	Upload the mapping for the Oracle Fusion Cloud Applications job role to the Oracle Fusion Data Intelligence data role using the Upload Center.	Download and Upload Data Security Exclusion Rules
Upload Security Files	Map custom roles, security assignments, and exclusions.	Manage Uploads and Downloads
Automate Security Assignments	Automate creation and deletion of security assignments.	Update Security Assignments Automatically
Map Job Roles	Look up role mapping tables for the functional area (pillar).	• ERP Job Role Mappings • SCM Job Role Mappings • CX Job Role Mappings
Synchronize data security from Oracle Fusion Cloud Applications with Oracle Fusion Data Intelligence (for ERP, SCM, and CX).	Create a pipeline for the "Security Configuration Option" functional area for the respective pillar.	• How do I synchronize data security from Oracle Fusion Cloud Applications (ERP) with Fusion Data Intelligence? • How do I synchronize data security from Oracle Fusion Cloud Applications (SCM) with Fusion Data Intelligence? • How do I synchronize data security from Fusion Sales Cloud (Cloud CX) with Fusion Data Intelligence?
Secure Oracle Fusion HCM Analytics	Secure HCM Subject Areas and related elements.	• HCM Data Roles • HCM Duty Roles

Audit Security Tasks

Use the Security Audit History subject area to track and report on the changes to user and group assignments, role creations, and security context memberships. This helps to detect unauthorized access or changes by providing an auditable record of all critical security-related activities.

Task	Description	More Information
Analyze security subject areas and prebuilt content.	Review security assignments and changes made within the security user interface.	• Security Assignment • Security Audit History

Oracle Analytics Cloud Security Tasks

Control access and ensure governance of your sensitive analytics content and confidently manage data security when analyzing on-premises data in Oracle Analytics Cloud.

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Task	Description	More Information
Secure Oracle Analytics Cloud folders and workbooks.	Secure the Oracle Analytics Cloud catalog folder and workbook permissions.	Assign Shared Catalog Folder and Workbook Permissions
Connect to on-premises data sources.	Securely connect to Oracle Analytics Cloud with Private Access Channel or Data Gateway.	Connect to On-premises Data Sources

Oracle Autonomous AI Lakehouse Security Tasks

Strengthen your security posture with Oracle Autonomous AI Database, which provides protection through features such as automatic data encryption, strictly enforced authentication for all access, and advanced tools such as Data Safe and wallet rotation to secure the credentials.

Task	Description	More Information
Use Data Safe	Configure Data Safe to manage the Oracle Autonomous AI Lakehouse security.	Secure Autonomous AI Lakehouse Associated with Fusion Data Intelligence Using Data Safe
Rotate Wallets	Rotate Wallets for Autonomous AI Database	• Configure the Wallet Rotation Frequency for the Oracle Autonomous AI Lakehouse. • Rotate Wallets for Autonomous AI Database
Secure Oracle Autonomous AI Lakehouse.	Secure database access to authenticated users and applications.	Secure Oracle Autonomous Database Warehouse

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2

Activate Oracle Fusion Data Intelligence

As the cloud account administrator, activate the subscription for Oracle Fusion Data Intelligence to get started with the service.

Topics:

- Before You Begin with Oracle Fusion Data Intelligence
- Typical Workflow to Activate Oracle Fusion Data Intelligence
- Typical Workflow to Administer Oracle Fusion Data Intelligence

Before You Begin with Oracle Fusion Data Intelligence

Oracle Fusion Data Intelligence is available on Oracle Cloud Infrastructure and uses a few other Oracle Cloud Infrastructure services.

When you order Oracle Fusion Data Intelligence, you get access to Oracle Autonomous AI Lakehouse and an Oracle Analytics Cloud Subscription.

When you activate your Oracle Fusion Data Intelligence order, you get the Service Administrator role. This role gives you full administration privileges on the service, so you can complete all aspects of Oracle Fusion Data Intelligence setup and create other users. There's no need to delegate this responsibility, but if you want someone else to set up Oracle Fusion Data Intelligence, you can add more users and assign them to the required roles.

Here's the information about how Oracle Fusion Data Intelligence uses other Oracle Cloud Infrastructure services and what you need to do if you're setting up Oracle Fusion Data Intelligence for the first time.

Service	Purpose	Action
Identity domains from Oracle Cloud Infrastructure Identity and Access Management	When you subscribe to Oracle Fusion Data Intelligence, you automatically receive identity domains that provide the core identity and access management capabilities. Oracle Fusion Data Intelligence uses identity domains for authentication, single sign-on (SSO), and identity lifecycle management.	As a security administrator, you can perform user-group management in the identity domains. See IAM with Identity Domains.
Oracle Autonomous AI Lakehouse	Oracle Fusion Data Intelligence uses Oracle Autonomous AI Lakehouse to store the data extracted from the Oracle Fusion Cloud Applications sources.	Provide the autonomous data warehouse details while creating a service instance for Oracle Fusion Data Intelligence. See Create an Integrated Oracle Fusion Data Intelligence Instance .
Oracle Analytics Cloud	Oracle Fusion Data Intelligence uses Oracle Analytics Cloud to analyze data, create visualizations, and generate reports from the Oracle Fusion Cloud Applications data stored in Oracle Autonomous AI Lakehouse.	No

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Typical Workflow to Activate Oracle Fusion Data Intelligence

You're now on step 2 of the required steps to getting up and running with Oracle Fusion Data Intelligence. You've completed step 1 of these required steps and are ready to activate the Oracle Fusion Data Intelligence subscription to start using the service:

1. Order your Oracle Fusion Data Intelligence subscription through your sales representative.
2. Activate your Oracle Fusion Data Intelligence subscription.
3. Set up user access using single sign-on. See Set Up User Access to Oracle Fusion Data Intelligence Using Single Sign-On .
4. Create your Oracle Fusion Data Intelligence instance. Oracle highly recommends that you create an Oracle Fusion Data Intelligence instance integrated with your Oracle Fusion Cloud Applications instance. See Create an Integrated Oracle Fusion Data Intelligence Instance .
5. Configure Oracle Fusion Data Intelligence. See Configure Oracle Fusion Data Intelligence Data.

To activate Oracle Fusion Data Intelligence, follow these tasks as a guide.

Task	Description	More Information
Review the subscription confirmation email	After processing your Oracle Fusion Data Intelligence subscription, Oracle confirms your subscription through an email. Review the email to ensure the subscriptions match your order.	Activate the Universal Credits Subscription
Activate the Oracle Fusion Data Intelligence subscription.	After your order for the Oracle Fusion Data Intelligence subscription has been processed, you receive a Welcome email asking you to activate your Oracle Fusion Data Intelligence subscription. Use your Oracle Fusion Cloud Applications credentials to sign into your cloud account. Upon signing in, you're taken to the Add Subscription page in the Oracle Cloud Infrastructure Console where you'll add the Oracle Fusion Data Intelligence subscription to the cloud account.	Activate the Oracle Fusion Data Intelligence Subscription
Review the activation confirmation email	After successfully activating your Oracle Fusion Data Intelligence subscription, Oracle confirms the activation through an email.	Not applicable

About Activating Your Oracle Fusion Data Intelligence Subscription

After Oracle processes your subscription, you receive a Welcome email confirming your subscription.

In the body of this Welcome email for your Oracle Fusion Data Intelligence subscription, the name of the service is "Oracle Fusion <pillar-name> Analytics," where <pillar-name> represents the Oracle Fusion Data Intelligence application you subscribed to such as Fusion HCM Analytics and Fusion ERP Analytics.

To start using Oracle Fusion Data Intelligence, you must activate your subscription. You can activate multiple Oracle Fusion Data Intelligence subscriptions in a single tenancy, but you can’t split one subscription and activate the split parts into multiple tenancies. You can create multiple development, test, and production instances in one tenancy using the multiple subscription IDs. However, note that you can create one instance per one subscription; you

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can’t split a subscription and provision the split parts across instances. If a subscription has expired and you bought a new one to replace it, then at the time of updating the offering, you can update that instance to use the new subscription ID.

On receiving the Welcome email, follow these steps:

1. Review the Important – Read Before Activating section.
2. Write down the name of your Oracle Fusion Cloud Applications account or tenancy.

> **Note**
>
> A Cloud account is also known as a tenancy.

3. Ensure that you're a cloud administrator in your Oracle Fusion Cloud Applications account and have been granted the OCI_Administrator role or added to the Administrators group, whichever is available. See the Role Needed to Activate section.
4. Use your Oracle Fusion Cloud Applications credentials to sign into your cloud account.
5. Activate the Oracle Fusion Data Intelligence subscription into the same existing Oracle Fusion Cloud Applications account.
   - Wait until you receive a confirmation email from Oracle Cloud stating that your services are ready before signing back into your Oracle Fusion Cloud Applications account and verifying that your Oracle Fusion Data Intelligence entitlements appear and that the "Create Instance" button is enabled.
   - It's also feasible to activate your Oracle Fusion Data Intelligence subscription into a non-Oracle Fusion Cloud Applications account but this is discouraged. See Important – Read Before Activating for further details.

Important – Read Before Activating

- *Best practice* is to always activate Oracle Fusion Data Intelligence into your Oracle Fusion Cloud Applications account. Doing so saves you time, cost, and complexity when setting up your security integration between Oracle Fusion Data Intelligence and your Oracle Fusion Cloud Applications, as well as improved ongoing synchronization performance.
- Activating the Oracle Fusion Data Intelligence subscription into a non-Oracle Fusion Cloud Applications account goes against best practices. It will cost you additional time, money, and complexity when setting up your security integration between Oracle Fusion Data Intelligence and your Oracle Fusion Cloud Applications, and reduced performance in its ongoing synchronization.
- From Release Platform 25.R1.P2, Universal Credits (UCC) are no longer a prerequisite for activating Oracle Fusion Data Intelligence. You can activate Oracle Fusion Data Intelligence without relying on UCC. However, you may require UCC in specific scenarios to access or scale Oracle Cloud Infrastructure services that support Oracle Fusion Data Intelligence and for enhanced performance. Ensure that you have an UCC subscription in these scenarios to pay for additional charges:
  - When you want to add OCPUs in the associated Oracle Analytics Cloud for enhanced processing power and analytics. Use the **Change Capacity** capability to increase the OCPU count. See Change Oracle Analytics Cloud Capacity.
  - When you want to add ECPUs in the associated Oracle Autonomous AI Lakehouse for compute resources and increase storage capacity for long-term backups and database tools. Use the **Manage Scaling** capability. See Scale Up Oracle Autonomous Data Warehouse.

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  - If you plan on extending Oracle Fusion Data Intelligence with more than 50GB of non-Oracle Fusion Cloud Applications data.
  - When you want to use these additional Oracle Cloud Infrastructure services:
    * Key Management - for example, if you opt for customer-managed encryption keys, you need to use Oracle Key Management and you can use universal credits to pay for:
      * Additional key versions beyond the first free 20 key versions
      * Key creation and storage
      * Key rotation and API requests
    * AI/ML Services for advanced analytics and automation.
    * Object Storage Service (OSS) for scalable data storage.

- For the specific scenarios that may require universal credits, note these:
  - If an UCC subscription exists in your Oracle Fusion Cloud Applications account, then you don't need another UCC subscription.
  - Activate a new UCC subscription in your Oracle Fusion Cloud Applications account. See Activate the Universal Credits Subscription.
  - UCC Pay As You Go (PAYG) subscriptions expire within 30 days of receiving the UCC Welcome email. It's very important that you activate UCC into your Oracle Fusion Cloud Applications account within 30 days of receiving it. If the UCC PAYG subscription expires, then UCC activation will fail and you'll need to submit a service request.

Role Needed to Activate

You must be a cloud administrator with the OCI_Administrator role or be in the OCI_Administrators group for the Oracle Cloud account that you're trying to activate your subscriptions into to activate successfully both UCC and Oracle Fusion Data Intelligence subscriptions. If you aren't a cloud administrator with this role, then follow either of these options:

1. Ask the current cloud administrator of the cloud account to add you as a cloud administrator and assign the OCI_Administrator role or add you to the Administrators group before you try to activate. However, be mindful of your account's location when asking:
   - If you've an account in an Oracle Cloud Infrastructure Identity and Access Management default or local domain, then a user with the Oracle Cloud Infrastructure administrator privileges needs to add you to the Administrators group.

     > **Note**
     >
     > The prebuilt read-only Tenant Admin Policy grants administration privileges to the prebuilt Administrators group.

   - If you've an account in an Oracle Identity Cloud Service stripe, then a user with the Oracle Cloud Infrastructure administrator privileges needs to ensure that the Oracle Identity Cloud Service OCI_Administrators group is mapped to the Identity and Access Management Administrators group, and then add you to the Oracle Identity Cloud Service OCI_Administrators group.

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> **Note**
>
> The prebuilt OCI_Administrators group in an Oracle Identity Cloud Service stripe is mapped to the Administrators group in the Identity and Access Management local domain.

- If you've an account in a migrated Oracle Identity Cloud Service identity domain, then a user with the Oracle Cloud Infrastructure administrator privileges needs to add you to the OCI_Administrators group and create the following policy rule:

  ```
  Allow Group OracleIdentityCloudService/OCI_Administrators to Manage All-
  Resources in Tenancy
  ```

> **Note**
>
> A migrated OCI_Administrators group doesn't have administrative privileges immediately after a migration.

- If you've an account in any other identity domain, then a user with the Oracle Cloud Infrastructure administrator privileges needs to add you to the Domain_Administrators group and create the following policy rule:

  ```
  Allow Group <Name of Domain>/Domain_Administrators to Manage All-
  Resources in Tenancy
  ```

2. Forward the activation emails to a person who has the OCI_Administrator role or is in the Administrators group and have them follow the activation instructions.

Note these:

- If this Oracle Cloud account uses identity domains, then see the *Creating Users* section in Using the Console to create a user and assign the OCI_Administrators or Administrators group, whichever is available.
  To add this group to an existing user in an identity domain, see the *Adding Users to Groups* section in Using the Console.
- If this Oracle Cloud account uses Oracle Identity Cloud Service to manage users, then see Create User Accounts to create a user and assign the OCI_Administrator role or Administrators group, whichever is available.
  To add this group to an existing user in Oracle Identity Cloud Service, see Assign Groups to the User Account.
- To know if your tenancy uses identity domains or Oracle Identity Cloud Service, see Do You Have Access to Identity Domains?

Activate the Oracle Fusion Data Intelligence Subscription

Activate your Oracle Fusion Data Intelligence subscription into the Oracle Cloud account where you've Oracle Fusion Cloud Applications.

After Oracle processes your subscription order, you receive an email asking you to activate the subscription. As part of the activation process, you sign into the Cloud account that has your Oracle Fusion Cloud Applications already in it. Upon signing in, you're taken to the Add Subscription page in the Oracle Cloud Infrastructure Console where you'll add the Oracle Fusion Data Intelligence subscription to the Cloud account.

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> **Note**
>
> Your subscriptions are linked and activated into the home region of your tenancy. After activating a subscription, you can create the Oracle Fusion Data Intelligence instance in the regions where Oracle Fusion Data Intelligence is available and you have subscribed for such regions. Use the Manage Regions option in the Oracle Cloud Infrastructure Console to subscribe for a region. See Region Availability and Managing Regions.

After you add the Oracle Fusion Data Intelligence subscription, it can take up to an hour for the activation process to complete. You'll receive another email confirming that your subscription is ready. Don't proceed to the next step until you've received this email.

1. Locate your Oracle Fusion Data Intelligence Welcome email that you received from Oracle Cloud.

   > **Note**
   >
   > The name of the service in the body of this Welcome email is "Oracle Fusion XXX Analytics…" where XXX represents the pillars you subscribed to, such as Fusion HCM Analytics and Fusion ERP Analytics.

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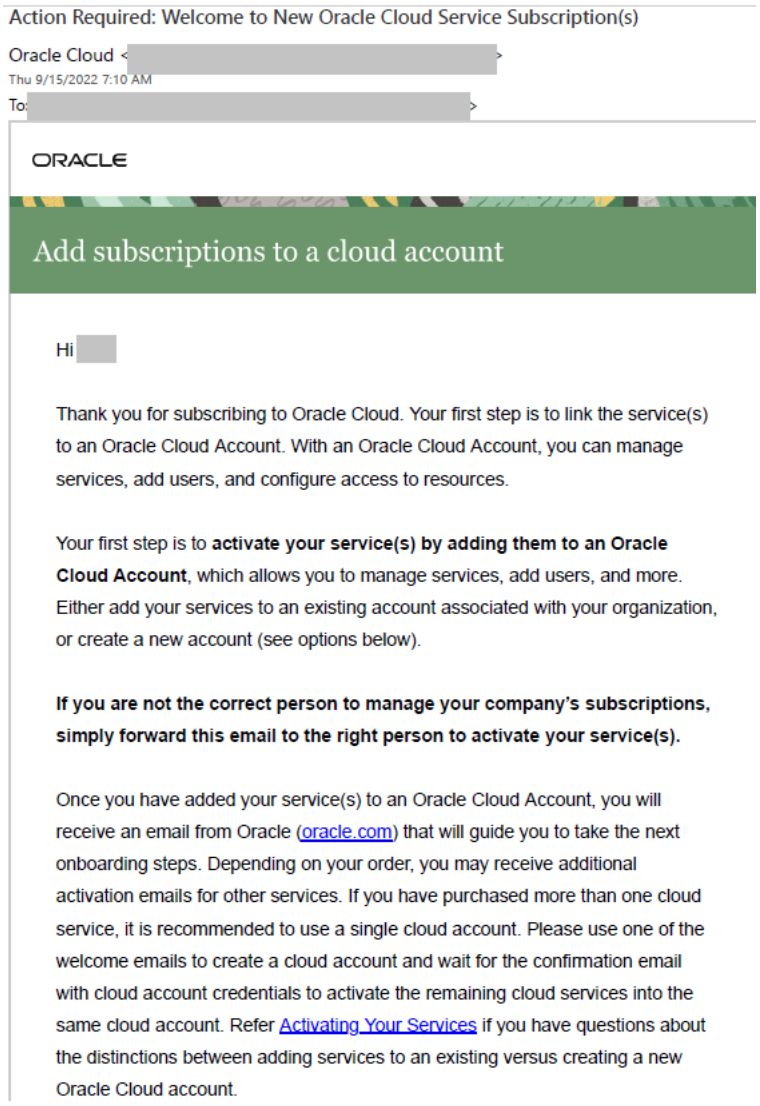
Action Required: Welcome to New Oracle Cloud Service Subscription(s)

Oracle Cloud <[redacted]>
Thu 9/15/2022 7:10 AM
To: [redacted]

ORACLE

Add subscriptions to a cloud account

Hi [redacted]

Thank you for subscribing to Oracle Cloud. Your first step is to link the service(s) to an Oracle Cloud Account. With an Oracle Cloud Account, you can manage services, add users, and configure access to resources.

Your first step is to **activate your service(s) by adding them to an Oracle Cloud Account**, which allows you to manage services, add users, and more. Either add your services to an existing account associated with your organization, or create a new account (see options below).

If you are not the correct person to manage your company's subscriptions, simply forward this email to the right person to activate your service(s).

Once you have added your service(s) to an Oracle Cloud Account, you will receive an email from Oracle (oracle.com) that will guide you to take the next onboarding steps. Depending on your order, you may receive additional activation emails for other services. If you have purchased more than one cloud service, it is recommended to use a single cloud account. Please use one of the welcome emails to create a cloud account and wait for the confirmation email with cloud account credentials to activate the remaining cloud services into the same cloud account. Refer Activating Your Services if you have questions about the distinctions between adding services to an existing versus creating a new Oracle Cloud account.

2. In the email, click **Add to existing cloud account**.

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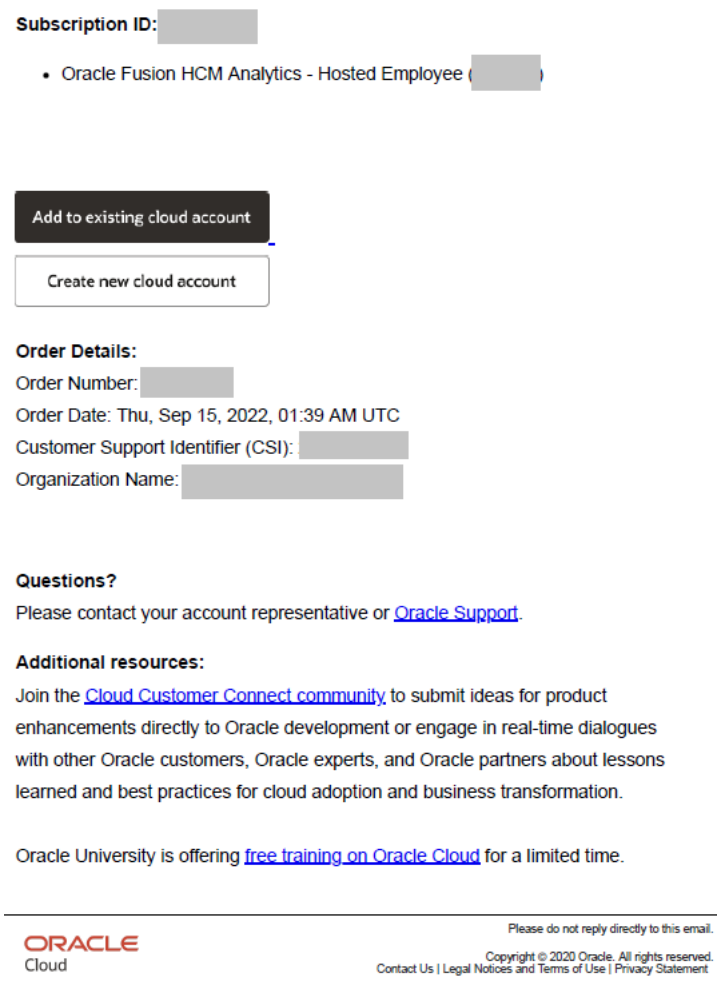
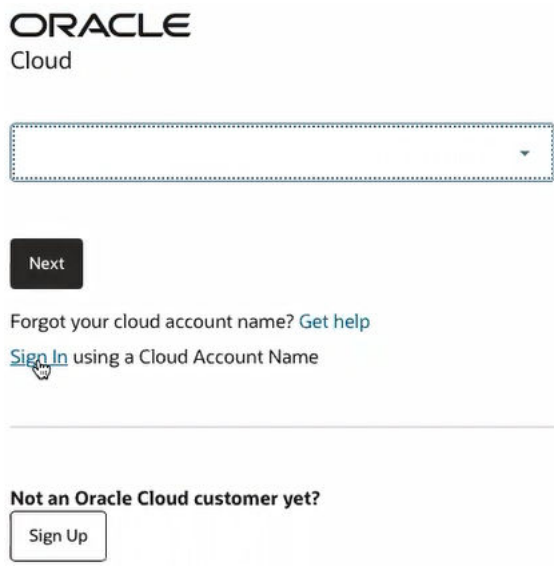


3. On the Oracle Cloud page, click **Sign In using a Cloud Account Name**.



4. In **Cloud Account Name**, enter the tenancy name of the existing Oracle Cloud account that has Oracle Fusion Cloud Applications and then click **Next**.

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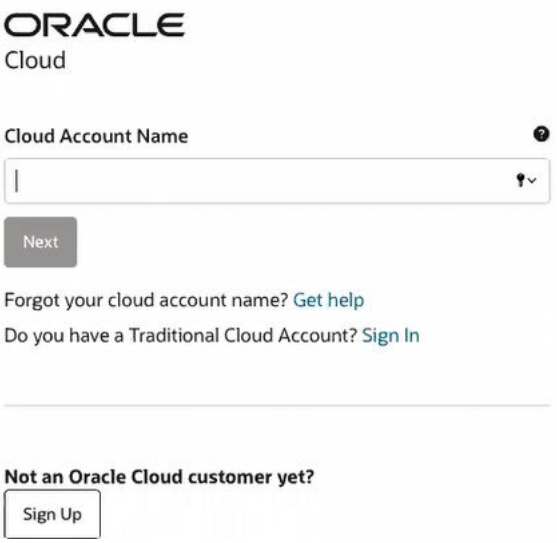
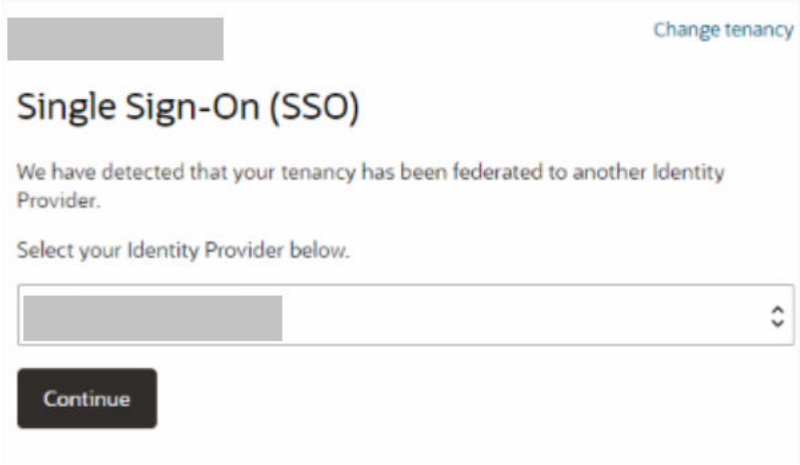


If you don't see your existing Oracle Cloud account that has Oracle Fusion Cloud Applications in it, stop and submit a service request against Oracle Fusion Data Intelligence in My Oracle Support so that it gets routed to the correct team. For this service request, select **Significant Impairment** as **Issue Type** and in **Problem Type**, click **Activate, Create, Delete, Manage FDI Instance** and then select **FDI Activation**. Ensure that you include the account name you're trying to activate into along with a screenshot showing that you've been assigned this role in that Cloud account.

5. On the Oracle Cloud Account Sign In page, sign in as follows:

   - If the tenancy is set up with single sign-on, then in the Single Sign-On (SSO) section, select the applicable identity provider and click **Continue** to display the sign-in details.



   In the Oracle Cloud Account sign-in details, verify that the tenancy name is your Oracle Fusion Cloud Applications account, enter your credentials, and then click **Sign In** that takes you to the Add Subscription page in Oracle Cloud Infrastructure.

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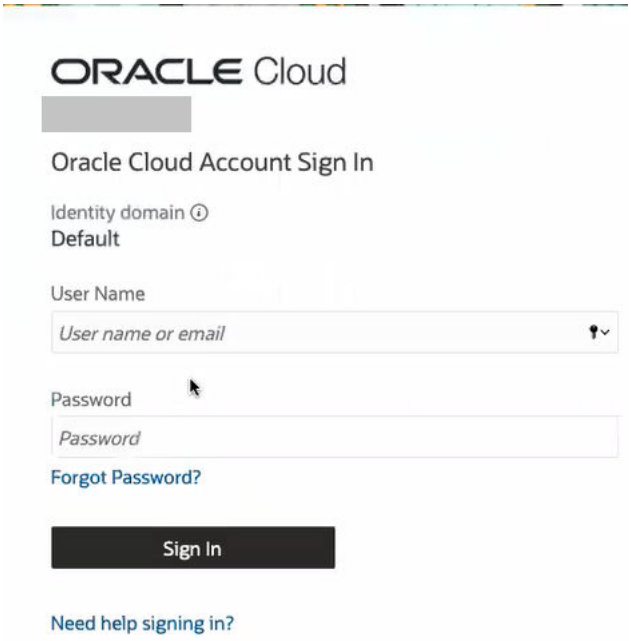
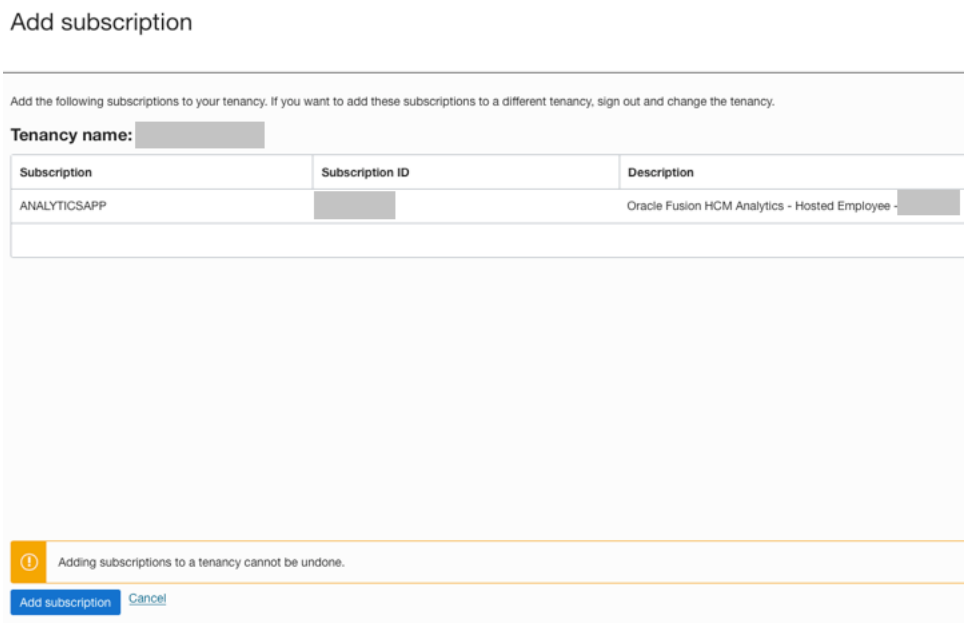


- If the tenancy isn't set up with single sign-on, then in the Oracle Cloud Account sign-in details, verify that the tenancy name is your Oracle Fusion Cloud Applications account, enter your credentials, and then click **Sign In** which takes you to the Add Subscription page in Oracle Cloud Infrastructure.

6. On the Add subscription page, click the applicable row to select the subscription that matches the subscription listed in the activation email, and then click **Add subscription**.



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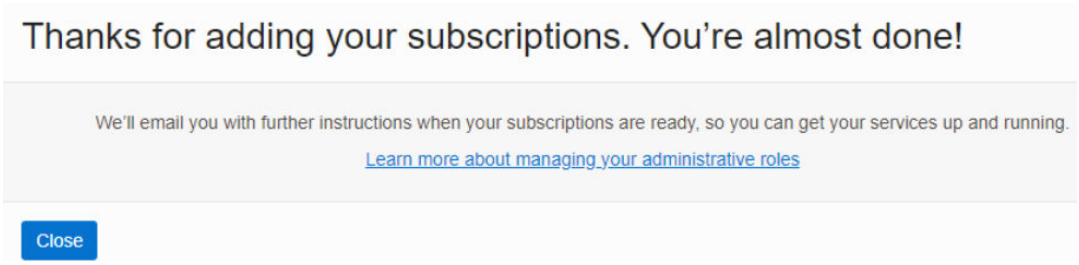
> **Note**
>
> Stop here if you don't see the subscription that you wish to activate.
>
> - It likely means that you don't have the OCI_Administrator role or Administrators group (whichever is available) assigned to you. You must contact your cloud account administrator.
> - If you've been assigned the OCI_Administrator role or are part of the Administrators group, then enter a service request against "Fusion Data Intelligence" in My Oracle Support so that it gets routed to the correct team. For this service request, select **Significant Impairment** as **Issue Type** and in **Problem Type**, click **Activate, Create, Delete, Manage FDI Instance** and then select **FDI Activation**. Ensure that you include the account name you're trying to activate into along with a screenshot showing that you've been assigned this role in that Cloud account.

7. In the **Thanks for adding your subscriptions** message, click **Close**.



Watch for an email within 60 minutes with the subject "Your services are ready!"

8. Open the email that you received from Oracle Cloud stating that your services are ready and click **Sign in**. Use your Cloud account credentials.

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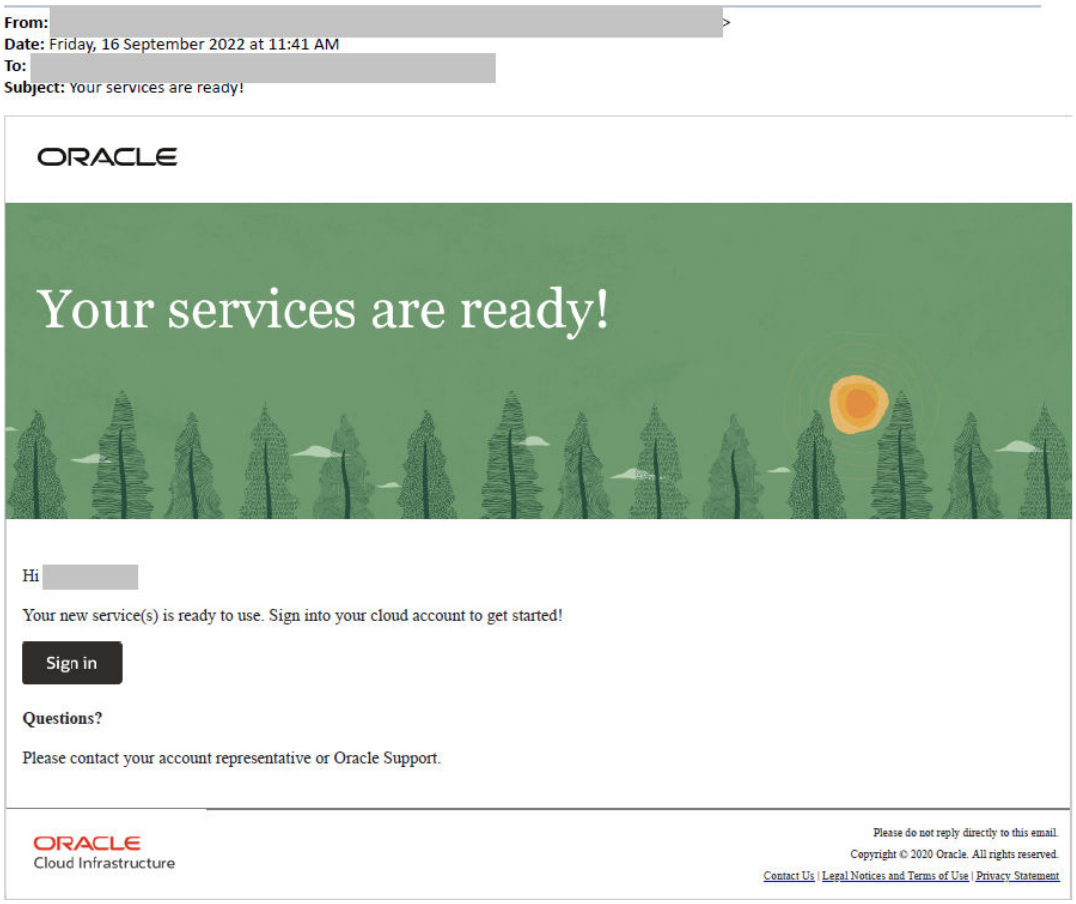
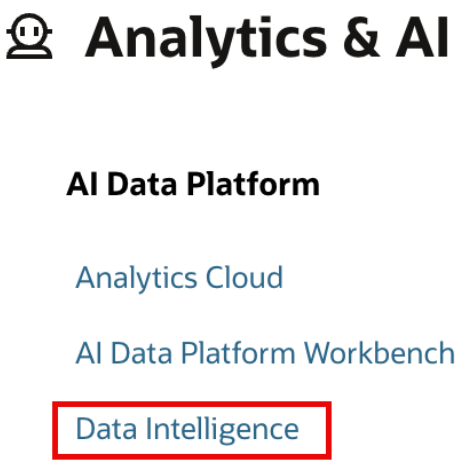


9. In Oracle Cloud Infrastructure Console, click the Navigator menu icon, click **Analytics & AI**, and then under Analytics & AI, click **Data Intelligence**.



10. On the Fusion Data Intelligence Instances page, verify that the subscriptions listed in the Compartment banner match your Oracle Fusion Data Intelligence order and the **Create Instance** button is enabled.

    Before you click the **Create Instance** button, ensure the following:

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- You have the User Administrator permission in the domains that you plan to create the Oracle Fusion Data Intelligence instance.
- You set up user access using single sign-on. See Set Up User Access to Oracle Fusion Data Intelligence Using Single Sign-On .

Oracle highly recommends that you create an Oracle Fusion Data Intelligence instance integrated with your Oracle Fusion Cloud Applications instance. To create an integrated, see Create an Integrated Oracle Fusion Data Intelligence Instance .

11. If you run into issues, then enter a service request against “Fusion Data Intelligence” in My Oracle Support so that it gets routed to the correct team. For this service request, select **Significant Impairment** as **Issue Type** and in **Problem Type**, click **Activate, Create, Delete, Manage FDI Instance** and then select **FDI Activation**. Prior to creating the service request, ensure that you have noted down the Cloud account, order number, subscription details, and the failed step information.

Typical Workflow to Administer Oracle Fusion Data Intelligence

If you’re setting up Oracle Fusion Data Intelligence for the first time, then follow these tasks as a guide after activating your Oracle Fusion Data Intelligence subscription.

Task	Description	More Information
Sign into the Oracle Cloud Infrastructure Console.	After you activate the service, use the cloud account credentials to access your services. If you're planning to use single sign-on to access Oracle Fusion Data Intelligence, then Set Up User Access to Oracle Fusion Data Intelligence Using Single Sign-On before proceeding with this and the subsequent tasks.	Sign In to the Oracle Cloud Infrastructure Console
Use the Oracle Cloud Infrastructure Console to access the service pages.	When you sign in to the Console, you'll see the home page. Use the navigation menu in the upper left to navigate to the service pages where you create, manage, and view your cloud resources.	Access Your Service
(Optional) Add a user with administrator permissions for the service.	Add a user with full administrator permissions of the default administrator of the service.	Add Users with Administrator Permissions
Create a user to extract data.	If you want to use the password-based basic authentication to connect to your source system, then you must provide credentials of a user who has the appropriate privileges to extract data from Oracle Fusion Cloud Applications into Oracle Fusion Data Intelligence.	Create a User in Oracle Fusion Cloud Applications to Extract Data
Set up user access to Oracle Fusion Data Intelligence using single sign-on.	You can set up how users from Oracle Fusion Cloud Applications access Oracle Fusion Data Intelligence using single sign-on. This setup eases the management of various user names and passwords. It enables you to synchronize users and roles in Oracle Fusion Cloud Applications with Oracle Identity Cloud Service and then enable these users to access Oracle Fusion Data Intelligence.	Set Up User Access to Oracle Fusion Data Intelligence Using Single Sign-On
Create an instance for Oracle Fusion Data Intelligence.	Create your Oracle Fusion Data Intelligence instance. Oracle highly recommends that you create an Oracle Fusion Data Intelligence instance integrated with your Oracle Fusion Cloud Applications instance.	Create an Integrated Oracle Fusion Data Intelligence Instance

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Task	Description	More Information
Verify the Oracle Fusion Data Intelligence instance.	You receive an email when your instance is ready. Check that you can sign in and that your instance is up and running.	Verify Your Instance and Sign In
Create and associate users and groups.	When you set up provisioning with single sign-on, you enable synchronization of users and their associated roles from Oracle Fusion Cloud Applications to your Oracle Fusion Data Intelligence instance. After the initial synchronization, if you add users in your Oracle Fusion Cloud Applications instance, they're automatically available in your identity provider because you've enabled synchronization. You can also add additional users in your identity provider if you've the User Administrator role in it. In Oracle Fusion Data Intelligence, you can view the users and groups on the Security page but you can't create, modify, or delete them. When you set up provisioning without single sign-on, to access Oracle Fusion Data Intelligence, manually create Oracle Fusion Cloud Applications users and groups (these are the equivalent of job roles in Oracle Fusion Cloud Applications) in your identity provider and then assign the groups (job roles) to users.	Set Up User Access to Oracle Fusion Data Intelligence Using Single Sign-On
Manage data access.	Ensure that users have appropriate access to use Oracle Fusion Data Intelligence. Access to subject areas and data depends on the roles assigned to the users.	Manage Data Access
Configure Oracle Fusion Data Intelligence data.	Set up global and reporting configurations, and create data pipelines for functional areas to copy your Oracle Fusion Cloud Applications data to the data warehouse.	Configure Oracle Fusion Data Intelligence Data

Sign In to the Oracle Cloud Infrastructure Console

After you activate the service, use the cloud account credentials to sign in to the Oracle Cloud Infrastructure Console to access your services.

If you're the first user on the account and were invited by Oracle Cloud, then you're automatically added to the Administrators group. You can invite other members of the organization by adding users in Oracle Cloud Infrastructure Identity and Access Management. See Signing In to the Console.

Access Your Service

Sign in to the Oracle Cloud Infrastructure Console and use the navigation menu in the upper left to navigate to the service pages where you create, manage, and view your cloud resources.

See Using the Console.

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Add Users with Administrator Permissions

If you want another user to administer the service, then provide the user with the same permissions as the default administrator of the service.

- If you're an Oracle Cloud Infrastructure Identity and Access Management administrator and want to add another Oracle Cloud Infrastructure Identity and Access Management user with administrator privileges, then complete the following tasks:
  - Create a group and add a non-administrator user to the group. Name the group, for example, `FAWAdmin.grp`. See Managing Groups.
  - Create a compartment for the Oracle Fusion Data Intelligence instances to limit the access of non-administrator users to only those services within the compartment. Name the compartment, for example, `FAWServicesCompartment`. See Managing Compartments.
  - Define the policies for the non-administrator user to access the Oracle Fusion Data Intelligence instances. Name the policy, for example, `FAWAdmin.pl`. Add the policy statements such as:

    *
      ```
      ALLOW GROUP FAWAdmin.grp TO MANAGE analytics-warehouses IN
      COMPARTMENT
                FAWServicesCompartment
      ```

    *
      ```
      ALLOW GROUP FAWAdmin.grp TO READ analytics-warehouse-work-requests
      IN COMPARTMENT FAWServicesCompartment
      ```

    See Managing Policies.
- Add the policy to grant the non-administrator user permission to view and manage Oracle Autonomous AI Lakehouse along with operations such as scale Autonomous AI Lakehouse and enable or disable the Autonomous AI Lakehouse tools in the Oracle Cloud Infrastructure Console for Autonomous AI Lakehouse. You must add this policy in the compartment that you created, for example, `FAWServicesCompartment`. Ensure that the compartment in which you grant the manage Autonomous AI Lakehouse permissions is the same as the compartment in which the non-administrator user has a manage permission for Oracle Fusion Data Intelligence instances. Name the Autonomous AI Lakehouse-specific policy, for example, `FAWADWAdmin.pl` and add a policy statement such as:

  ```
  ALLOW GROUP FAWAdmin.grp TO MANAGE autonomous-database-family IN
  COMPARTMENT
            FAWServicesCompartment
  ```

- Add the policy to grant the non-administrator user permission to view and manage Oracle Analytics Cloud along with operations such as scale Oracle Analytics Cloud in the Oracle Analytics Cloud Console. You must add this policy in the compartment that you created, for example, `FAWServicesCompartment`. Ensure that the compartment in which you grant the manage Oracle Analytics Cloud permissions is the same as the compartment in which the non-administrator user has a manage permission for Oracle Fusion Data Intelligence

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instances. Name the Oracle Analytics Cloud-specific policy, for example, `FAWOACAdmin.pl` and add a policy statement such as:

```
ALLOW GROUP FAWAdmin.grp TO MANAGE analytics-instances IN COMPARTMENT
          FAWServicesCompartment
```

- Add the policy to grant the non-administrator user permission to view Oracle Analytics Cloud work requests such as the activity log for the Oracle Analytics Cloud instance in the Oracle Analytics Cloud Console. Add the policy such as:

```
ALLOW GROUP FAWAdmin.grp TO READ analytics-instance-work-requests IN
COMPARTMENT
          FAWServicesCompartment
```

- If your tenancy uses Oracle Identity Cloud Service to manage user logins and passwords for the Oracle Cloud Infrastructure Console, then to add a user with administrator permissions. See Managing Oracle Identity Cloud Service Users and Groups in the Oracle Cloud Infrastructure Console.

Create a User in Oracle Fusion Cloud Applications to Extract Data

If you want to use the password-based basic authentication to connect to your source system, then you must provide credentials of a user who has the appropriate privileges to extract data from Oracle Fusion Cloud Applications into Oracle Fusion Data Intelligence.

In Oracle Fusion Cloud Applications, ensure that you've the Security Manager role and access the Security Console to create a user to extract data into Oracle Fusion Data Intelligence. Ensure that the password for this user doesn't contain any special characters or spaces.

Oracle counts this user as an Oracle Fusion Cloud Applications licensed user. You must assign the appropriate data security privileges to this user for bulk data extraction. Later, specify this user while providing the source details when you're creating your Oracle Fusion Data Intelligence instance and updating the source details after creating the instance.

If you're using the password-based basic authentication to connect to your source system, then you won't be able to reset the password for the prebuilt `FAWService` user in Oracle Fusion Cloud Applications. You can continue to use the `FAWService` user until the existing password expires. The recommendation is to update the connection details with the new user created to extract data, such as `MyFAWExtractUser`, before the password for the `FAWService` user expires to ensure continuation of data extraction. See Update the Data Source Connection Details. To provide the user credentials while creating a Oracle Fusion Data Intelligence instance, see Enter Details for an Oracle Fusion Data Intelligence Subscription Instance .

If you want to use the credentials of the user such as `MyFAWExtractUser` for validating the extracted data, then ensure that you also assign to this user the custom data BI - Abstract Role that was created for data validation; for example, FAW_CUSTOM_DATA_VALIDATION_ROLE. See Create a Custom BI Abstract Role. Otherwise, create a user such as `MyFAWValidationUser` and assign the custom data BI - Abstract Role created for data validation. See Create a User to Validate the Extracted Data.

1. Sign in to Oracle Fusion Cloud Applications and in the Navigator, click **Tools**, and then click **Security Console**.
2. In the Console, click the Users tab and create a user that you want to use to extract data into Oracle Fusion Data Intelligence; for example, `MyFAWExtractUser`.

   See Add User Accounts.

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3. Click the Roles tab and then click **Create**.
4. On the Basic Information page, enter FAW_EXTRACT_ADMIN in Role Name, FAW_EXTRACT_ADMIN in Role Code, and BI - Abstract Roles in Role Category.
5. Click **Next** to navigate to the subsequent pages. You can skip entering details on the Function Security Policies and Data Security Policies pages.
6. On the Role Hierarchy page, click **Add Role** and in the Add Role Membership dialog, search for the following roles and click **Add Role Membership** to add them:
   - ESS Administrator Role: To create and manage schedules for global data extracts or jobs.
   - ORA_ASM_APPLICATION_IMPLEMENTATION_ADMIN_ABSTRACT: To provide access to global offerings and data stores or jobs.
7. Close the Add Role Membership dialog and click **Next**.
8. Skip entering details on the Segregation of Duties page and click **Next**.
9. On the Users page, click **Add User** and in the Add User dialog, search for and select the user to whom you want to assign this role; for example, `MyFAWExtractUser`. Click **Add Selected Users** and close the Add User dialog.
10. Click **Next**. Review the summary and click **Save and Close**.

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3

Set Up Oracle Fusion Data Intelligence

As the cloud account administrator, create the service instance for Oracle Fusion Data Intelligence.

Topics:

- Prerequisites for Oracle Fusion Data Intelligence
- Typical Workflow to Set Up Oracle Fusion Data Intelligence
- Set Up User Access to Oracle Fusion Data Intelligence Using Single Sign-On
- Create an Oracle Fusion Data Intelligence Instance
- Deploy Oracle Fusion Data Intelligence with a Private Endpoint
- Make Preview Features Available
- Enable Generally Available Features
- Manage Alerts
- View Work Requests
- View Subscriptions
- Update the Data Source Connection Details
- Update Your Subscriptions
- Update the Administrator Password for Oracle Autonomous AI Lakehouse
- Reset the Password for OAX_USER and Custom Schemas
- Terminate Instances
- Move the Oracle Fusion Data Intelligence Instance to Another Compartment
- Update the Notification Email
- Scale Up Oracle Autonomous AI Lakehouse
- Change Oracle Analytics Cloud Capacity
- Activate the Universal Credits Subscription
- Provide Your Encryption Key for Oracle Autonomous AI Lakehouse
- Configure Advanced Options

Prerequisites for Oracle Fusion Data Intelligence

The prerequisites needed to set up Oracle Fusion Data Intelligence pillars ensure you can use all the features of those products.

Prerequisites for Pillars

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Pillar	Prerequisites
Oracle Fusion CX Analytics	See Prerequisites for Fusion CX Analytics.
Oracle Fusion ERP Analytics	See Prerequisites for Fusion ERP Analytics.
Oracle Fusion HCM Analytics	See Prerequisites for Fusion HCM Analytics.
Oracle Fusion SCM Analytics	See Prerequisites for Fusion SCM Analytics.

Typical Workflow to Set Up Oracle Fusion Data Intelligence

If you're setting up Oracle Fusion Data Intelligence for the first time, then follow these tasks as a guide.

Task	Description	More Information
Set up user access to Oracle Fusion Data Intelligence using single sign-on.	You can set up how users from Oracle Fusion Cloud Applications access Oracle Fusion Data Intelligence using single sign-on. This setup simplifies how you manage user names and passwords. It enables you to synchronize users and roles in Oracle Fusion Cloud Applications with Oracle Identity Cloud Service and then enable these users to access Oracle Fusion Data Intelligence.	Set Up User Access to Oracle Fusion Data Intelligence Using Single Sign-On
Create an Oracle Fusion Data Intelligence instance.	Create a service instance to manage your cloud resources. Oracle highly recommends that you create an Oracle Fusion Data Intelligence instance integrated with your Oracle Fusion Cloud Applications instance.	Create an Integrated Oracle Fusion Data Intelligence Instance
Verify your instance and sign in.	Verify your service instance when you receive an email from Oracle that your Oracle Fusion Data Intelligence service instance is ready.	Verify Your Instance and Sign In

Set Up User Access to Oracle Fusion Data Intelligence Using Single Sign-On

You can set up how users from Oracle Fusion Cloud Applications access Oracle Fusion Data Intelligence using single sign-on. This setup simplifies how you manage user names and passwords. You must complete this setup before you create your Oracle Fusion Data Intelligence instances except where mentioned that further setup is required after you create the Oracle Fusion Data Intelligence instance.

Topics:

- About Setting Up User Access to Oracle Fusion Data Intelligence Using Single Sign-On
- Set Up User Access for a Single Cloud Account

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- Set Up User Access for Separate Cloud Accounts

About Setting Up User Access to Oracle Fusion Data Intelligence Using Single Sign-On

Using single sign-on simplifies managing user access across applications.

Users of Oracle Fusion Data Intelligence are mostly Oracle Fusion Cloud Applications users and those whom you create specifically for Oracle Fusion Data Intelligence in the identity provider. Setting up access to Oracle Fusion Data Intelligence for these users using single sign-on depends on the identity domains available in your cloud accounts.

Oracle Cloud regions use the Oracle Cloud Infrastructure Identity and Access Management (IAM) identity domains. See Identity Domain Overview. It's easy to determine the presence of identity domains in your cloud account. In Oracle Cloud Infrastructure Console, navigate to **Identity & Security**. Under **Identity**, check for **Domains**.

Set up user access to Oracle Fusion Data Intelligence using single sign-on if:

- Oracle Fusion Cloud Applications and Oracle Fusion Data Intelligence are activated in the same cloud account. This approach is highly recommended because it saves you time, cost, and complexity when setting up your security integration between Oracle Fusion Data Intelligence and your Oracle Fusion Cloud Applications, as well as improved ongoing synchronization performance.
- Oracle Fusion Cloud Applications and Oracle Fusion Data Intelligence are activated in different cloud accounts. This approach costs you additional time, money, and complexity when setting up your security integration between Oracle Fusion Data Intelligence and your Oracle Fusion Cloud Applications, and reduced performance in the ongoing synchronization.

Set Up User Access for a Single Cloud Account

Set up user access to Oracle Fusion Data Intelligence using single sign-on when Oracle Fusion Cloud Applications and Oracle Fusion Data Intelligence are activated in the same cloud account and the cloud account offers identity domains.

If you're a new user of Oracle Fusion Cloud Applications with Oracle Fusion Data Intelligence activated in the same cloud account as Oracle Fusion Cloud Applications and your cloud account offers identity domains, then perform these steps:

1. Set up the JWT Based authentication for Oracle Fusion Data Intelligence.

   See Configure JWT Authentication Provider. While configuring the token-based authentication, ensure that you enter `FAWServiceJWTIssuer` as the trusted issuer.

2. Use the Oracle Cloud Infrastructure Console and add these policies to enable users from the identity domain associated with Oracle Fusion Cloud Applications to access the Oracle Fusion Data Intelligence compartments:

```
Allow group '<DomainName>'/'<GroupName>' to manage analytics-warehouses in
      tenancy
      Allow group '<DomainName>'/'<GroupName>' to manage
        analytics-instances in
      tenancy
      Allow group '<DomainName>'/'<GroupName>' to manage
        autonomous-database-family
      in tenancy
```


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```
Allow group '<DomainName>'/'<GroupName>' to manage all-resources
  in
compartment <compartment name>
```

See "To create a policy" in Managing Policies.

3. Copy and paste into a text file the URL of your Oracle Fusion Cloud Applications instance for later use. You specify this URL as the source Oracle Fusion Cloud Applications while creating the Oracle Fusion Data Intelligence instance.
4. In Oracle Cloud Infrastructure, sign in to the cloud account where both Oracle Fusion Cloud Applications and Oracle Fusion Data Intelligence services have been activated using your cloud account administrator credentials.
5. On the Oracle Cloud Infrastructure Sign-in page, choose the domain that's corresponding to the Oracle Fusion Cloud Applications instance that you want to specify as the source while creating the Oracle Fusion Data Intelligence instance.
6. In the Oracle Cloud Infrastructure Console, click the **Navigation** menu icon, click **Analytics & AI** and then click **Data Intelligence** to create the Oracle Fusion Data Intelligence instance.

   See Create an Oracle Fusion Data Intelligence Subscription Instance.

Set Up User Access for Separate Cloud Accounts

Set up user access to Oracle Fusion Data Intelligence using single sign-on when Oracle Fusion Cloud Applications and Oracle Fusion Data Intelligence are activated in separate cloud accounts and both the cloud accounts offer identity domains.

If you're a new user of Oracle Fusion Cloud Applications in a cloud account that offers identity domains with Oracle Fusion Data Intelligence activated in a different new cloud account that offers identity domains, then perform these steps:

1. Copy and paste into a text file the URL of your Oracle Fusion Cloud Applications instance for later use.

   You specify this URL as the source Oracle Fusion Cloud Applications while creating the Oracle Fusion Data Intelligence instance.
2. Create a domain in the cloud account in which you activated Oracle Fusion Data Intelligence to control the authentication and authorization of the users who can sign in to Oracle Fusion Data Intelligence.

   Ensure that you select **Free** domain type but ignore the limits mentioned for the Free domain type because they aren't applicable for Oracle Fusion Data Intelligence. See Creating Identity Domains and *Creating an Identity Domain* in Using the Console.
3. Configure the GenericSCIM Template in the identity domain that you created in the cloud account in which you activated Oracle Fusion Data Intelligence for enabling synchronization of users, groups, and group mappings from the identity domain associated with the Oracle Fusion Cloud Applications instance.

   While configuring the GenericSCIM template, use the **GenericScim - Client Credentials** template and in **Select Provisioning Operation**, choose **Authoritative Sync**. In the Configure connectivity section, ensure that the host name is in this sample format (without the https): `idcs-123456abcde123.identity.oraclecloud.com`. See Configure the Generic SCIM App Template.
4. Configure single sign-on between the identity domain associated with Oracle Fusion Cloud Applications and the identity domain associated with Oracle Fusion Data Intelligence.

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See Configure Single Sign-on Between Two Identity Domains.

5. In Oracle Cloud Infrastructure Console, create an Oracle Cloud Infrastructure policy to enable a domain user to create the Oracle Fusion Data Intelligence instance.

   While creating the policy, select the identity domain in which you plan to create the Oracle Fusion Data Intelligence instance and enter these policy statements:

   - Allow group '<DomainName>'/'<GroupName>' to manage analytics-warehouses in tenancy
   - Allow group '<DomainName>'/'<GroupName>' to manage analytics-instances in tenancy
   - Allow group '<DomainName>'/'<GroupName>' to manage autonomous-database-family in tenancy

   See To create a policy.

6. In the Oracle Cloud Infrastructure Console, click the **Navigation** menu icon to navigate to **Data Intelligence** and create the Oracle Fusion Data Intelligence instance.

   See Create an Oracle Fusion Data Intelligence Subscription Instance.

7. Create an identity provider policy for single sign-on to ensure that the Oracle Fusion Data Intelligence sign-in page has an option to sign in with the Oracle Fusion Cloud Applications credentials.

   See *Adding an Identity Provider Policy* in Using the Console.

   On the Add IdP Rule page, in **Assign identity providers** select the SAML IDP that you created in Add an SAML Application; for example, the *FAW-SSO* SAML identity provider.

8. Assign the *ANALYTICSAPP_<faw-instance-name>* and *ANALYTICSINST_oax<faw-instance-name>-<id>* analytics apps to the identity provider policy for single sign-on.

   When you attempt to authenticate through these apps, the only identity providers that appear in the Sign In page of these apps are the ones you assigned to the identity provider policy for single sign-on. For example, the *FAW-SSO* SAML identity provider. These apps were created when you created the Oracle Fusion Data Intelligence instance. See *Adding Apps to the Policy* in Using the Console.

Configure Single Sign-on Between Two Identity Domains

Configure single sign-on between the the identity domain associated with Oracle Fusion Cloud Applications and the identity domain associated with Oracle Fusion Data Intelligence to ensure that users can sign into Oracle Fusion Data Intelligence with their existing Oracle Fusion Cloud Applications credentials.

To configure single sign-on between the identity domain associated with Oracle Fusion Cloud Applications and the identity domain associated with Oracle Fusion Data Intelligence, you must create a Security Assertion Markup Language (SAML) application using the Oracle Cloud Infrastructure Console. You then configure this SAML application with the details from the metadata XML file of the Oracle Fusion Data Intelligence identity domain.

Topics:

- Add an SAML Application
- Copy Details from the Identity Domain Metadata File
- Configure the SAML Application

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Add an SAML Application

Add a Security Assertion Markup Language (SAML) application in the identity domain associated with your Oracle Fusion Cloud Applications instance to provide a way to authenticate a user once and then communicate that authentication to multiple applications.

1. Sign in to the Oracle Cloud Infrastructure Console using the credentials of the cloud account associated with Oracle Fusion Cloud Applications.
2. In the **Navigator** menu, click **Applications** and on the Applications page, click **Add**.
3. In Add Application, select **SAML Application**.
4. On the Add SAML Application page, in the Details section, enter a name such as FAW-SSO and select the **User can request access** checkbox to enable the user to access the app.
5. In the SSO Configuration section, click **Download Identity Provider Metadata** to download the metadata XML file of the identity domain associated with your Oracle Fusion Cloud Applications instance and save the metadata XML file to your local machine.
6. Save and pause the configuration of this SAML application temporarily to collect certain values from the metadata XML file of the Oracle Fusion Data Intelligence identity domain.

Copy Details from the Identity Domain Metadata File

Copy details from the metadata XML file of the Oracle Fusion Data Intelligence identity domain into a text file to use while configuring the SAML Application that you created.

1. Sign in to the Oracle Cloud Infrastructure Console using your Oracle Fusion Data Intelligence service administrator credentials.
2. In the Oracle Cloud Infrastructure **Navigator** menu, click **Identity & Security** and then in the Identity & Security pane, under **Identity**, click **Domains**.
3. On the Domains page, navigate to the identity domain that you created in this cloud account and on the identity domain details page, click **Security** and then click **Identity Providers**.
4. On the Identity provider (IdP) policies in the identity domain page, click **Add IdP**, and select **Add SAML IdP** from the dropdown list.
5. On the Add SAML identity provider page, in the Add Details section, enter **Name** such as Fusion SSO Login.
6. In the Configure IdP section, select the **Import identity provider metadata** radio button to choose and import the metadata XML file of the identity domain associated with your Oracle Fusion Cloud Applications instance that you previously downloaded to your local machine.
7. In the Map Attributes section, select **Unspecified** if the **Username** for the identity domain associated with your Oracle Fusion Cloud Applications instance can be email or short name. If the **Username** is email, then select **EmailAddress**.
8. In the Export section, download the metadata XML file of the Oracle Fusion Data Intelligence identity domain and its signing certificate.
9. Open the metadata XML file of the Oracle Fusion Data Intelligence identity domain in a text editor and copy the values for **entityID**, **AssertionConsumerService**, and **SingleLogoutService** into another text file to use while configuring the SAML Application that you created.

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10. Return to configuring the SAML Application in the Oracle Cloud Infrastructure Console that you had previously signed into using the credentials of the cloud account associated with Oracle Fusion Cloud Applications.

Configure the SAML Application

Use the details from the metadata XML file of the Oracle Fusion Data Intelligence identity domain to configure the SAML Application that you created in the identity domain associated with your Oracle Fusion Cloud Applications instance.

Return to creating the SAML application that you had paused in Add an SAML Application.

1. On the Add SAML Application page, use the metadata XML file of the Oracle Fusion Data Intelligence identity domain and the signing certificate to enter values for **Entity ID** and **Assertion Consumer URL** in the General section.
2. In Signing Certificate, click **Upload** to select the signing certificate of the Oracle Fusion Data Intelligence identity domain that you had previously downloaded and upload it.
3. In **NameID Format**, select **Unspecified** and in **NameID Value**, select **User Name**.
4. In the Advanced Settings section, select the **Include Signing Certificate in Signature** and **Enable Single Logout**. Use the metadata XML file of the Oracle Fusion Data Intelligence identity domain and the signing certificate to enter values for **Single Logout URL** and **Logout Response URL**.
5. Expand the Authentication and Authorization section and ensure that the **Enforce Grants as Authorization** option isn't selected.
6. Click **Finish** and then click **Activate**.
7. Navigate to the Oracle Fusion Data Intelligence identity domain, click the SAML application that you created to edit it.
8. In Edit SAML identity provider, click **Test Login** to verify that you're able to login successfully.

Create an Oracle Fusion Data Intelligence Instance

As an administrator, create instances for Oracle Fusion Data Intelligence to enable your users to start using it.

Topics:

- About Creating an Instance
- Create a Security Zone for Your Instance Compartment
- Create an Integrated Oracle Fusion Data Intelligence Instance
- Create an Oracle Fusion Data Intelligence Standalone Instance
- Create an Oracle Fusion Data Intelligence Instance Without Oracle Fusion Cloud Applications Source

About Creating an Instance

You can create an Oracle Fusion Data Intelligence instance in various ways.

Integrated

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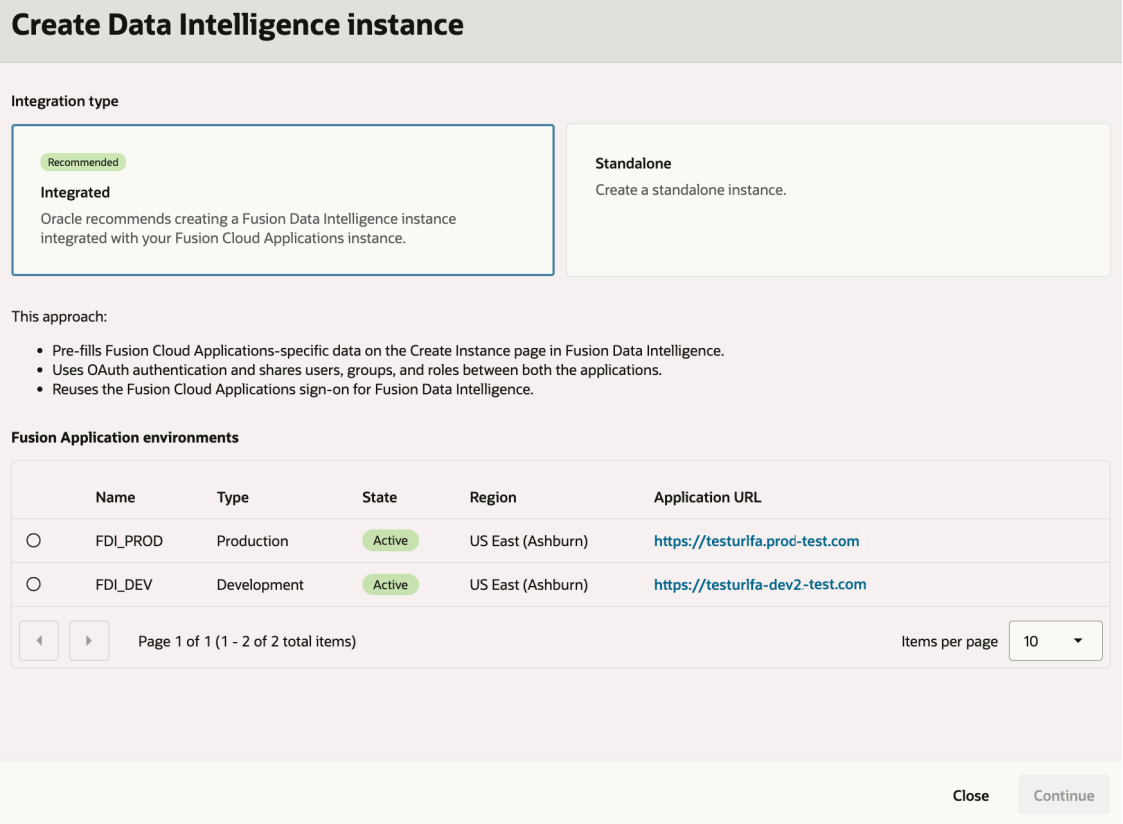
- Use Integrations in Oracle Fusion Cloud Applications that redirects to the Create Oracle Fusion Data Intelligence Instance page. See Create an Integrated Oracle Fusion Data Intelligence Instance .
- Use the Oracle Cloud Infrastructure Console to create an integrated Oracle Fusion Data Intelligence instance. See Create an Integrated Oracle Fusion Data Intelligence Instance .

Standalone

- Use the Oracle Cloud Infrastructure Console to create a standalone instance of Oracle Fusion Data Intelligence. See Create an Oracle Fusion Data Intelligence Standalone Instance .
- Use the Oracle Cloud Infrastructure Console to create a Oracle Fusion Data Intelligence instance without specifying the data source. See Create an Oracle Fusion Data Intelligence Instance Without Oracle Fusion Cloud Applications Source

Oracle highly recommends that you create an Oracle Fusion Data Intelligence instance integrated with your Oracle Fusion Cloud Applications instance. On the Data Intelligence Instances page in Oracle Cloud Infrastructure, when you click **Create Instance**, the system presents you with a dialog that suggests the recommended instance creation approach.



When you create an Oracle Fusion Data Intelligence instance using the **Integrated** option in Oracle Fusion Cloud Applications, you automatically get:

- The Oracle Fusion Cloud Applications identity provider and cloud tenancy for the Oracle Fusion Data Intelligence instance.
- Prefilled Oracle Fusion Cloud Applications-specific data on the Create Instance page in Oracle Fusion Data Intelligence.

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- The Oracle Fusion Cloud Applications instance attached to the Oracle Fusion Data Intelligence instance.
- The users, groups, and roles from Oracle Fusion Cloud Applications. Also, you don’t have to set up how users from Oracle Fusion Cloud Applications access Oracle Fusion Data Intelligence using single sign-on, if single sign-on is already set up in Oracle Fusion Cloud Applications.
- OAuth authentication.

When you create a standalone instance, you can:

- Decide which compartment to use.
- Create a security zone for your compartment.
- Use a tenancy different from the Oracle Fusion Cloud Applications tenancy.
- Point to any Oracle Fusion Cloud Applications instance of your choice, irrespective of the regions of these services.
- Set up the identity provider of your choice.
- Terminate the instance from the instance details page in Oracle Fusion Data Intelligence.

When you create an instance without specifying the Oracle Fusion Cloud Applications source, you can:

- Start using Oracle Fusion Data Intelligence even if you don't have any Oracle Fusion Cloud Applications product.
- Analyze data from non-Oracle Fusion Cloud Applications sources such as Oracle Eloqua without initially specifying an Oracle Fusion Cloud Applications URL.
- Bring data from third-party products even if you don’t have any Oracle Fusion Cloud Applications product.
- Bring data from a non-Oracle Fusion Cloud Applications source and an Oracle Fusion Cloud Applications source in the same instance. You must provide Oracle Fusion Cloud Applications details prior to loading data from Oracle Fusion Cloud Applications.
- Terminate the instance from the instance details page in Oracle Fusion Data Intelligence.

After the instance is created, you must complete these tasks:

- Create a data connection to an applicable source. See Manage Data Connections.
- Set up and manage your users and groups in Oracle Identity Cloud Service.
- Later if you want to connect to Oracle Fusion Cloud Applications, then you can update the source details. See Update the Data Source Connection Details.

After the instance is created, as an administrator, assign the `FAW Service Administrator` group to the applicable users to manage the instances in the tenancy. If your tenancy uses identity domains, see the *Adding Users to Groups* section in Using the Console. To add this group to an existing user in Oracle Identity Cloud Service, see Assign Groups to the User Account. To sign into the instance, a user must have any of the groups mentioned in System Groups assigned to them.

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Create a Security Zone for Your Instance Compartment

Enforce Security Zone policies on the compartments and resources for your Oracle Fusion Data Intelligence instances to comply with your security policies and prevent potential configuration issues.

A security zone is associated with one or more compartments and a security zone recipe. When you create and update resources in a security zone, Oracle Cloud Infrastructure Identity and Access Management validates these operations against the list of policies that are defined in the security zone recipe. If any security zone policy is violated, then the operation is denied. For more information, see Overview of Security Zones.

You can't modify the default Oracle-managed recipe for a security zone. The default recipe is associated with a policy that doesn't enable you to create:

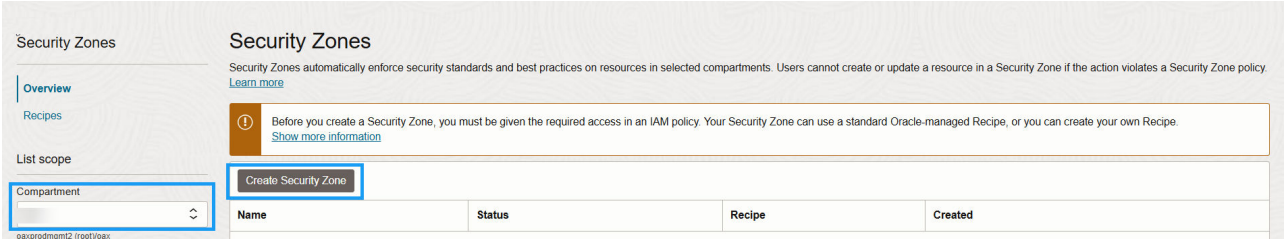
- Public Oracle Fusion Data Intelligence instances using the default-Oracle managed policy.
- Security zones that aren't in the same VCN and subnet as the compartment for the Oracle Fusion Data Intelligence instance.

You can determine which policies are appropriate for your needs by defining custom security zone policy sets. Create a security zone with a new recipe for your compartment and configure a custom policy in the recipe that doesn't violate security zone policies.

To configure prerequisites, see Getting Started with Security Zones.

1. Create a security zone for the Oracle Fusion Data Intelligence instance. On the **Security Zones** list page, select the compartment to create the security zone in.

   If the selected compartment is already associated with a security zone, this button is disabled.



2. Click **Create Security Zone**.

   See Creating a Security Zone.

3. In **Create Security Zone**, under **Select Zone Recipe**, select **Customer-managed**.

   If the recipe is in a different compartment, select **Change compartment**.

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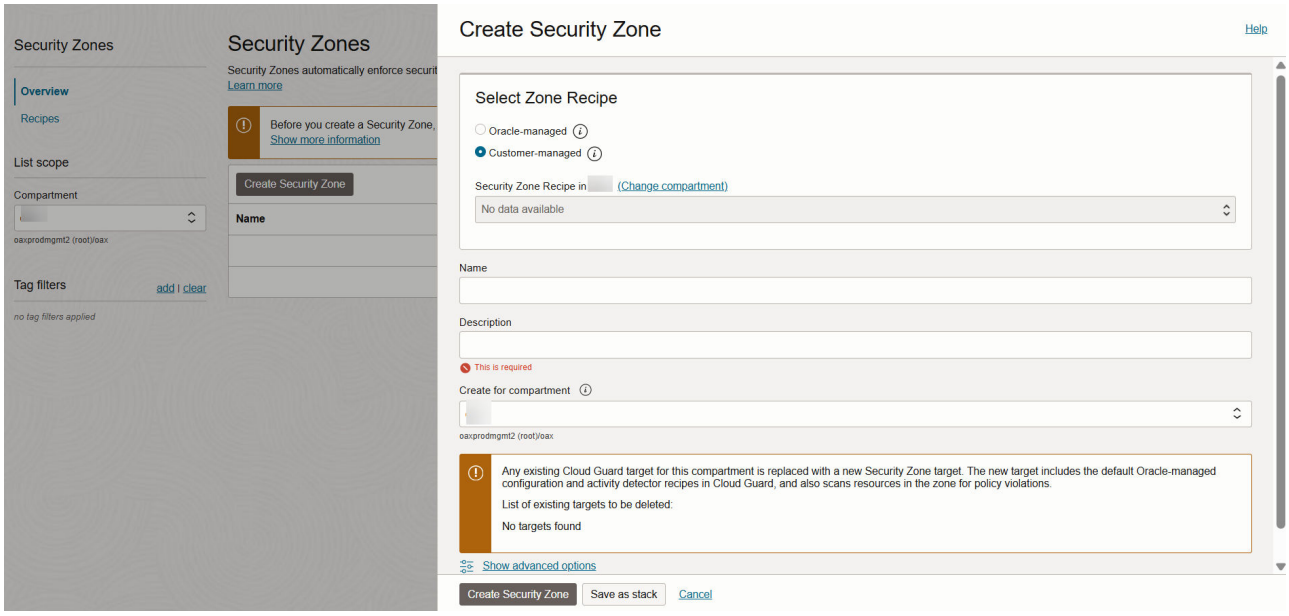
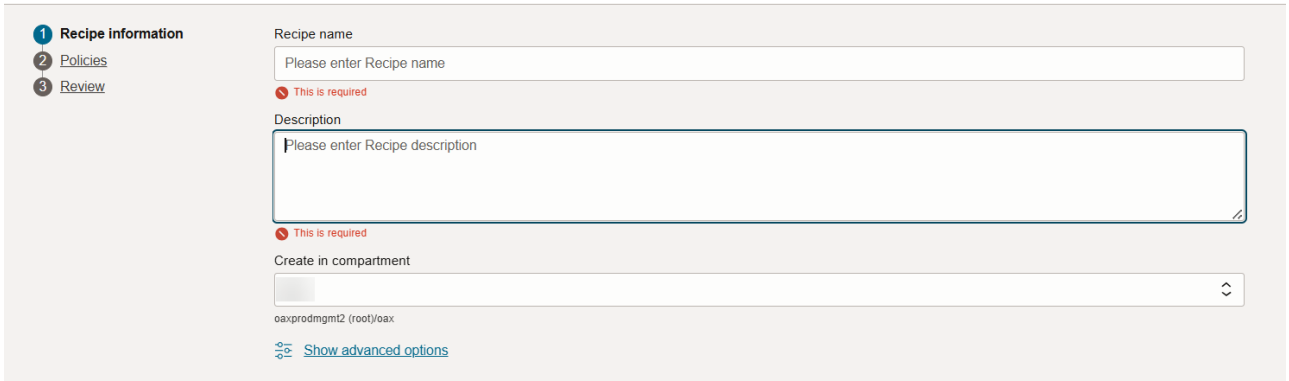


The newly created security zone is associated with the recipe policy settings for the Oracle-managed security zone. Create a security zone recipe by cloning an existing one.

4. Clone the recipe you want to work with.

   See Cloning a Security Zone Recipe.



5. Click **Policies**.

   See Security Zone Policies.

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6. Update these policy settings:
   - **deny_db_access_public_access**: Clear this option to prevent a violation during the Oracle Autonomous database creation on a public Fusion Data Intelligence instance.
   - **deny db_instance_subnet_not_in_security_zone**: Clear this option if the VCN and subnet are in a different compartment than the security zone.

Create an Integrated Oracle Fusion Data Intelligence Instance

In your Oracle Fusion Cloud Applications instance, if you've selected integration with Oracle Fusion Data Intelligence, then you can create an integrated Oracle Fusion Data Intelligence instance.

See Self-Service Integration with Fusion Data Intelligence for the prerequisites to add the Oracle Fusion Data Intelligence integration from Oracle Fusion Cloud Applications.

> **Note**
>
> An integrated instance mandatorily uses the same cloud tenancy, identity domain, region, compartment, and instance type as that of the Oracle Fusion Cloud Applications instance. The authentication setup between Oracle Fusion Data Intelligence and Oracle Fusion Cloud Applications is OAuth only. Using the Network Access options, you can allow access to the instance from anywhere or create an instance with restricted access through a private endpoint.
>
> If you want to use a different tenancy, identity domain, region, compartment, and instance type from that of the Oracle Fusion Cloud Applications instance, then see Create an Oracle Fusion Data Intelligence Standalone Instance or Create an Oracle Fusion Data Intelligence Instance Without Oracle Fusion Cloud Applications Source.

An Oracle Fusion Data Intelligence integrated instance is directly attached to your Oracle Fusion Cloud Applications service. This enables you to use the Oracle Fusion Cloud Applications resources such as users, groups, and roles seamlessly in Oracle Fusion Data Intelligence. This is the highly recommended method to create your Oracle Fusion Data Intelligence instance. The integrated instance uses OAuth authentication to verify the user permissions automatically.

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Prior to creating the instance, you may want to view the service limits of Oracle Analytics Cloud using the Limits, Quotas and Usage page in the Oracle Cloud Infrastructure Console. See Viewing Your Service Limits, Quotas and Usage. If you're unable to create the instance with an error due to inadequate capacity, then you can either get in touch with the administrator for the tenancy or submit a request to increase your service limits from the Limits, Quotas and Usage page in the Oracle Cloud Infrastructure Console. See Requesting a Service Limit Increase.

You can create an integrated Oracle Fusion Data Intelligence instance using Oracle Fusion Cloud Applications or the Oracle Cloud Infrastructure Console.

> **Note**
>
> You must ensure that the instance name and the associated tenancy and cloud account names don't have any special characters in them to avoid errors.

1. If you're using Oracle Fusion Cloud Applications to create the integrated Oracle Fusion Data Intelligence instance, perform these steps to navigate to the create instance page.
   a. Sign in to Oracle Fusion Cloud Applications.
   b. Navigate to the Environment page and add **Fusion Data Intelligence** to an Oracle Fusion Cloud Applications environment.

      See Self-Service Integration with Fusion Data Intelligence.

      After completing this step, you're redirected to the Create Instance page in Oracle Fusion Data Intelligence.

      > **Note**
      >
      > When an Oracle Fusion Cloud Applications release update or patch is being applied, you can't add Oracle Fusion Data Intelligence to the Oracle Fusion Cloud Applications environment until the maintenance is complete.

2. If you're using the Oracle Cloud Infrastructure Console to create the integrated Oracle Fusion Data Intelligence instance, perform these steps to navigate to the create instance page.
   a. Sign in to the Oracle Cloud Infrastructure Console.
   b. In Oracle Cloud Infrastructure Console, click the **Navigation** menu icon, click **Analytics & AI**, and then under Analytics & AI, click **Data Intelligence**.
   c. On the Instances page, click **Create Instance**.

      > **Note**
      >
      > If you haven't purchased a subscription, then the **Create Instance** button isn't active.

   d. In the Create Oracle Fusion Data Intelligence dialog, select **Integrated**.
   e. Select the Oracle Fusion Cloud Applications environment where you want to create the integrated Oracle Fusion Data Intelligence instance, and then click **Continue**.
3. On the Create Instance page, verify that these are prefilled:
   - **Name** - Derived from the name of your Oracle Fusion Cloud Applications instance.

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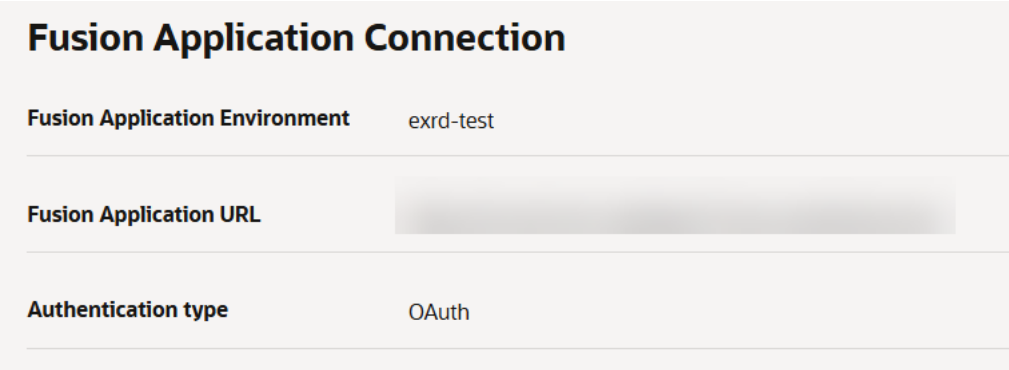
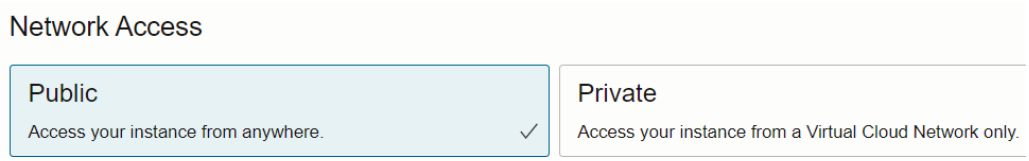
- **Display Name** - Derived from the name of your Oracle Fusion Cloud Applications instance.
- **Tags** - As applicable.
- **Notification Email** - Prefilled with the email ID of the current user signed into Oracle Fusion Cloud Applications.
- **Intended Use** - Same as the intended use of your Oracle Fusion Cloud Applications instance.
- **Offerings** - Subscription related information from your Oracle Fusion Data Intelligence subscription order.
- **Fusion Application Connection** - Name and URL derived from your Oracle Fusion Cloud Applications instance. The authentication type must be OAuth.



> **Note**
>
> In **Description**, enter text that includes the name of the Oracle Fusion Data Intelligence instance linked to the Oracle Fusion Cloud Applications instance.
>
> You can modify these, if required:
>
> - Name
> - Display Name
> - Tags
> - Notification Email

4. In **Network Access**:
   - Select **Public** to access the instance from anywhere.



   - Select **Private** to access your instance from a virtual cloud network only. Prior to creating an instance with private network access, you must ensure that the prerequisites are in place. See Deploy Oracle Fusion Data Intelligence with a Private Endpoint.

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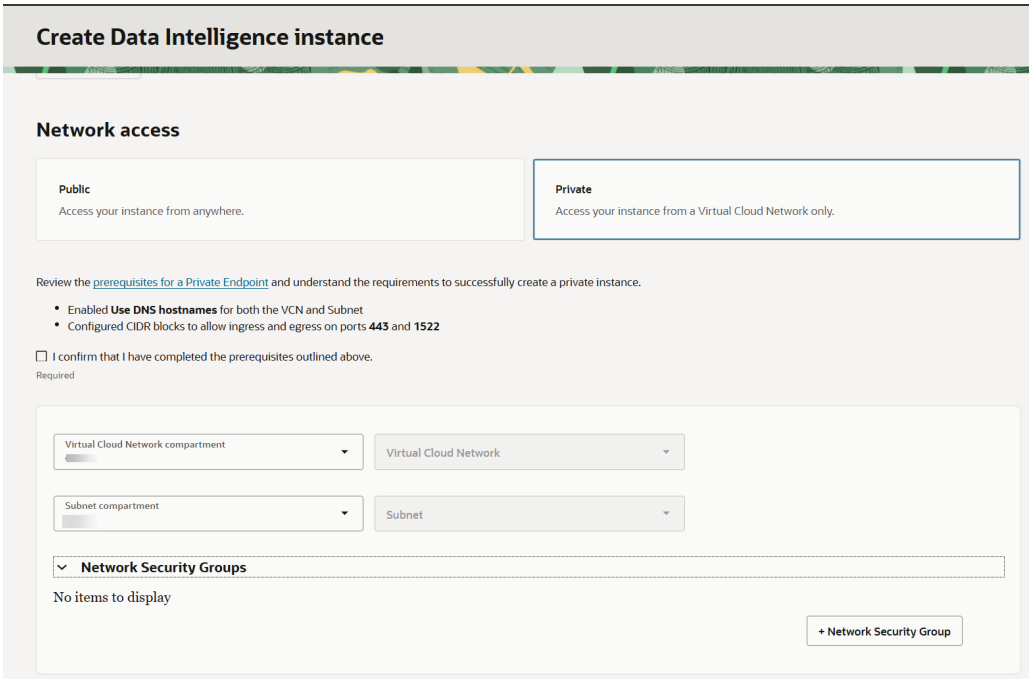
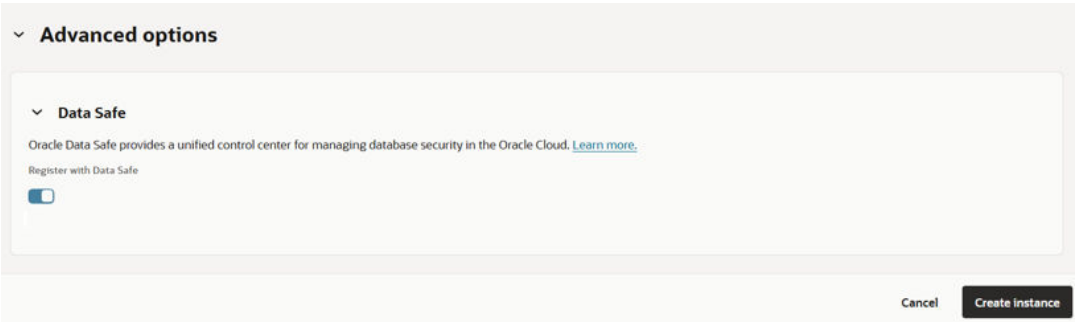


Select the **Virtual Cloud Network**, **Subnet**, and **Network Security Group** that you had set up and want to use to access Oracle Fusion Data Intelligence. See Prerequisites for a Private Endpoint.

5. For **Data Safe**, verify that the **Register with Data Safe** option is enabled and there isn't an adverse message.

   See Secure Autonomous AI Lakehouse Associated with Fusion Data Intelligence Using Data Safe.



6. Click **Create Instance**.

Oracle sends an email to the designated email address when your service is ready. If the Oracle Fusion Data Intelligence integrated instance creation fails or if the integrated Oracle Fusion Data Intelligence instance fails to attach to the Oracle Fusion Cloud Applications instance, then reach out to Oracle Support to get help about the next steps.

After the integrated instance is successfully created, the Integrations page in Oracle Fusion Cloud Applications displays the integrated Oracle Fusion Data Intelligence instance details such as Service (name that appears here is along the lines of analytics_warehouse_<name of Oracle Fusion Cloud Applications>, Integration status (active), Source (self-service), Type

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(Fusion Data Intelligence), and Application URL (URL of Oracle Fusion Data Intelligence). You can do the following:

- Click **Service** to navigate to the Oracle Cloud Infrastructure Console for the Oracle Fusion Data Intelligence instance.
- Click **URL** to launch the Oracle Fusion Data Intelligence user interface.

> **Note**
>
> The Oracle Fusion Data Intelligence Instance details page shows the information of the attached Oracle Fusion Cloud Applications along with the Oracle Fusion Cloud Applications URL to help you navigate to Oracle Fusion Cloud Applications.

After you create an instance, system initialization is in progress for at least an hour. During this period, Oracle Fusion Data Intelligence runs an initialization process that involves extraction of setup data from the source Oracle Fusion Cloud Applications system. You must wait for the system initialization process to complete before creating data pipelines for the functional areas.

Create an Oracle Fusion Data Intelligence Standalone Instance

Create a service instance to manage your cloud resources.

Prior to creating the instance, you may want to view the service limits of Oracle Analytics Cloud using the Limits, Quotas and Usage page in the Oracle Cloud Infrastructure Console. See Viewing Your Service Limits, Quotas and Usage. If you're unable to create the instance with an error due to inadequate capacity, then you can either get in touch with the administrator for the tenancy or submit a request to increase your service limits from the Limits, Quotas, and Usage page in the Oracle Cloud Infrastructure Console. See Requesting a Service Limit Increase.

If you're planning to access your instance from a virtual cloud network only, then prior to creating an instance with private network access, you must ensure that the prerequisites are in place. See Deploy Oracle Fusion Data Intelligence with a Private Endpoint.

The recommended practice is to create the Oracle Fusion Data Intelligence instance in your Oracle Fusion Cloud Applications domain. If you choose to create the instance in a non-Oracle Fusion Cloud Applications domain, then you must set up the synchronization between the domains. See Configure Single Sign-on Between Two Identity Domains.

You can create an instance with a single subscription ID. However, you can’t split a subscription across instances.

> **Note**
>
> You must ensure that the instance name and the associated tenancy and cloud account names don’t have any special characters in them to avoid errors.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the **Navigation** menu icon.



3. In the Navigation menu, click **Analytics & AI**.

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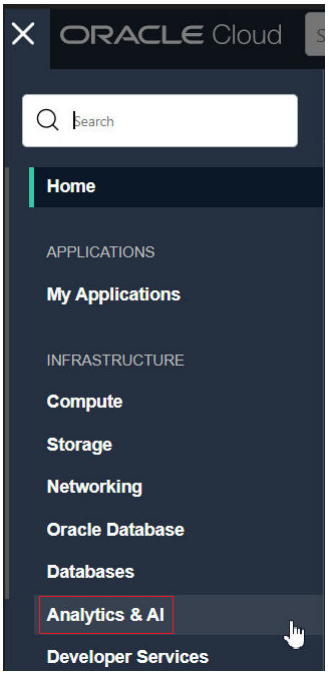
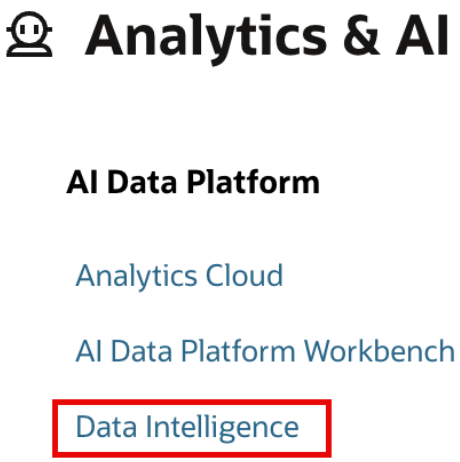


4. Under Analytics & AI, click **Data Intelligence**.



5. On the Instances page, in **Compartment**, select a compartment if you want to place the service instance in a compartment other than the default root compartment that Oracle created for you.

> **Note**
>
> Ensure that you have created a compartment before you select it here. See Managing Compartments.

6. On the Instances page, click **Create Instance**.

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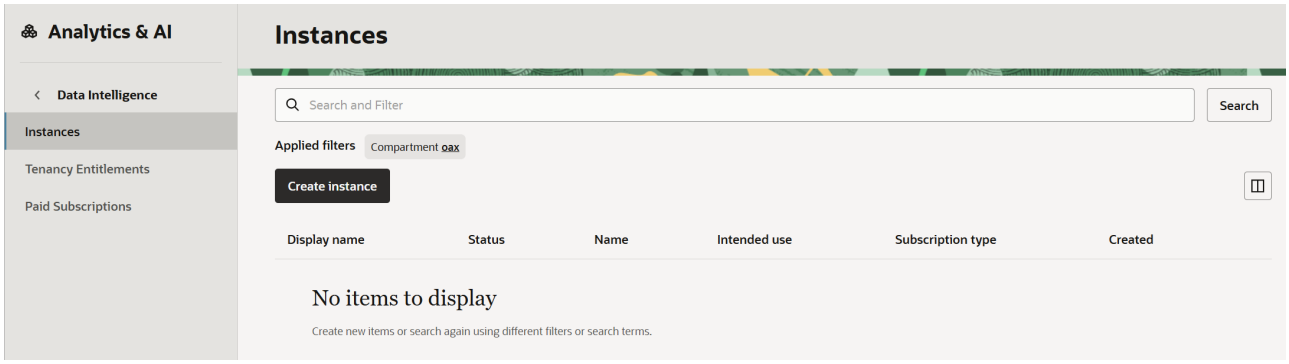
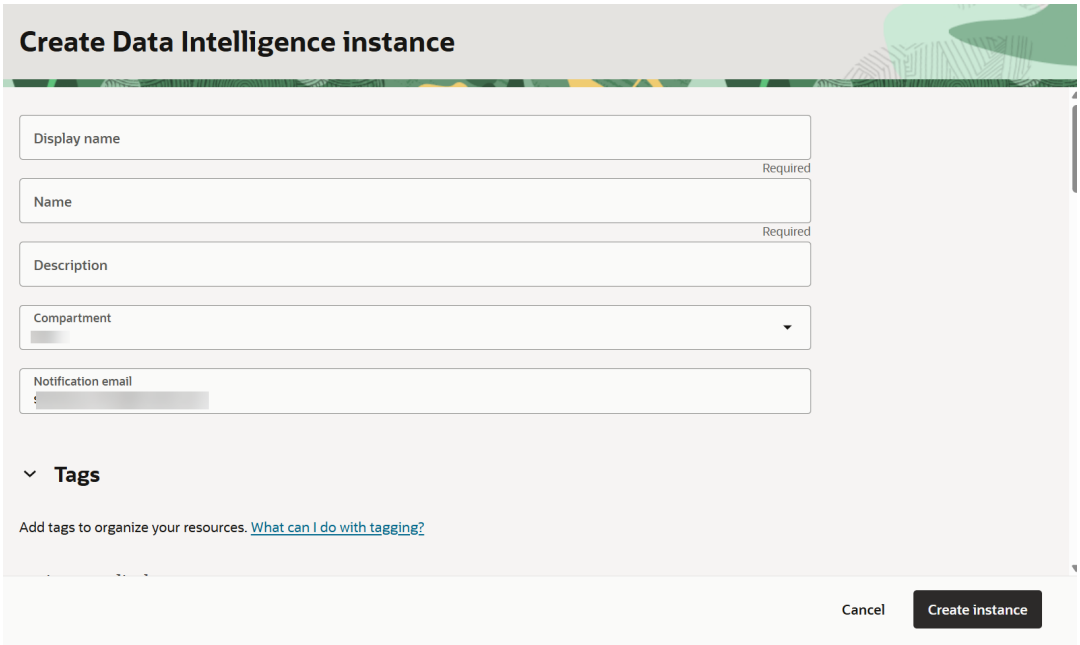
> **Note**
>
> If you haven't purchased a subscription, then the **Create Instance** button isn't active.



7. In the Create Oracle Fusion Data Intelligence dialog, select **Standalone**, and then click **Continue**.

8. On the Create Instance page, enter a **Display Name** for the service using alphanumeric and special characters.



9. Enter a **Name** for the instance that's unique in your tenancy using only alphanumeric characters without spaces or reuse the name of a deleted instance.
10. Optional: Enter a **Description** for the service using up to 255 alphanumeric and special characters.
11. In **Notification Email**, enter a valid email address if the field doesn't have a value.

    Follow the steps in *Enter Details for an Oracle Fusion Data Intelligence Standalone Instance* to provide further information regarding the instance.

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Enter Details for an Oracle Fusion Data Intelligence Subscription Instance

After specifying basic details for your instance such as compartment, name, and description, verify your subscriptions and provide details such as whether it's a test or production instance, connection details of your source data, and email to receive notifications regarding your instance.

These details ensure that you have an instance that meets your business requirements. Oracle Fusion Data Intelligence automatically displays your subscription details in the Offerings section. If you've activated multiple subscriptions in your tenancy, then you see details of all the subscriptions. On selecting a subscription, you see the single or multiple offerings within the subscription based on what you subscribed for. For example, if you've subscribed for Oracle Fusion ERP Analytics, Oracle Fusion HCM Analytics, and an additional test environment in a single subscription number such as "1820598", then you see those details on selecting the subscription "1820598".

If you plan to use JWT based authentication, you can opt to use the private key and public certificate files stored in a vault. Ensure that you've created a vault, stored the private key and public certificate files in it, and added the most appropriate policy in your tenancy from these options for reading the JWT key from your vault:

- Option 1:

```
allow any-user to read secret-bundles in compartment <compartment-name>
where all {request.principal.type in ('fawservice',
'fawextsvc','fawcontentservice')}
```

- Option 2:

```
allow any-user to read secret-bundles in compartment <compartment-name>
where all { request.principal.type in ('fawservice',
'fawextsvc','fawcontentservice'), target.secret.id in ('<Vault Secret OCID
of Private Key>', '<Vault Secret OCID of Public Key>')}
```

See Vault.

1. On the Create Instance page, under **Offerings**, select **Development/Test** in **Intended Use** as your first instance.
2. In **Select a subscription**, select the subscription that you want to use to create the instance and verify the subscription details to ensure that the displayed subscriptions match your Oracle Fusion Data Intelligence order.

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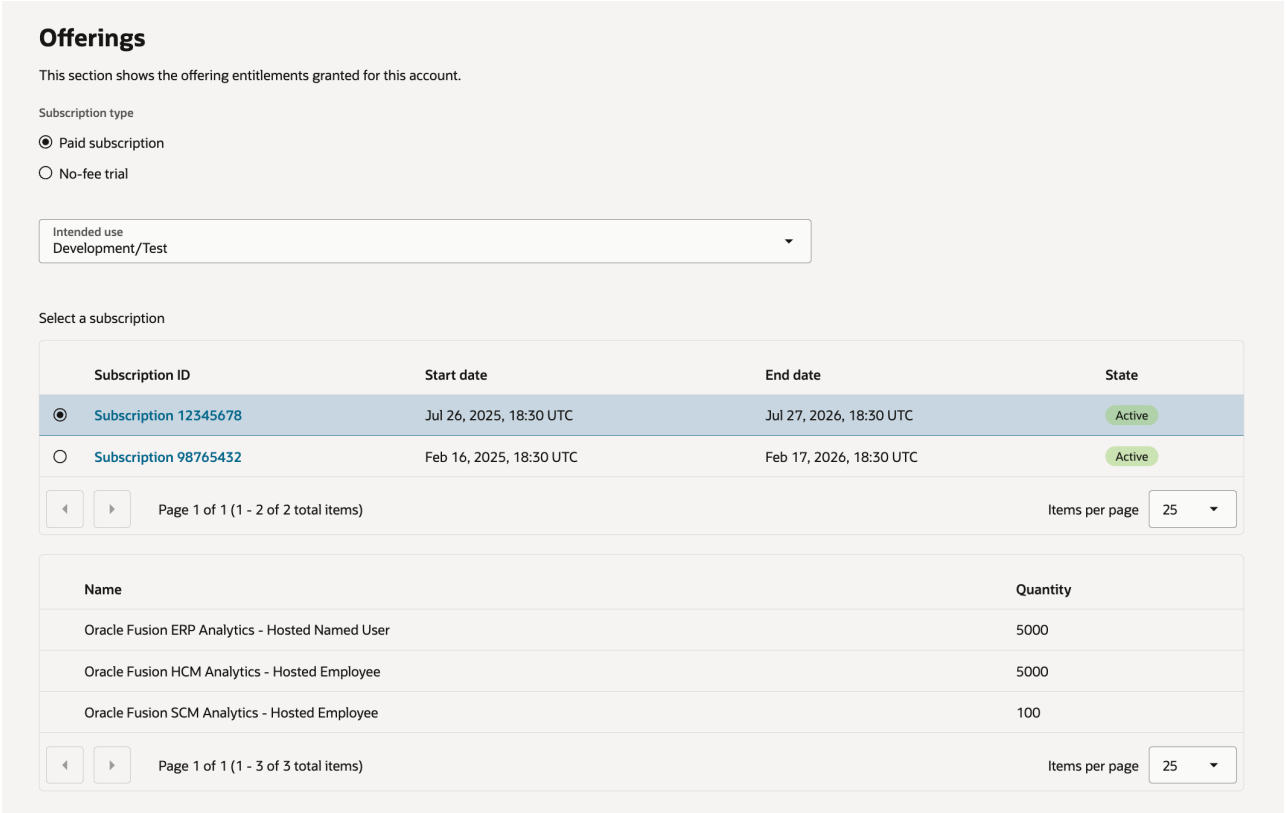
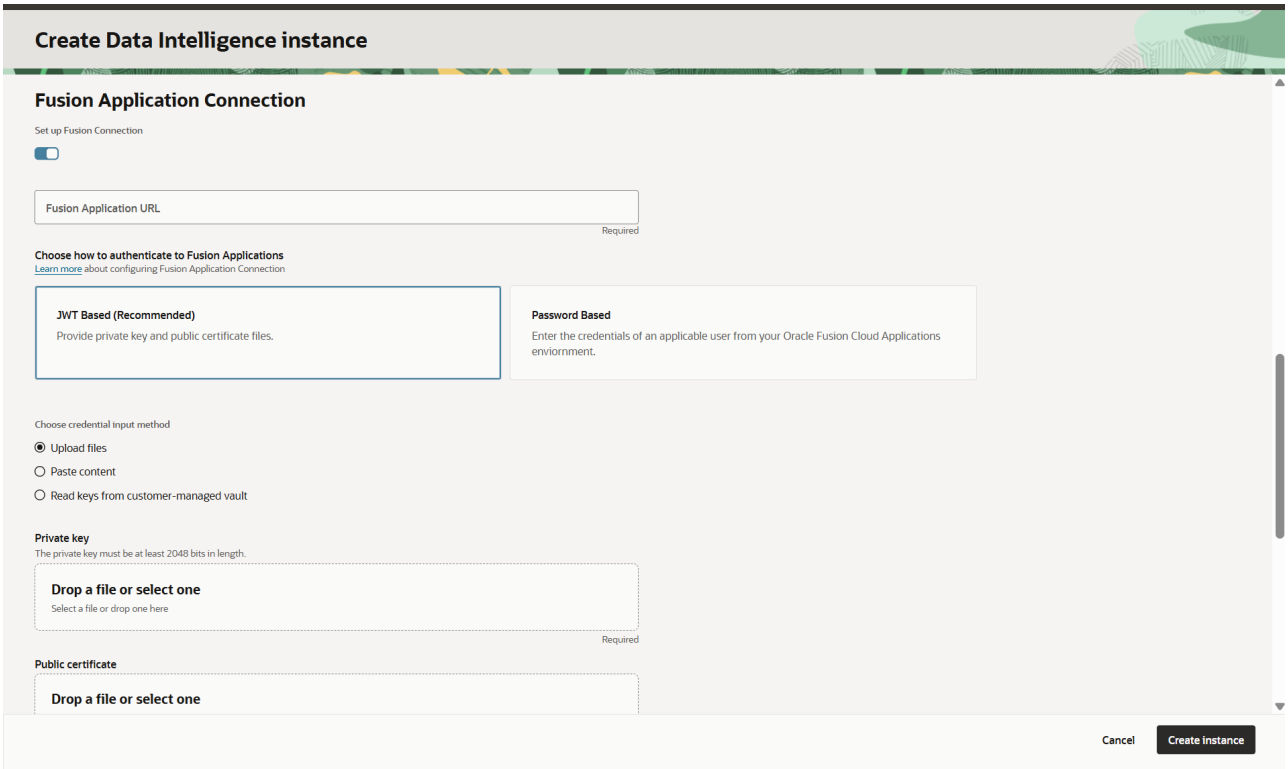


3. In **Fusion Application Connection**, provide the URL of your Oracle Fusion Cloud Applications instance.



4. In **Authentication**, select the type of authentication you want to use: **JWT Based** (recommended) or **Password Based**.

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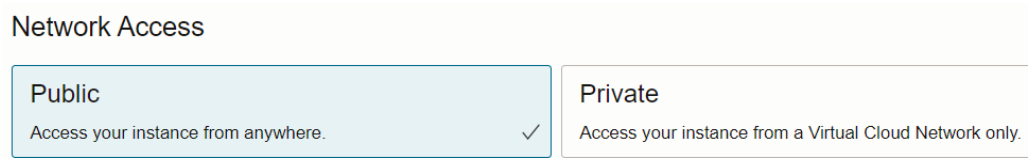
- If you choose **JWT Based** (JSON web token), provide the private key and public certificate files by either uploading, or copying and pasting, or by reading from your vault. Select **Keys have been uploaded to Fusion Source** to enable **Test Connection**.

> **Note**
>
> See Configure JWT Authentication Provider. While configuring the token-based authentication, ensure that you enter `FAWServiceJWTIssuer` as the trusted issuer.
>
> Ensure that the generated RSA encryption private key contains at least 2048 characters and that you wait at least 15 minutes for the uploaded public certificate to become effective in your Oracle Fusion Cloud Applications instance.

- If you choose **Password Based**, then enter the credentials of an applicable user, such as `MyFAWExtractUser` from your Oracle Fusion Cloud Applications instance. Prior to entering the user credentials, ensure that the applicable user is created in Oracle Fusion Cloud Applications. See Create a User in Oracle Fusion Cloud Applications to Extract Data.

5. Click **Test Connection** to check the connection to the Oracle Fusion Cloud Applications instance and confirm whether the credentials are valid.
6. In **Network Access**:
   - Select **Public** to access the instance from anywhere.



   - Select **Private** to access your instance from a virtual cloud network only. Prior to creating an instance with private network access, you must ensure that the prerequisites are in place. See Deploy Oracle Fusion Data Intelligence with a Private Endpoint.

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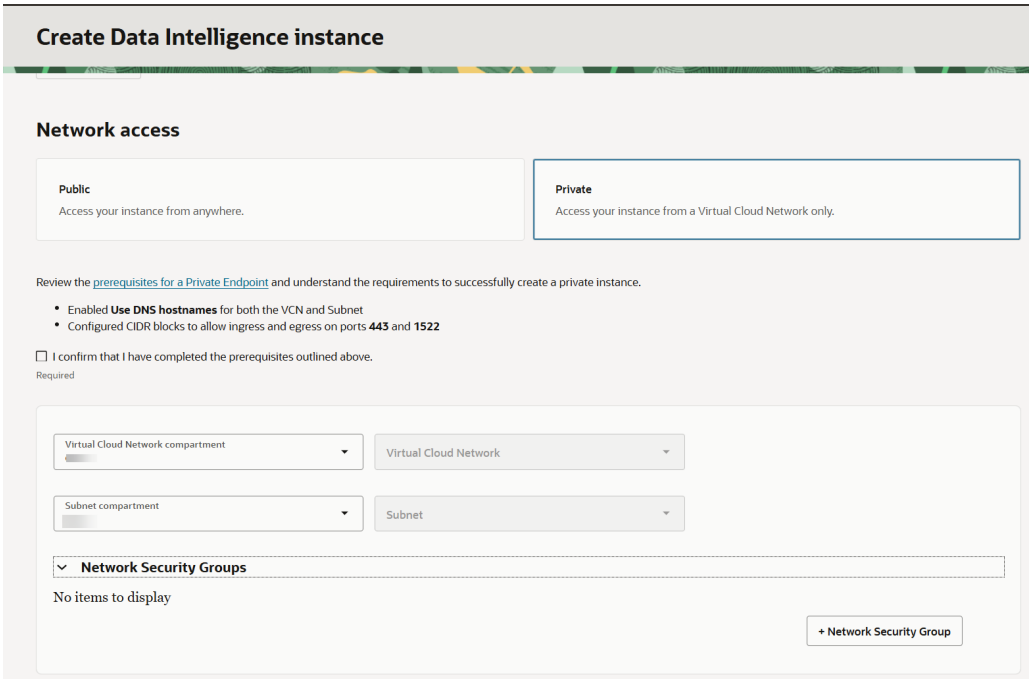
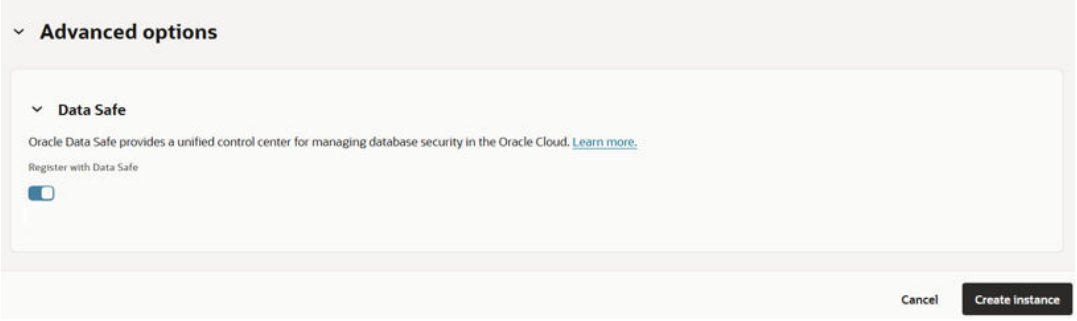


Select the **Virtual Cloud Network**, **Subnet**, and **Network Security Group** that you had set up and want to use to access Oracle Fusion Data Intelligence. See Prerequisites for a Private Endpoint.

7. For **Data Safe**, verify that the **Register with Data Safe** option is enabled and there isn't an adverse message.

   See Secure Autonomous AI Lakehouse Associated with Fusion Data Intelligence Using Data Safe.



8. Click **Create Instance**.

Oracle sends an email to the designated email address when your service is ready. You can display the Activity page to check the current status. When the status changes from CREATING to ACTIVE, the service is ready to use.
Navigate to the Details page for the new service to access the Oracle Fusion Data Intelligence URL and associated Oracle Autonomous AI Lakehouse. From here, you can also view or modify details such as the password for your Oracle Fusion Cloud Applications instance and the administrator password for the Oracle Autonomous AI Lakehouse. You can also delete the service instance that's no longer required.

If you had set up provisioning of Oracle Fusion Data Intelligence with single sign-on, then your service is associated with the federated Oracle Identity Cloud Service instance. If you hadn't

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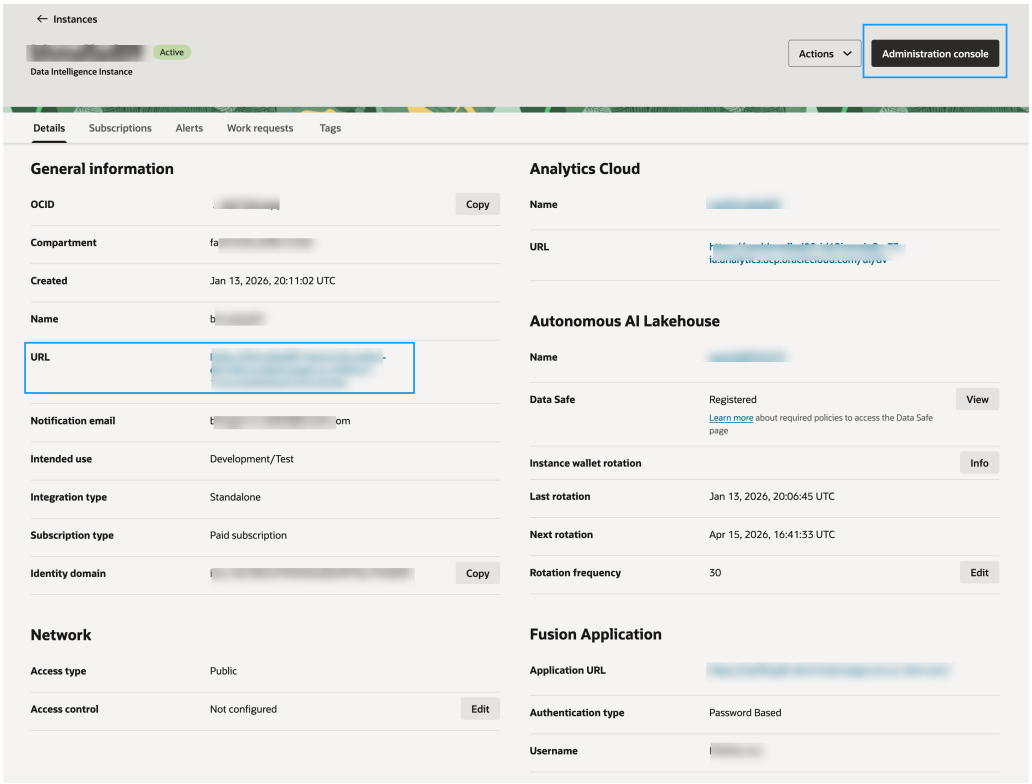
set up single sign-on for Oracle Fusion Data Intelligence, then your service is associated with the default Oracle Identity Cloud Service instance that you received with your Oracle Cloud account.

After you create an instance, you see the message that system initialization is in progress for at least one hour. During this period, Oracle Fusion Data Intelligence runs an initialization process that involves extraction of setup data from the source Oracle Fusion Cloud Applications system. You must wait for the system initialization process to complete before creating data pipelines for the functional areas.

Verify Your Instance and Sign In

Oracle sends an email to the designated email address when your Oracle Fusion Data Intelligence service instance is ready.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon.
3. In the navigation options, click **Analytics & AI**. Under Analytics, click **Data Intelligence**.
4. Navigate to your service instances page.
5. On the instance details page,
   - If you've chosen public network, click **Administration console** or **URL** to verify that your Oracle Fusion Data Intelligence service instance is up and running.



   - If you've chosen private network, then contact your networking team for access to the Oracle Fusion Data Intelligence URL.

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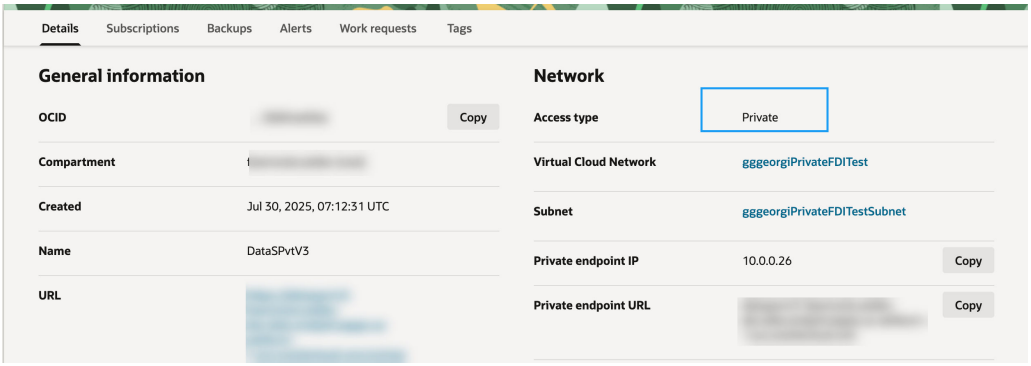

Create an Oracle Fusion Data Intelligence Instance Without Oracle Fusion Cloud Applications Source

Create an Oracle Fusion Data Intelligence instance to connect and analyze data from non-Oracle Fusion Cloud Applications sources even if you don't have any Oracle Fusion Cloud Applications products. This instance doesn't require an Oracle Fusion Cloud Applications source to start using Oracle Fusion Data Intelligence.

Prior to creating the instance, you may want to view the service limits of Oracle Analytics Cloud using the Limits, Quotas and Usage page in the Oracle Cloud Infrastructure Console. See Viewing Your Service Limits, Quotas and Usage. If you're unable to create the instance with an error due to inadequate capacity, then you can either get in touch with the administrator for the tenancy or submit a request to increase your service limits from the Limits, Quotas, and Usage page in the Oracle Cloud Infrastructure Console. See Requesting a Service Limit Increase.

If you're planning to access your instance from a virtual cloud network only, then prior to creating an instance with private network access, you must ensure that the prerequisites are in place. See Deploy Oracle Fusion Data Intelligence with a Private Endpoint.

Oracle Fusion Data Intelligence automatically displays your subscription details in the Offerings section. For example, if you're subscribed for 20 Oracle Fusion ERP Analytics users, then you see the number of users for the instance automatically configured for 20 Oracle Fusion ERP Analytics users. If you've multiple subscriptions such as Oracle Fusion ERP Analytics and Oracle Fusion HCM Analytics, then you see details of all the subscriptions.

> **Note**
>
> You must ensure that the instance name and the associated tenancy and cloud account names don’t have any special characters in them to avoid errors.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the **Navigation** menu icon, click **Analytics & AI**, and then under Analytics & AI, click **Data Intelligence**.
3. On the Instances page, in **Compartment**, select a compartment if you want to place the service instance in a compartment other than the default root compartment that Oracle created for you.

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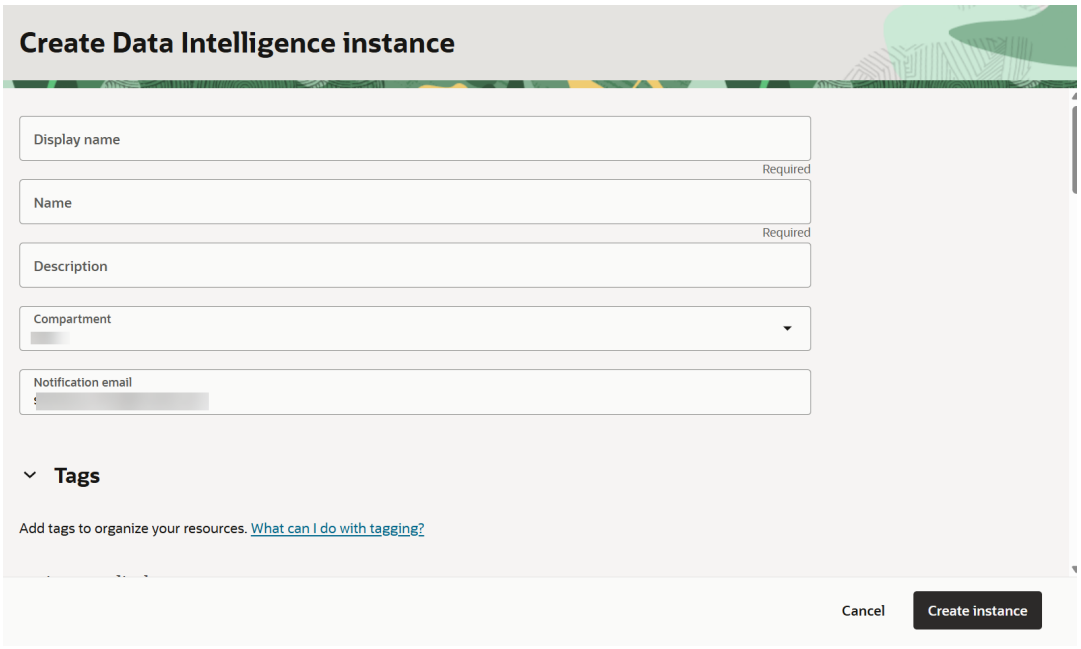
> **Note**
>
> Ensure that you have created a compartment before you select it here. See Managing Compartments.

4. On the Instances page, click **Create Instance**.

> **Note**
>
> If you haven't purchased a subscription, then the **Create Instance** button isn't active.

5. In the Create Oracle Fusion Data Intelligence dialog, select **Standalone**, and then click **Continue**.
6. On the Create Instance page, enter a **Display Name**, **Name**, **Description**, and an email to receive notifications about the instance in **Notification Email**.



7. On the Create Instance page, under **Offerings**, verify that the displayed subscriptions match your Oracle Fusion Data Intelligence order and select **Development/Test** as your first instance.

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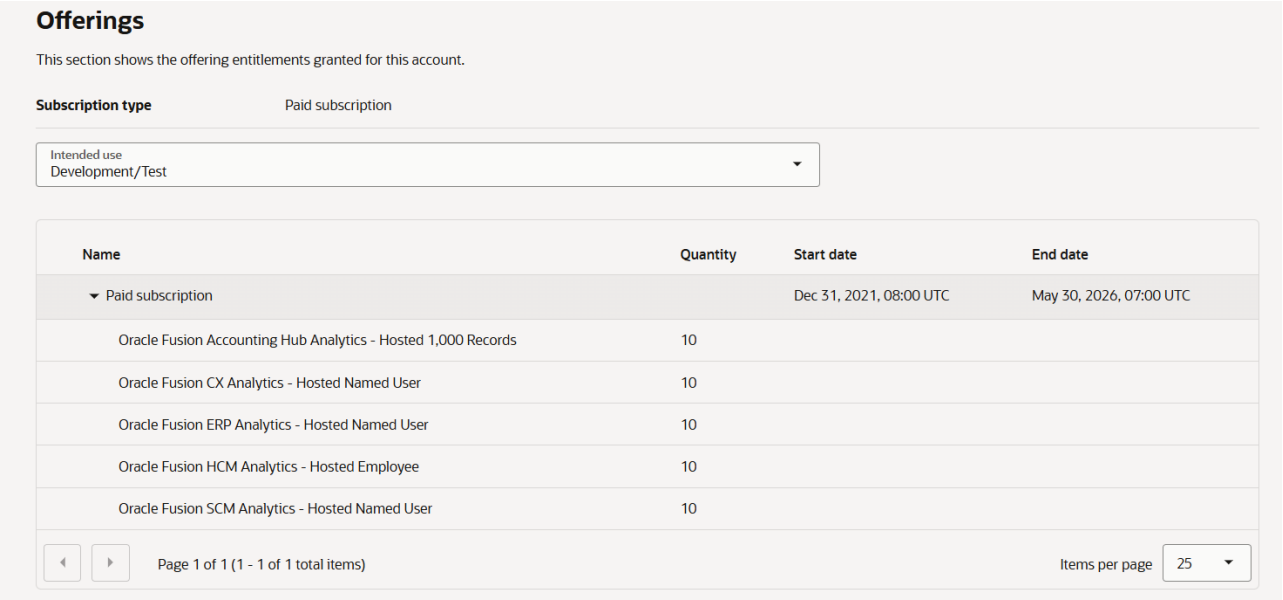
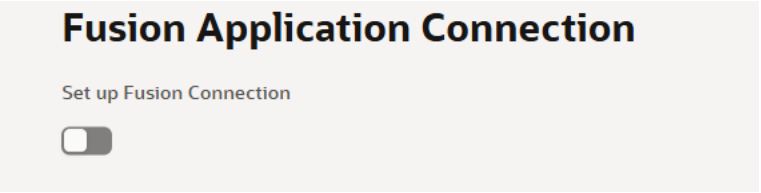
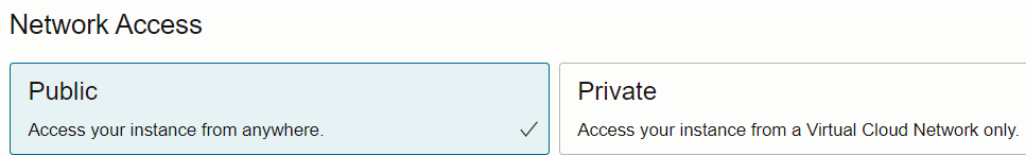


8. In **Fusion Application Connection**, ensure that **Set up Fusion Connection** isn't enabled.



9. In **Network Access**:
   - Select **Public** to access the instance from anywhere.



   - Select **Private** to access your instance from a virtual cloud network only. Prior to creating an instance with private network access, you must ensure that the prerequisites are in place. See Deploy Oracle Fusion Data Intelligence with a Private Endpoint.

10. In the **Data Safe** tab, verify that the **Register with Data Safe** option is enabled and there isn't an adverse message.

    See Secure Autonomous AI Lakehouse Associated with Fusion Data Intelligence Using Data Safe.

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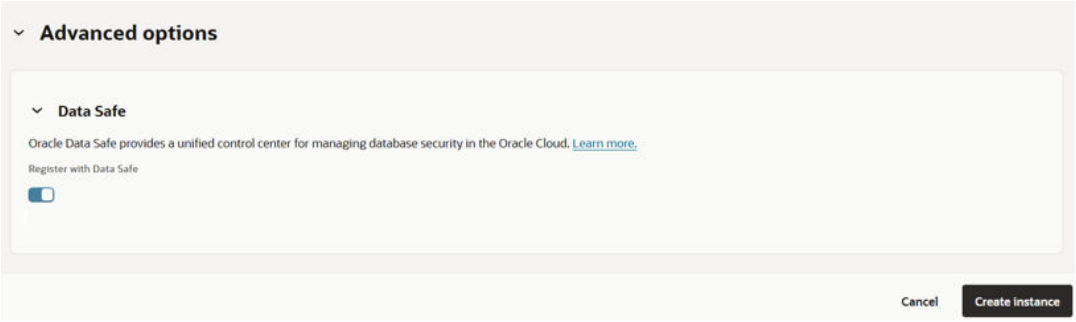

11. Click **Create Instance**.

Oracle sends an email to the designated email address when your service is ready. You can display the Activity page to check the current status. When the status changes from CREATING to ACTIVE, the service is ready to use.
Navigate to the Details page for the new service to access the Oracle Fusion Data Intelligence URL and the associated Oracle Autonomous AI Lakehouse and Oracle Analytics Cloud instances. Because you didn't set up a connection to an Oracle Fusion Cloud Applications source, Oracle Fusion Data Intelligence displays a message on the Data Configuration page asking you to set up a data source connection as an initial step.

If you had set up provisioning of Oracle Fusion Data Intelligence with single sign-on, then your service is associated with the federated Oracle Identity Cloud Service instance. If you hadn't set up single sign-on for Oracle Fusion Data Intelligence, then your service is associated with the default Oracle Identity Cloud Service instance that you received with your Oracle Cloud account.

Deploy Oracle Fusion Data Intelligence with a Private Endpoint

When you set up an Oracle Fusion Data Intelligence instance, you have the option to restrict access through a private endpoint.

A private endpoint is accessible through private network traffic and direct public internet access is prohibited. When you deploy Oracle Fusion Data Intelligence with a private endpoint, Oracle Autonomous AI Lakehouse and Oracle Analytics Cloud use private endpoints in your private subnet. You can provide access to Oracle Fusion Data Intelligence from an Oracle Cloud Infrastructure VCN that's deployed in any regions, tenancies, and on-premises too.

> **Note**
>
> You can't add or update the Domain Name System (DNS) zones for an Oracle Analytics Cloud instance associated with the private Oracle Fusion Data Intelligence instance.

Topics:

- About Private Endpoints
- Prerequisites for a Private Endpoint

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About Private Endpoints

Private endpoint refers to a network setup for your Oracle Fusion Data Intelligence instance where all network traffic moves through a private endpoint within a virtual cloud network in your tenancy.

Using a private endpoint for Oracle Fusion Data Intelligence meets the organization's security requirement that restricts the use of public endpoints. Private endpoint configuration doesn't use public subnets and allows you to keep all traffic to and from your Oracle Fusion Data Intelligence instance away from the public internet.

See *About Private Endpoints* in Private Access.

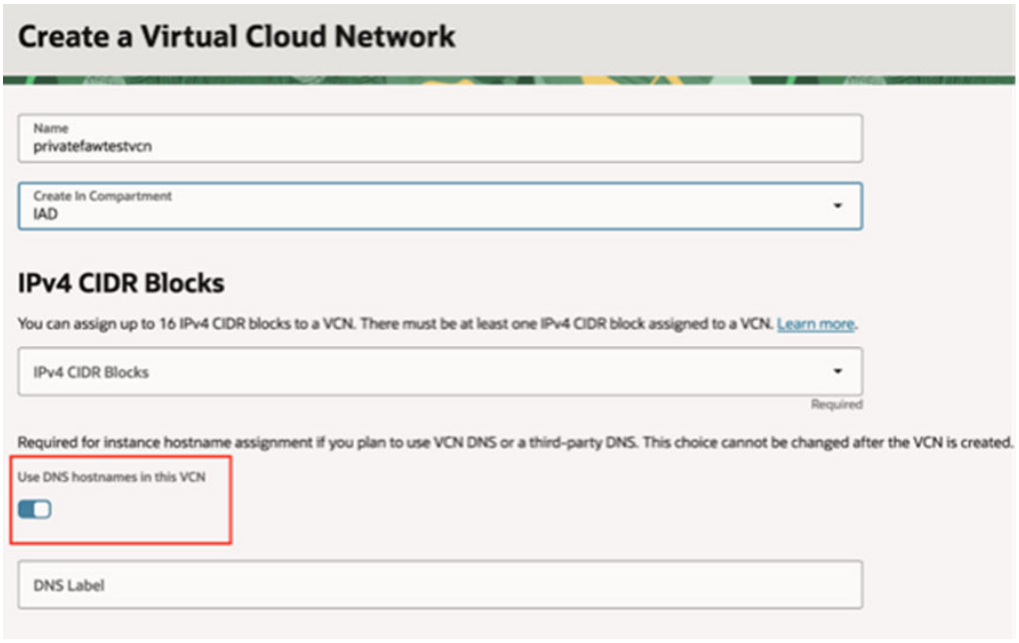
Prerequisites for a Private Endpoint

To provision an Oracle Fusion Data Intelligence instance with a private endpoint, you must have the following resources already created:

1. A virtual cloud network (VCN) within the region where you plan to deploy Oracle Fusion Data Intelligence and a private subnet in your VCN with availability of /28 (14 IP addresses) IP address or more. You can change this after provisioning.

   To avoid instance creation failures, ensure the following options are enabled:

   - The **Use DNS hostnames in this VCN** option, while creating the VCN.



   - The **Use DNS hostnames in this Subnet** option while creating the subnet.

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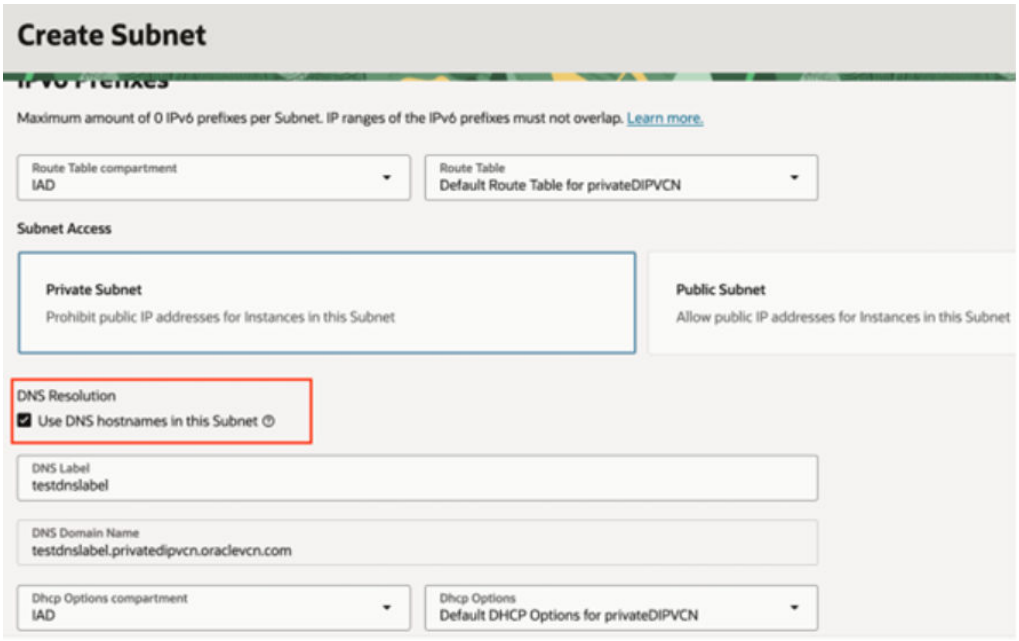

Oracle Fusion Data Intelligence requires these options for successful provisioning of the instance and its components. See Working with VCNs and Subnets.

> **Note**
>
> When you customize DNS resolver, make sure you add Oracle Autonomous AI Database DNS resolver with highest priority.

2. Set up security rules. You must configure Stateful Rules for ingress and egress. See Stateful Compared to Stateless Rules.

   When configuring security rules, ensure the following:

   - **Source CIDR**: Must be either `0.0.0.0/0`, `<VCN CIDR>`, or `<SUBNET CIDR>`.
   - **IP Protocol**: `TCP` or `All Protocols`.
   - **Source Port Range**: `ALL`
   - **Destination Port Range**: Either `ALL`, or specifically `1522` and `443`.

   > **Note**
   >
   > You specify inbound and outbound traffic on Port 1522 for Oracle Autonomous AI Lakehouse and Port 443 for Oracle Analytics Cloud while entering the security rule information for the network security group or VCN. Ensure that the VCN/SUBNET CIDR block allows ingress and egress in the rules to ports 443 and 1522. The functioning of an Oracle Fusion Data Intelligence instance with a private endpoint requires both these ports.

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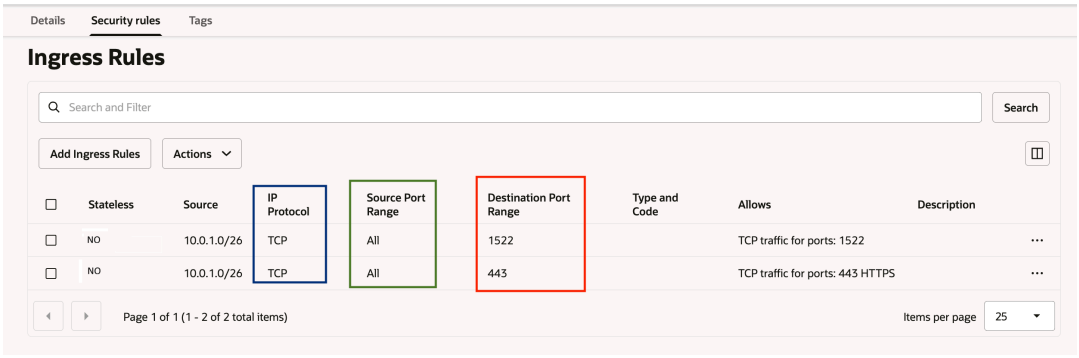
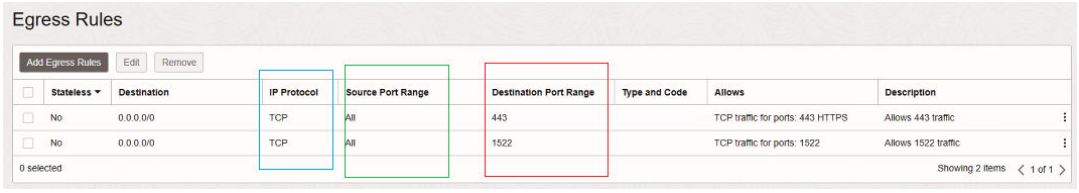
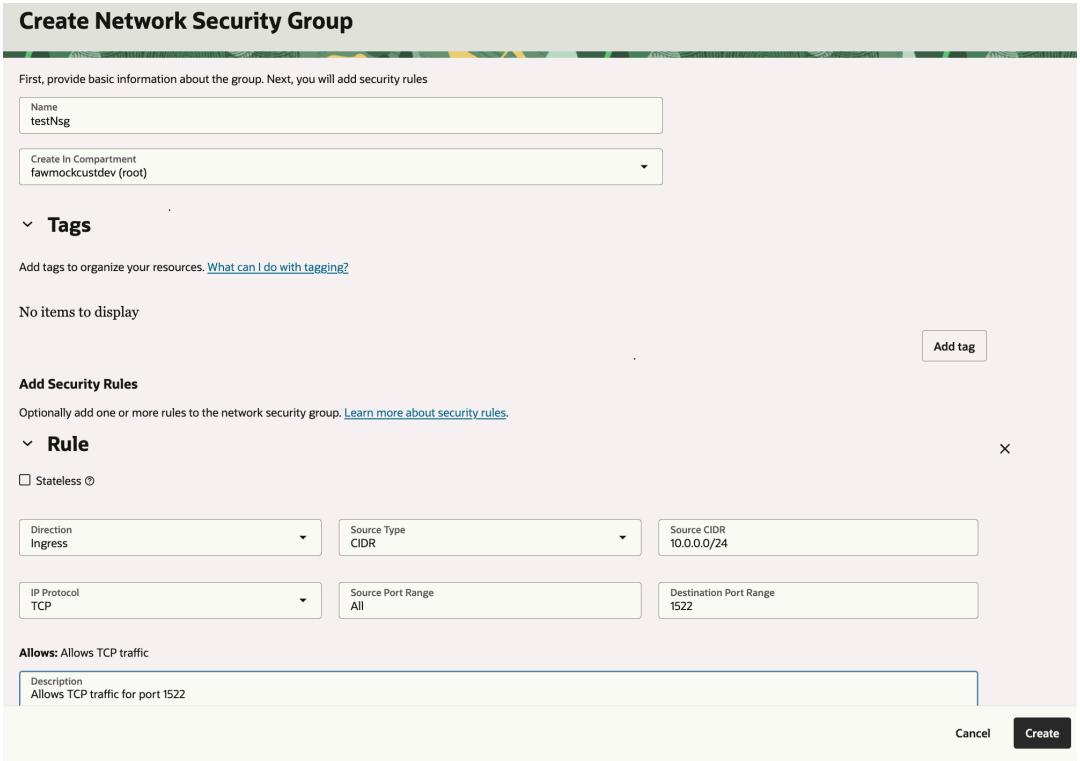




3. If you plan to restrict traffic (ingress and egress) using network security group rules, then you must do so when you create your Oracle Fusion Data Intelligence instance. You can specify up to 5 network security groups to meet your business requirements. Ensure that the network security groups exist in the same VCN as your Oracle Fusion Data Intelligence.



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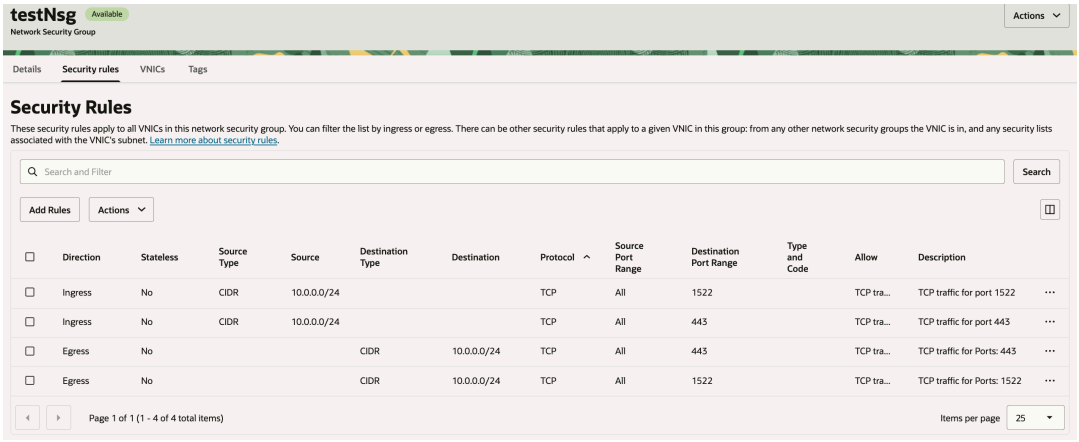

See “To create an NSG” in Network Security Groups.

4. Ensure that you (or whoever plans to create the Oracle Fusion Data Intelligence instance) have the required policies to access the VCN.

   Choose the most appropriate level for you from these options:

   Limited Resource Access Policy

   - `Allow any-user to manage network-security-groups in tenancy where request.principal.type = 'fawservice'`
   - `Allow any-user to use vnics in tenancy where request.principal.type = 'fawservice'`
   - `Allow any-user to read vcns in tenancy where request.principal.type = 'fawservice'`
   - `Allow any-user to use private-ips in tenancy where request.principal.type = 'fawservice'`
   - `Allow any-user to use subnets in tenancy where request.principal.type = 'fawservice'`

   If you want to view and manage your virtual network family from the Oracle Cloud Infrastructure Console, then you may want to create these policies:

   - `Allow group FAWAdmin.grp to manage network-security-groups <in compartment your-compartment or in tenancy>`
   - `Allow group FAWAdmin.grp to read virtual-network-family <in compartment your-compartment or in tenancy>`
   - `Allow group FAWAdmin.grp to manage vnics <in compartment your-compartment or in tenancy>`
   - `Allow group FAWAdmin.grp to use subnets <in compartment your-compartment or in tenancy>`

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- `Allow group **FAWAdmin.grp** to **use private-ips** <in compartment your-compartment or in tenancy>`

Broad Resource Access Policy

```
Allow any-user to manage virtual-network-family in tenancy where
      request.principal.type = 'fawservice'
```

If you want to view and manage your virtual network family from the Oracle Cloud Infrastructure Console, then you may want to create this policy:

```
Allow group FAWAdmin.grp to manage virtual-network-family <in compartment
compartment-name or in tenancy>
```

Apart from these, you must create the following general service policies:

- `Allow group **FAWAdmin.grp** to **manage analytics-warehouse** <in compartment your-compartment or in tenancy>`
- `Allow group **FAWAdmin.grp** to **read analytics-warehouse-work-requests** <in compartment your-compartment or in tenancy>`
- `Allow group **FAWAdmin.grp** to **manage autonomous-database-family** <in compartment your-compartment or in tenancy>`
- `Allow group **FAWAdmin.grp** to **manage analytics-instances** <in compartment your-compartment or in tenancy>`
- `Allow group **FAWAdmin.grp** to **read analytics-instance-work-requests** <in compartment your-compartment or in tenancy>`

Make Preview Features Available

As a functional administrator, you can enable the functionality available as a preview feature to try it out.

Preview features allow your organization to explore and try new features before they roll out by default. See Preview Features.

The preview features aren't available by default, but administrators can turn individual preview features on or off at any time. Administrators can find the latest preview features in the Enable Features tile on the Console and switch them on for others to use.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Enable Features** under **Application Administration**.

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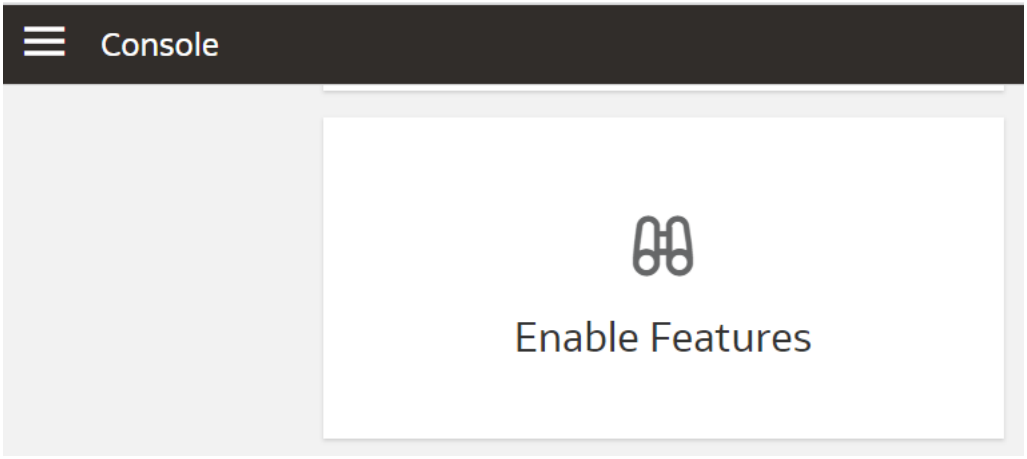
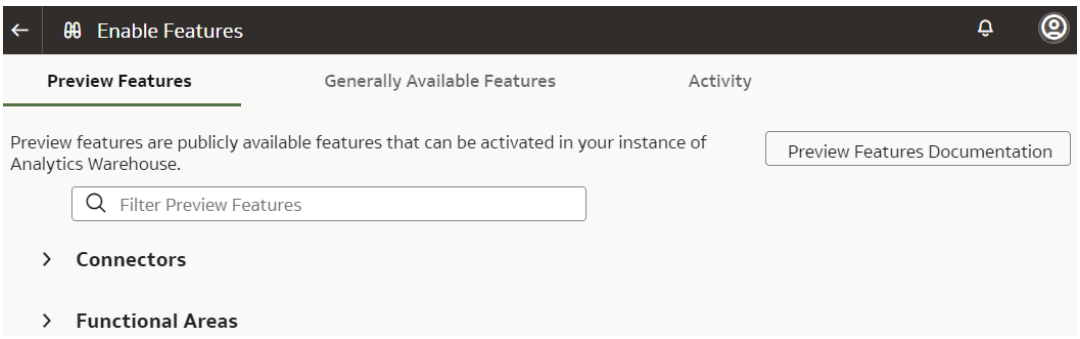


3. On the Enable Features page, under the Preview Features tab, expand the categories such as **Functional Areas** and select the features that you want to make available for your organization.



4. Navigate to the location of the preview feature you want to use. For example, if you've enabled **AWS S3** in the **Connectors** category, then navigate to the Create Connections dialog from the Manage Connections page to use this feature.

Enable Generally Available Features

As a functional administrator, you can enable the functionality that's generally available but needs you to enable it to use the specific functionality.

The generally available features aren't available by default, but administrators can turn individual features on or off at any time. Administrators can find the latest generally available features in the Enable Features tile on the Console and switch them on for others to use.

To find out about features that are generally available currently, see Generally Available Features.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Enable Features** under **Application Administration**.

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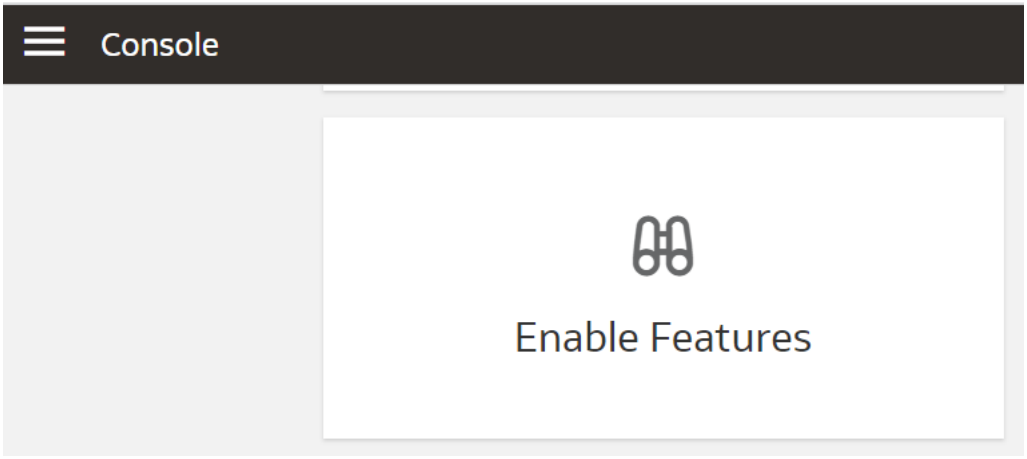
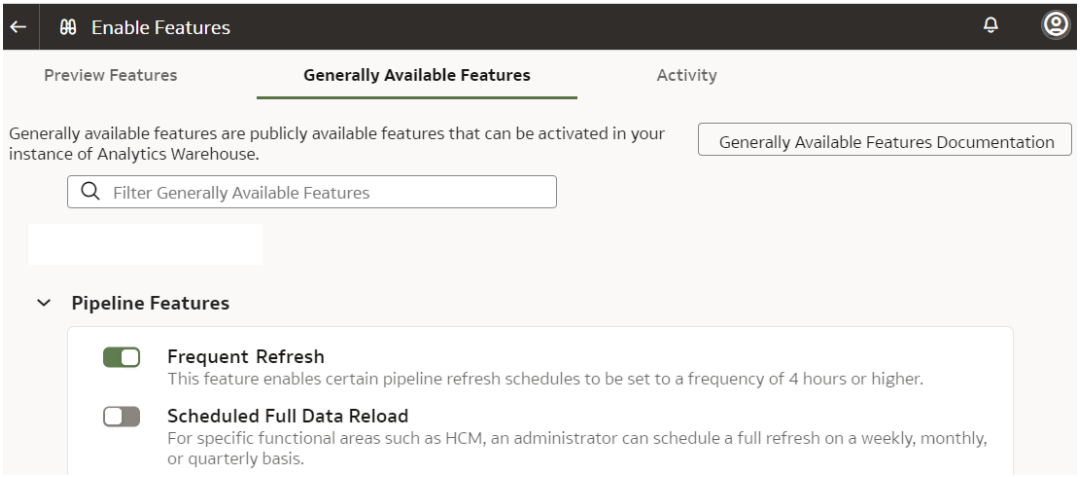


3. On the Enable Features page, under the Generally Available Features tab, expand the categories such as **Pipeline Features** and select the features that you want to make available for your organization.



4. Navigate to the location of the feature you want to use. For example, if you've enabled **Frequent Refresh** in the **Pipeline Features** category, then navigate to the Pipeline Settings page and click Frequent Data Refresh Schedule to use this feature.

Manage Alerts

You can monitor activity in your Oracle Fusion Data Intelligence instance from the Alerts tab on the instance details page. Alerts help you notify affected users about issues, respond promptly to events, and ensure your instance continues to run smoothly.

Topics:

- About Oracle Fusion Data Intelligence Alerts
- View Alerts
- Configure Alerts

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About Oracle Fusion Data Intelligence Alerts

View and manage your Fusion Data Intelligence instance alerts in the Oracle Cloud Infrastructure Console.

Fusion Data Intelligence monitors your instance and alerts you to protect your instance and maintain uninterrupted service. For example, if you haven't completed your subscription update, you get an alert to complete your pending subscription update.

When there are issues related to user access, you get instant alerts so that you take immediate action. If you want to view the details of an alert and resolve issues that might affect your instance, see View Alerts.

Some scheduled alert evaluations are updated once a day. For example, subscription related monitoring. If you want to manage your alerts and perform actions such as request early evaluation of scheduled alerts, snooze alerts, or disable alerts, see Configure Alerts.

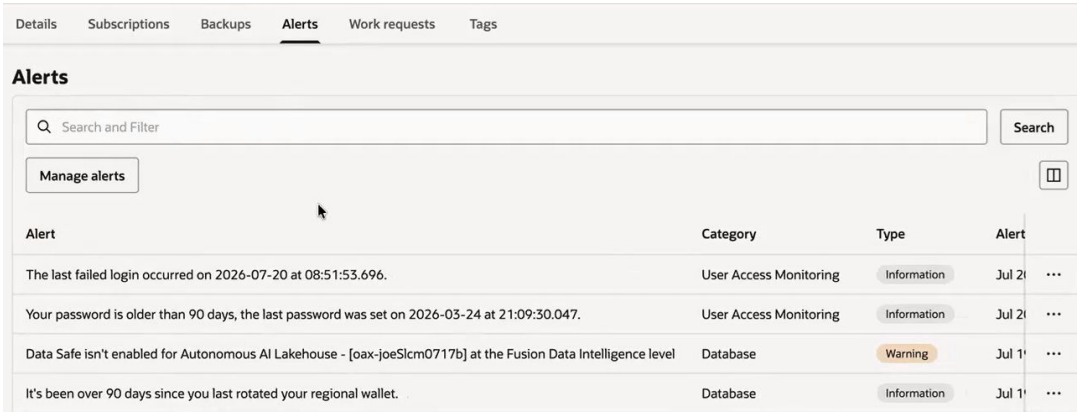
View Alerts

View the warnings and informational alerts for your Oracle Fusion Data Intelligence instance.

Oracle Fusion Data Intelligence alerts are of the Type Information and Warning.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon in the top left corner.
3. Click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.
4. Navigate to your service instances page.
5. On the Instances page, click the instance for which you want to view alerts.
6. Click **Alerts**.

   View the alerts for your instance.



7. Select the icon next to the alert to view more information, then click **View Details**.

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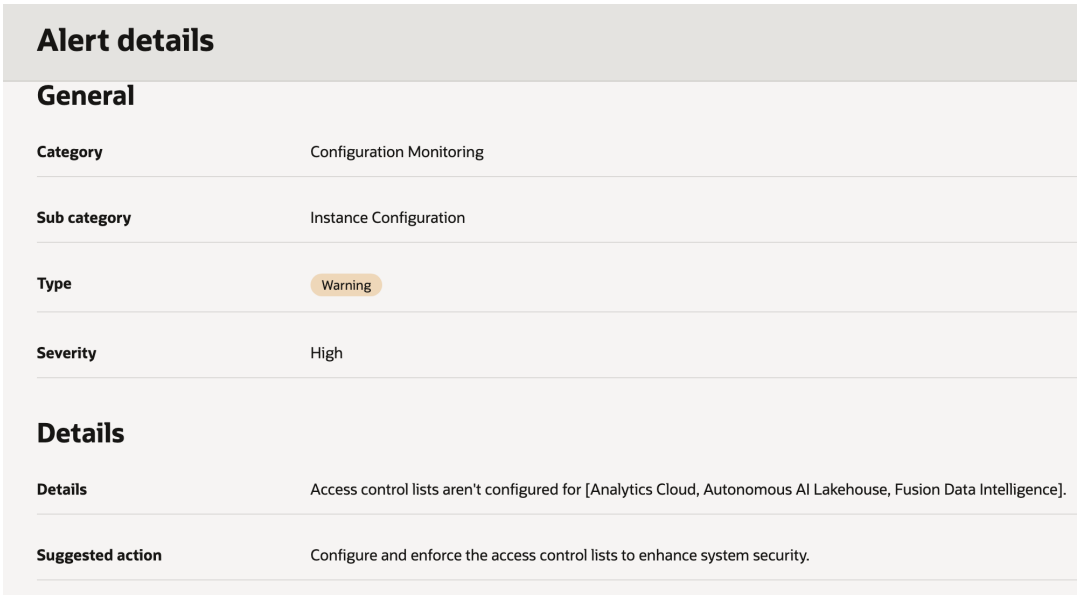

When the issue causing the warning or informational alert is resolved, the alert no longer appears when you click **Refresh**.

Configure Alerts

You can configure the warnings and informational alerts for your Oracle Fusion Data Intelligence instance.

You can request early evaluation of scheduled alerts, snooze alerts, or disable some alerts. Disable and snooze options aren't available for important security or subscription related alerts.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon in the top left corner.
3. Click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.
4. Navigate to your service instances page.
5. On the Instances page, click the instance for which you want to view alerts.
6. Click **Alerts**.

   View the alerts for your instance.
7. Click **Manage alerts**.

   Some of the alerts are instantly evaluated and you get the updated information. Some scheduled alerts are updated once a day.
8. Select the icon next to the alert to view more information and then select the option as per your requirement.
   - **Request refresh** - Select if you want early evaluation for the alert. This option is available only for scheduled evaluation alerts, not for alerts that are instantly evaluated.
   - **Snooze** - Select if you want to temporarily pause the alert evaluation and schedule the date when you want to next evaluate the alert. This option isn't available for important security or subscription related alerts.

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- **Disable** - Select to disable an alert evaluation. This option isn't available for important security or subscription related alerts.

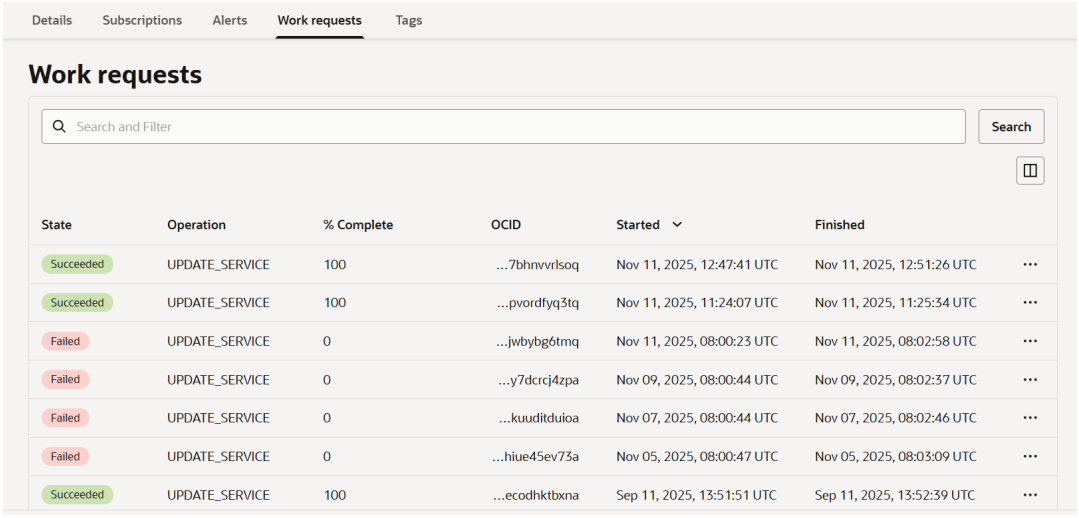
9. If you want to reset all the alerts to the default setting, click **Reset to default**.

View Work Requests

View the actions performed on your instance such as create, update, and terminate an instance as a work request.

Each work request shows when the event was triggered, how much time it took, result (success or failure). If the work request went through successfully, then there is no further action that you can take. However, if it failed, then you can take a look at the error mentioning the cause of the failure.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon in the top left corner.
3. Click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.
4. Navigate to your service instances page.
5. On the Instances page, click the instance for which you want to view the list of actions that have been performed.
6. On the instance details page, click **Work Requests**.



You see the tasks that have been performed on the instance.

View Subscriptions

View the subscriptions associated with your instance.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon in the top left corner.
3. Click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.

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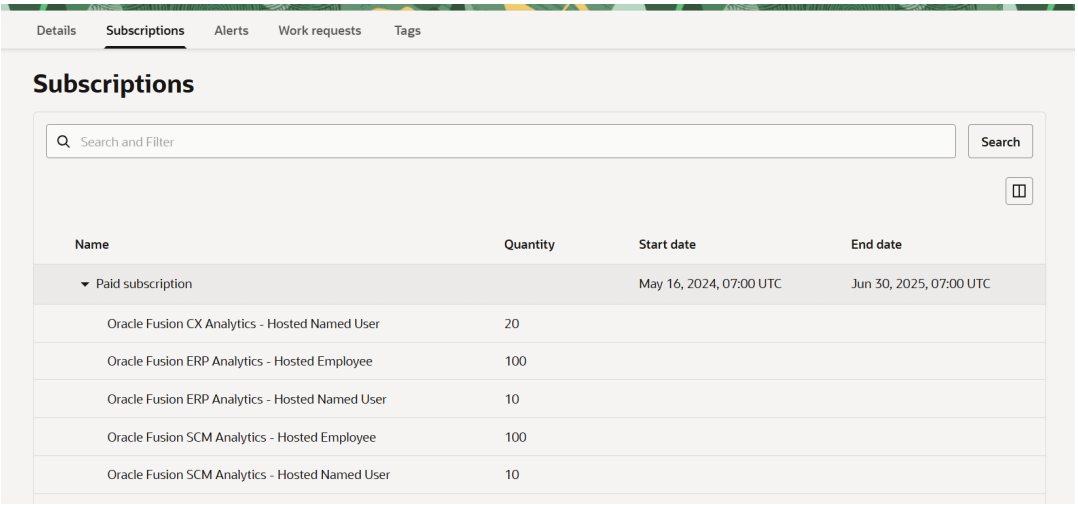
4. Navigate to your service instances page.
5. On the Instances page, click the instance for which you want to view the subscriptions.
6. On the instance details page, click **Subscriptions**.



Update the Data Source Connection Details

Update your data source connection details such as the URL for the Oracle Fusion Cloud Applications instance that you specified while creating the standalone Oracle Fusion Data Intelligence instance and the credentials of an applicable user, such as `MyFAWExtractUser`.

See Create a User in Oracle Fusion Cloud Applications to Extract Data.

You can update the source URL to point to another source environment for Oracle Fusion Cloud Applications if you want data from another Oracle Fusion Cloud Applications source. However, the identity domain remains the same as that used during the initial creation of the Oracle Fusion Data Intelligence instance and you can't change it.

You can update the applicable user credentials when your source Oracle Fusion Cloud Applications instance has been refreshed with data from another environment, for example, due to a Production to Test refresh. You also update the user credentials if the passwords differ between environments or if the password for the applicable user has expired. Prior to entering the new password, ensure that you have reset the password for the applicable user, such as `MyFAWExtractUser`, in Oracle Fusion Cloud Applications. See Reset Passwords.

> **Note**
>
> Your password doesn't expire if you're using an integrated Oracle Fusion Data Intelligence instance that is configured for OAuth. The **Update Fusion Connection** option is available only for JWT or Password Based authentication.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon in the top left corner.
3. Click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.

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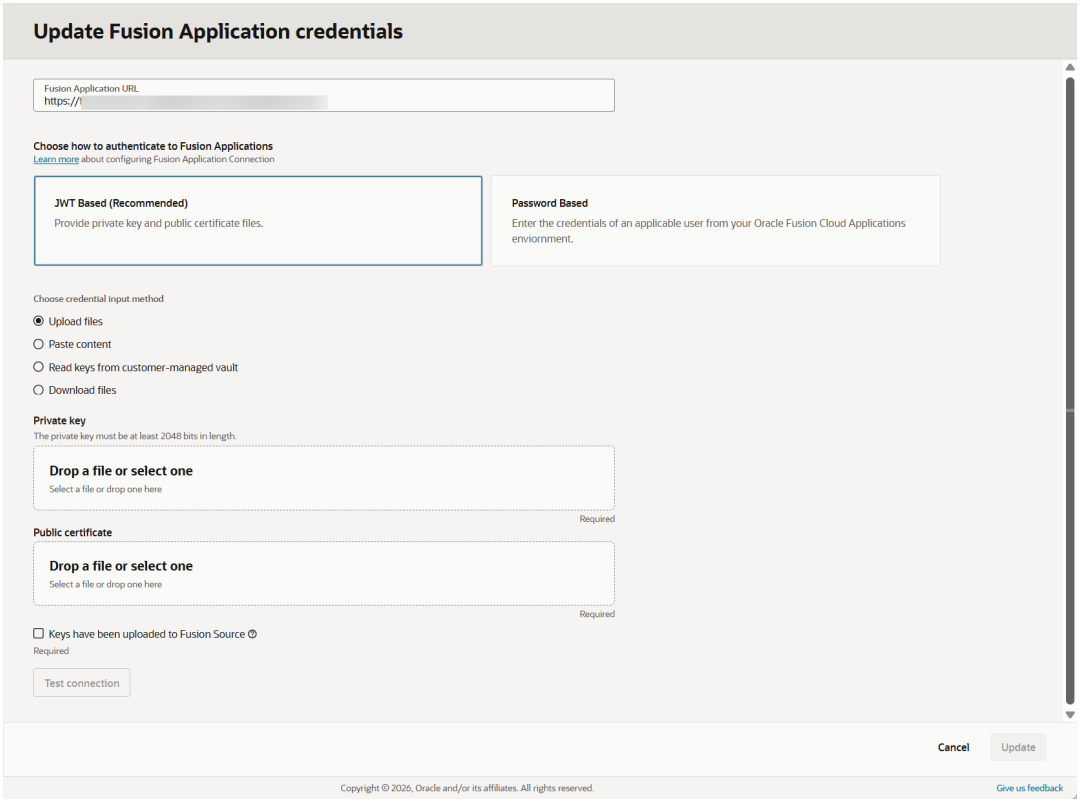
4. On the Instances page, click the instance for which you want to update the Oracle Fusion Cloud Applications password.
5. On the instance details page, click Actions and then select **Update Fusion connection**.
6. In Update Fusion Application credentials, enter the new URL and select the type of authentication you want to use: **JWT Based** or **Password Based**.
   - If you choose **JWT Based**, provide the private key and public certificate files by either uploading, or copying and pasting, or by reading from your vault. Select **Keys have been uploaded to Fusion Source** to enable **Test Connection**.

     > **Note**
     >
     > See Configure JWT Authentication Provider. While configuring the token-based authentication, ensure that you enter `FAWServiceJWTIssuer` as the trusted issuer.
     >
     > Ensure that the generated RSA encryption private key contains at least 2048 characters and that you wait at least 15 minutes for the uploaded public certificate to become effective in your Oracle Fusion Cloud Applications instance.

   - If you choose **Password Based**, then enter the credentials of an applicable user, such as `MyFAWExtractUser` from your Oracle Fusion Cloud Applications instance in **Username** and **Password**.



7. Click **Test Connection** to verify the updated connection details.

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8. Click **Save Changes**.

Update Your Subscriptions

You can increase the number of users in an existing Oracle Fusion Data Intelligence subscription or add a new subscription to your existing Oracle Fusion Data Intelligence subscription by contacting your sales representative.

For example, you can add the Oracle Fusion HCM Analytics service to your existing Oracle Fusion Data Intelligence subscription that already has Oracle Fusion ERP Analytics. You can replace an expired subscription with an active subscription that meets your business requirements.

You can monitor the offering updates, know how to fix update issues, and resume update after resolving the issues. After your order for addition or modification of subscriptions is processed, you'll receive an email informing you that your order has been processed and the subscriptions have been updated.

Oracle Fusion Data Intelligence automatically updates when you subscribe or unsubscribe offerings.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon in the top left corner.
3. Click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.
4. On the Instances page, click the instance for which you want to update the subscriptions.
5. In **Offerings**, select the applicable subscription and verify that the changes to your subscriptions match the order of subscription updates.

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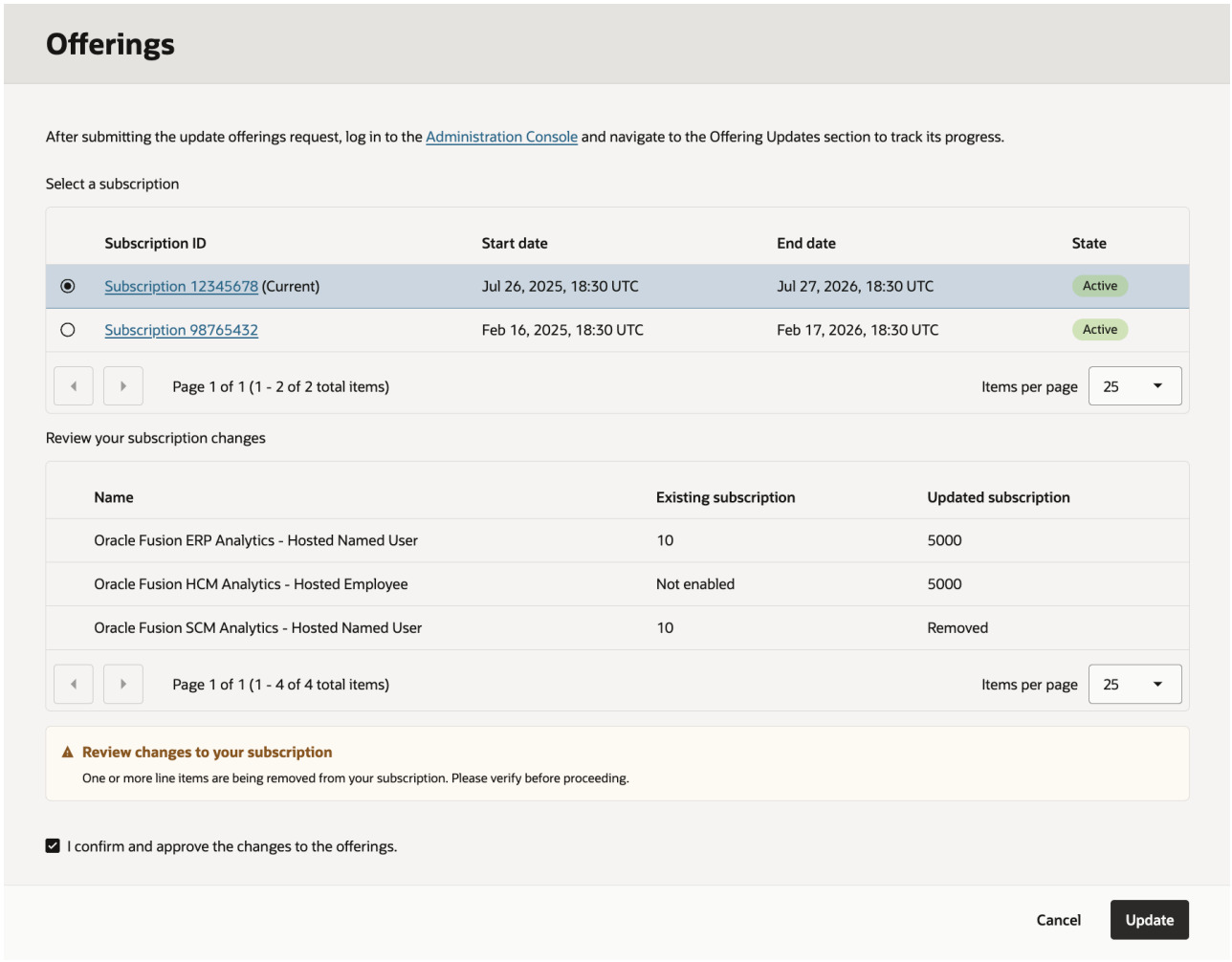
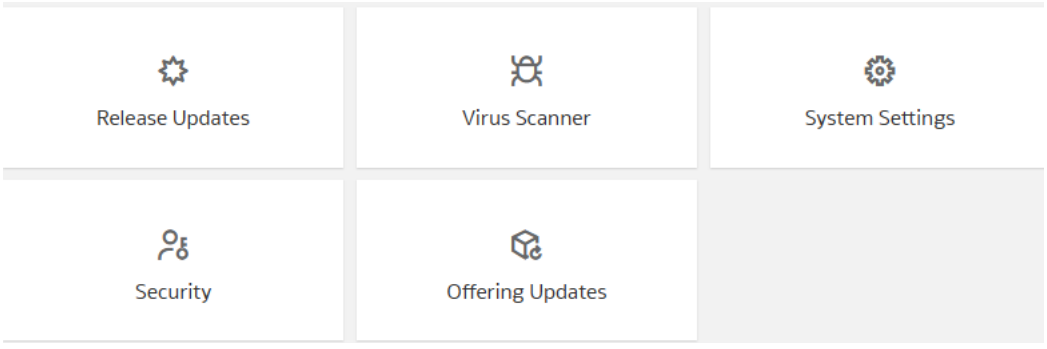


6. Click the acknowledgment checkbox to confirm your changes and then click **Update** .

   After you submit the request, the subscription details are updated for the instance.

7. Sign into Oracle Fusion Data Intelligence and on the Administration Console, click **Offering Updates** under **Service Administration**.



8. On the Offering Updates page, monitor the offering updates.
9. For offering updates with **Failed** status, click the status to view the details. In Details, click **More Details** to know the appropriate action you can take to resolve the issue and click **OK** to close the Details dialog. After resolving the issue, select the **Necessary steps are performed** checkbox and click **Resume update**.

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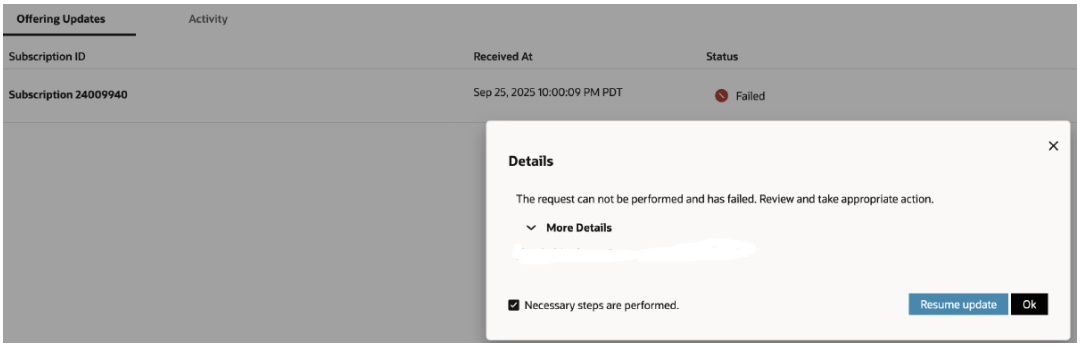

Update the Administrator Password for Oracle Autonomous AI Lakehouse

Update the `ADMIN` schema password for the Oracle Autonomous AI Lakehouse that's provisioned in your tenancy if the password for that `ADMIN` schema has changed.

You need to be either an Oracle Cloud Infrastructure administrator or an administrator user with the necessary privileges to sign in and reset the password for the `ADMIN` schema.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon in the top left corner.
3. Click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.
4. On the Instances page, click the instance for which you want to update the administrator password for the Oracle Autonomous AI Lakehouse that's provisioned in your tenancy.
5. On the instance details page, click the **Name** URL under Oracle Autonomous AI Lakehouse.
6. On the **Autonomous AI Database** details page, from the **More actions** drop-down list, select **Administrator password**.
7. In the Administrator password dialog, enter the new password, confirm, and then click **Change**.

Rotate the Wallet for the Oracle Autonomous AI Lakehouse

Wallet rotation ensures that your database credentials are periodically refreshed. Rotating the Oracle Autonomous AI Lakehouse Wallet is essential for maintaining the security and compliance of your Oracle Fusion Data Intelligence instance.

Topics:

- About Wallet Rotation for the Oracle Autonomous AI Lakehouse
- Configure the Wallet Rotation Frequency for the Oracle Autonomous AI Lakehouse

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About Wallet Rotation for the Oracle Autonomous AI Lakehouse

To maintain a secure connection to the autonomous warehouse and meet compliance requirements, Oracle Fusion Data Intelligence automatically rotates the wallet for the Oracle Autonomous AI Lakehouse every 90 days (the default frequency).

See About Wallet Rotation.

You're notified of the impending rotation through email 15 days, and then 7 days, in advance. If you've already rotated your instance wallet within the 90 days, the 3-month window starts from the date you rotated the wallet.

Oracle Fusion Data Intelligence allows a grace period of up to 72 hours for the previous wallet to overlap with the new wallet.

After Oracle Fusion Data Intelligence automatically rotates your wallet, a banner displays on the Administration Console and on the instance Details page, informing you that a new wallet is available for download.

Download the new wallet. See Rotate Wallets for Autonomous AI Database

> **Note**
>
> Oracle Fusion Data Intelligence doesn't automatically rotate the regional wallet. Ensure that you rotate your regional wallet every 90 days.

Configure the Wallet Rotation Frequency for the Oracle Autonomous AI Lakehouse

Oracle Fusion Data Intelligence automatically rotates your Oracle Autonomous AI Lakehouse wallet if you don't rotate it within 90 days or within the rotation frequency you selected.

To meet your organizational compliance standards, you have the option to configure a different rotation frequency for the Oracle Autonomous AI Lakehouse wallet.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. Click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.
3. On the Instances page, click the instance for which you want to view the wallet details or reset the wallet frequency.
4. On the Oracle Fusion Data Intelligence instance details page, view the **Instance wallet rotation** details:

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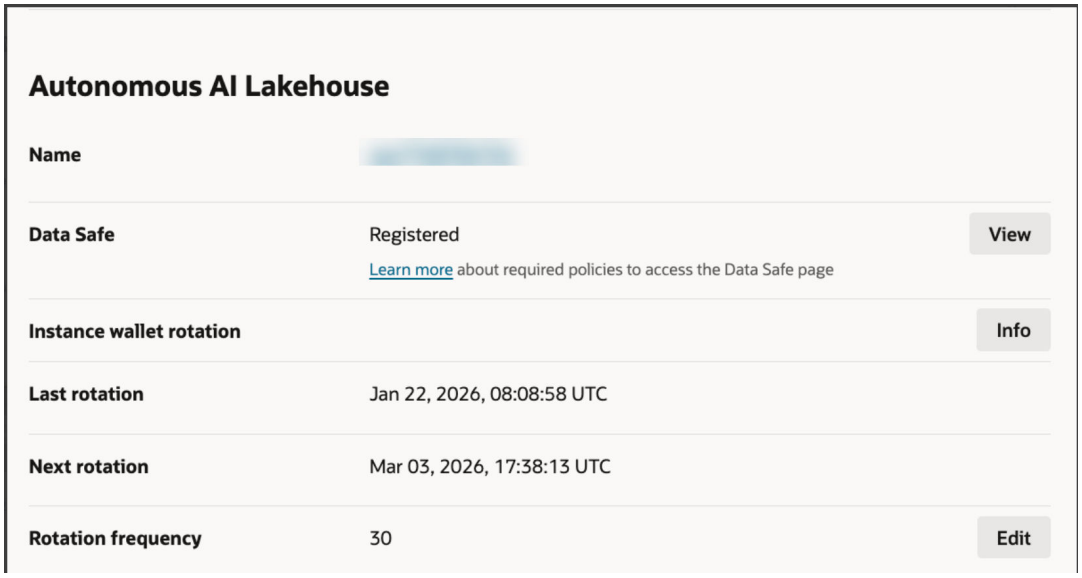
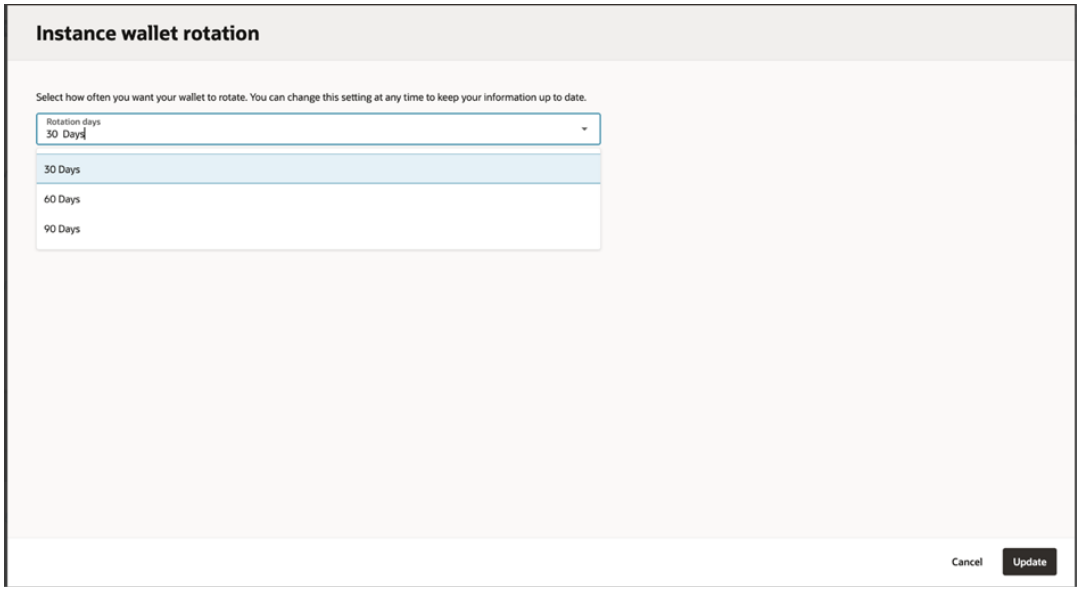


5. Click **Edit** to change the frequency of the rotation.
   a. Select an option: **30 Days**, **60 Days**, or **90 Days**.
   b. Click **Update**.



A message confirms when the wallet rotation frequency is updated.

Reset the Password for OAX_USER and Custom Schemas

Oracle Fusion Data Intelligence provides default schemas (also known as users) such as the `ADMIN` schema and `OAX_USER` schema. You can create custom schemas to meet your customization requirements.

The `OAX_USER` and custom schemas enable you to run your own SQL queries against the database or sign in and view the data in the tables of the associated Oracle Autonomous AI

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Lakehouse instance. The security policy of Oracle Autonomous AI Lakehouse requires you to change the passwords for the custom schemas every 365 days.

> **Note**
>
> To reset the password for the custom schemas, you need to be either an Oracle Cloud Infrastructure administrator or a database administrator with the `ALTER USER` system privilege. See ALTER user.

You can change the password for the `OAX_USER` and custom schemas using either SQL Developer or the Oracle Cloud Infrastructure Console. To change the password using SQL Developer, sign in to SQL Developer using the credentials of the `ADMIN` schema and run the command that's suggested to use while changing the password from the Oracle Cloud Infrastructure Console.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. Click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.
3. On the Instances page, click the instance for which you want to reset the password.
4. On the Oracle Fusion Data Intelligence instance details page, click the URL of the Oracle Autonomous AI Lakehouse instance.
5. On the **Autonomous AI Database** instance details page, click **Database Actions**. At this point, you need to sign in to the database using the `ADMIN` schema credentials.
6. On the Database Actions page, click **SQL** and run the following command to change the password:

   ```
   Alter user <schema name> identified by <Password>;
   ```

Terminate Instances

You can terminate instances that are active or have failed and you don't need them anymore.

When you terminate an active instance, the associated Oracle Analytics Cloud and Oracle Autonomous AI Lakehouse instances along with data and customizations are deleted. However, the users and groups that were created in Oracle Identity Cloud Service aren't deleted during this process.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon in the top left corner.
3. Click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.
4. On the Instances page, use either of the options:
   - Click **Actions** for an instance with **Failed** status, and then from **Actions**, click **Terminate**.
   - Click the instance with **Failed** status to open the instance details page and then on the instance details page, **Terminate**.
5. In Confirm terminate, verify the instance name and select **Terminate Instance**.

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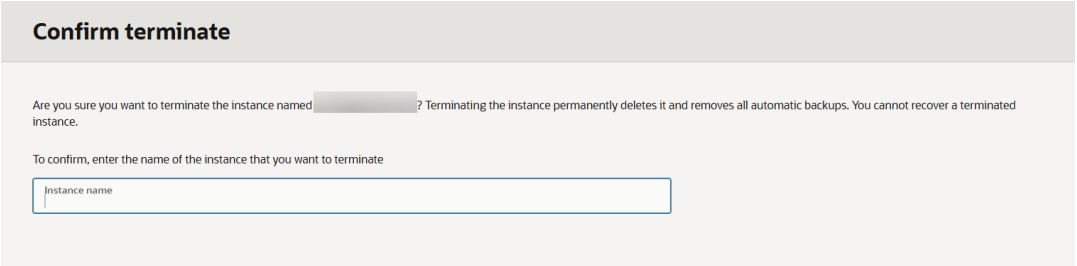


Move the Oracle Fusion Data Intelligence Instance to Another Compartment

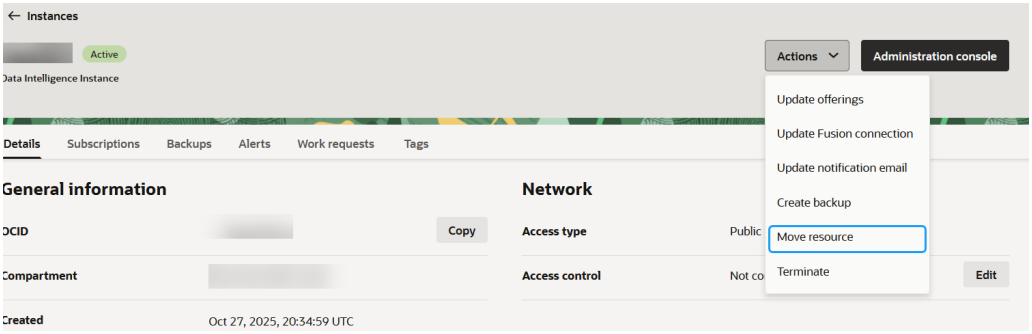
As the cloud account administrator, you can move your Oracle Fusion Data Intelligence instance to another Oracle Cloud Infrastructure compartment after you've created the instance.

You may want to move the instance from one compartment to another if you're redesigning or modifying the compartment structure.

> **Note**
>
> You can move resources to another compartment only in a standalone Oracle Fusion Data Intelligence instance. The option to move your resources to another compartment is not supported in an integrated instance.

When you move the Oracle Fusion Data Intelligence instance to another compartment, the Oracle Analytics Cloud and Oracle Autonomous AI Lakehouse instances associated with your Oracle Fusion Data Intelligence instance automatically move to the new compartment of your Oracle Fusion Data Intelligence instance.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon.
3. Click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.
4. On the Instances page, use either of the options:
   - Click **Actions** for an instance whose compartment you want to move, and then from **Actions**, click **Move Resource**.
   - Click the instance whose compartment you want to move to open the instance details page and then on the instance details page, click **Actions** and then click **Move resource**.



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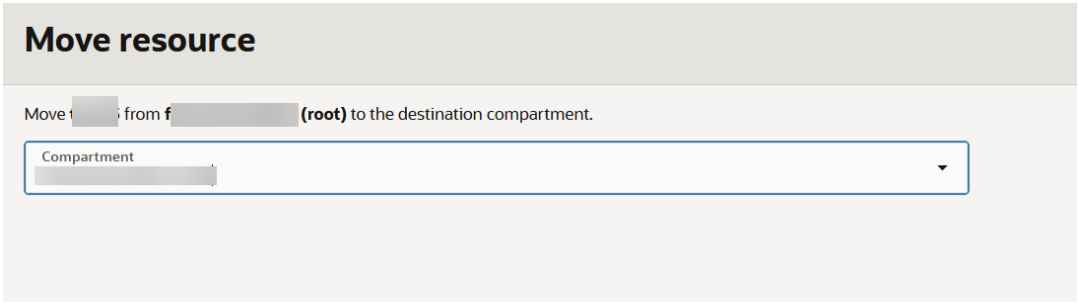
5. In Move resource, select a compartment in and then click **Move resource**.



Update the Notification Email

You can view and update the notification email address set for an instance on the instance details page.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon in the top left corner.
3. Click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.
4. On the Instances page, click an instance to open the instance details page.
5. On the instance details page, click Actions and then select **Update notification email** to modify the current notification email address.
6. In Update notification email, enter the email address and click **Update**.

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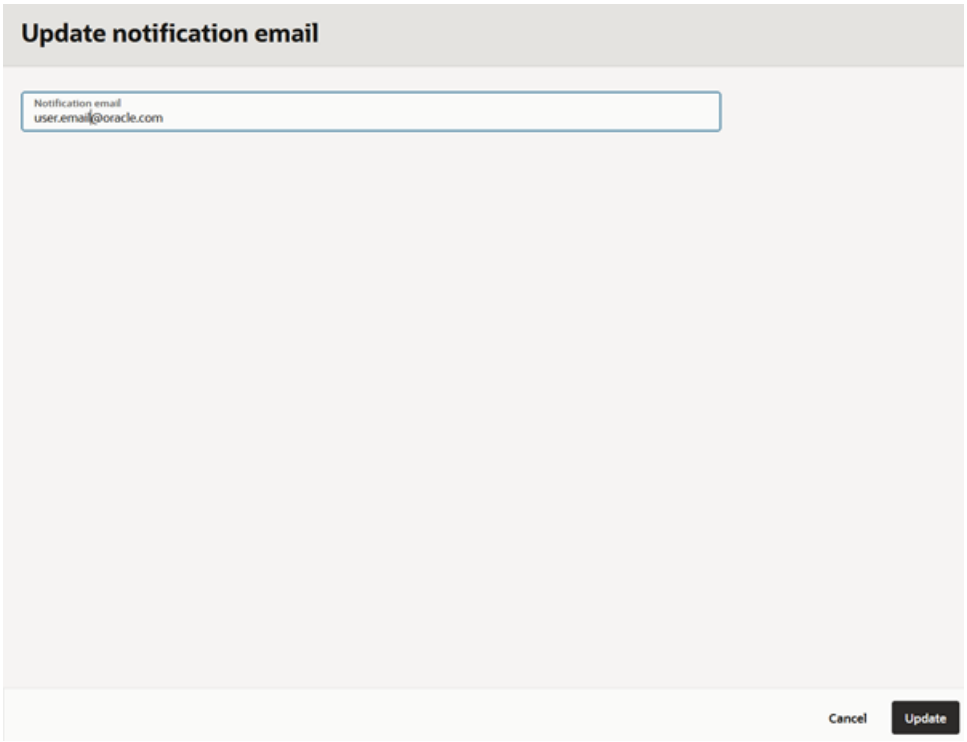

Scale Up Oracle Autonomous AI Lakehouse

Oracle Fusion Data Intelligence provides the associated Oracle Autonomous AI Lakehouse with certain capacities that are within its service limits.

If you require additional storage or compute units (ECPUs) to meet your workload requirements, then you can scale up Oracle Autonomous AI Lakehouse associated with Oracle Fusion Data Intelligence. Any scale up of the ECPUs or storage initially provisioned by Oracle Fusion Data Intelligence *is metered immediately resulting in Oracle Cloud Infrastructure charges*; see Cost and Usage Reports to view the additional usage and cost of your added Oracle Autonomous AI Lakehouse ECPUs or storage.

As a service administrator, you can scale up the default capacities within the service limits. You can view the service limits of Oracle Autonomous AI Lakehouse associated with your Oracle Fusion Data Intelligence service using the Limits, Quotas and Usage page in the Oracle Cloud Infrastructure Console. See Viewing Your Service Limits, Quotas and Usage. You can submit a request to increase your service limits from **Limits, Quotas, and Usage** page in Oracle Cloud Infrastructure Console. See Requesting a Service Limit Increase.

> **Note**
>
> While scaling up the initial ECPUs or storage, if you see a message that says the service limits were exceeded, you must subscribe for universal credits. See Important – Read Before Activating and Activate the Universal Credits Subscription.

After increasing or decreasing the ECPU count, you must run a pipeline incremental job for the ECPU count changes to take effect. After the incremental run, perform the following for the new maximum connection limit to be applied:

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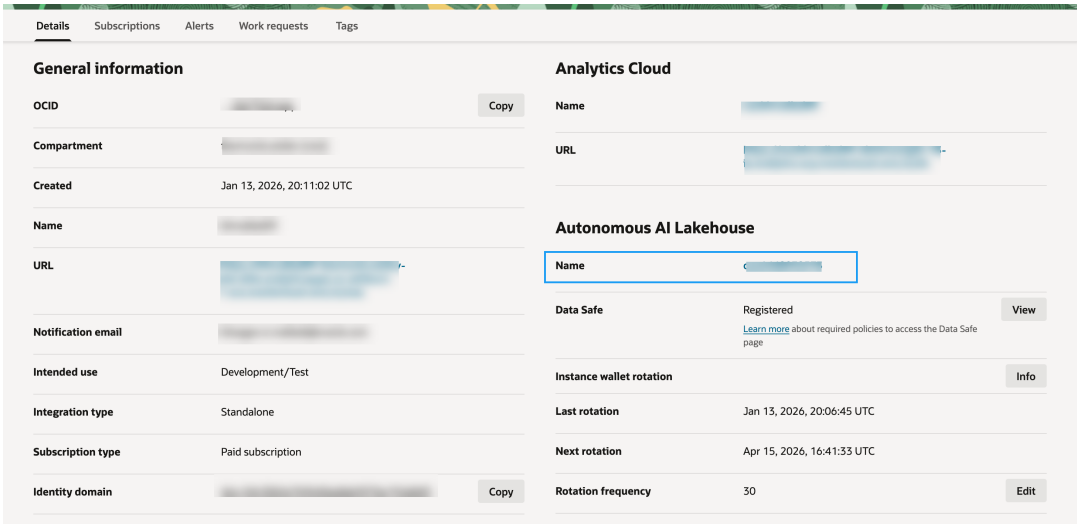
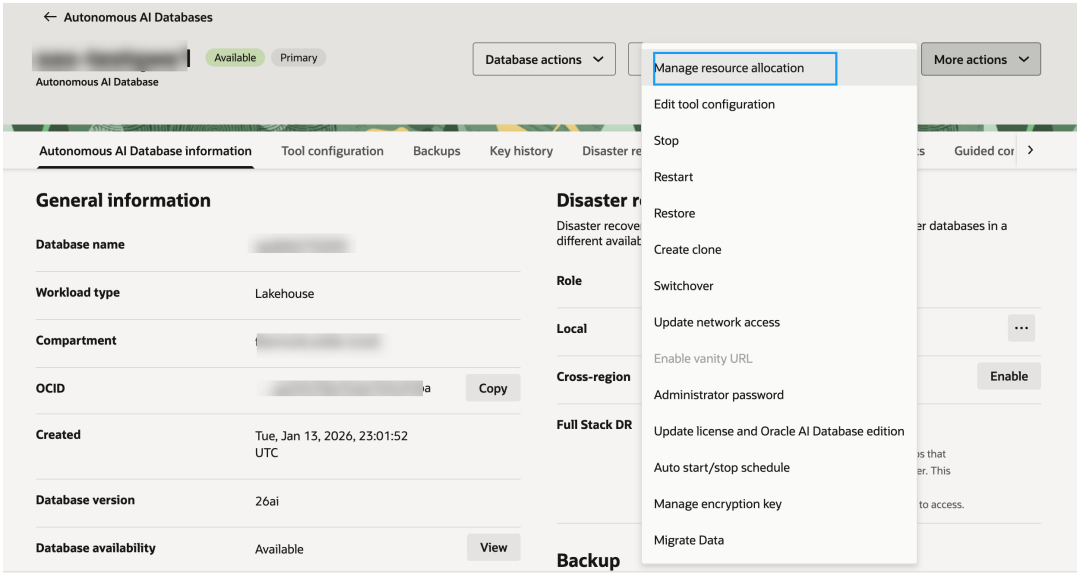
- Publish the semantic model in your test or development instance. See Publish Model.
- Import and deploy a semantic model bundle in your production instance. See Import a Bundle and Deploy a Bundle.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon.
3. In the navigation options, click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.
4. Navigate to your service instances page.
5. On the Instances page, click the instance for which you want to view the details.
6. On the instance details page, click the **Name** under Autonomous AI Lakehouse.



7. On the Autonomous AI Database instance details page, click More actions and then select **Manage resource allocation**.



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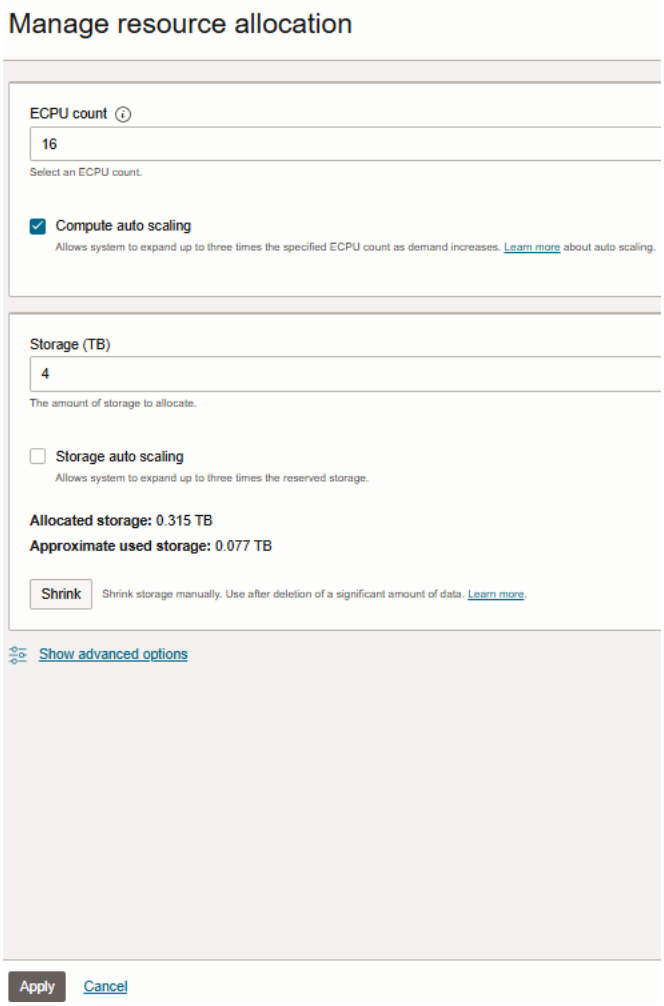
8. In Manage resource allocation:
   a. To increase the compute units, in **ECPU count**, enter the required value or select **Compute auto scaling** to enable expansion of the provisioned compute units as workload expands.
   b. To increase storage capacity, in **Storage (TB)** enter a value or click the up arrow to select a value and then click **Apply**.



Change Oracle Analytics Cloud Capacity

Oracle Fusion Data Intelligence provides the associated Oracle Analytics Cloud with certain OCPUs that are within its service limits.

As a service administrator, you can scale up the default Oracle Analytics Cloud OCPUs within the Oracle Analytics Cloud service limits. Any added Oracle Analytics Cloud OCPUs *are metered immediately resulting in Oracle Cloud Infrastructure charges*; see Cost and Usage Reports to view the additional usage and cost of your added Oracle Analytics Cloud OCPUs.

You can view the service limits of Oracle Analytics Cloud associated with your Oracle Fusion Data Intelligence service using the Limits, Quotas and Usage page in the Oracle Cloud Infrastructure Console. See Viewing Your Service Limits, Quotas and Usage. You can submit a

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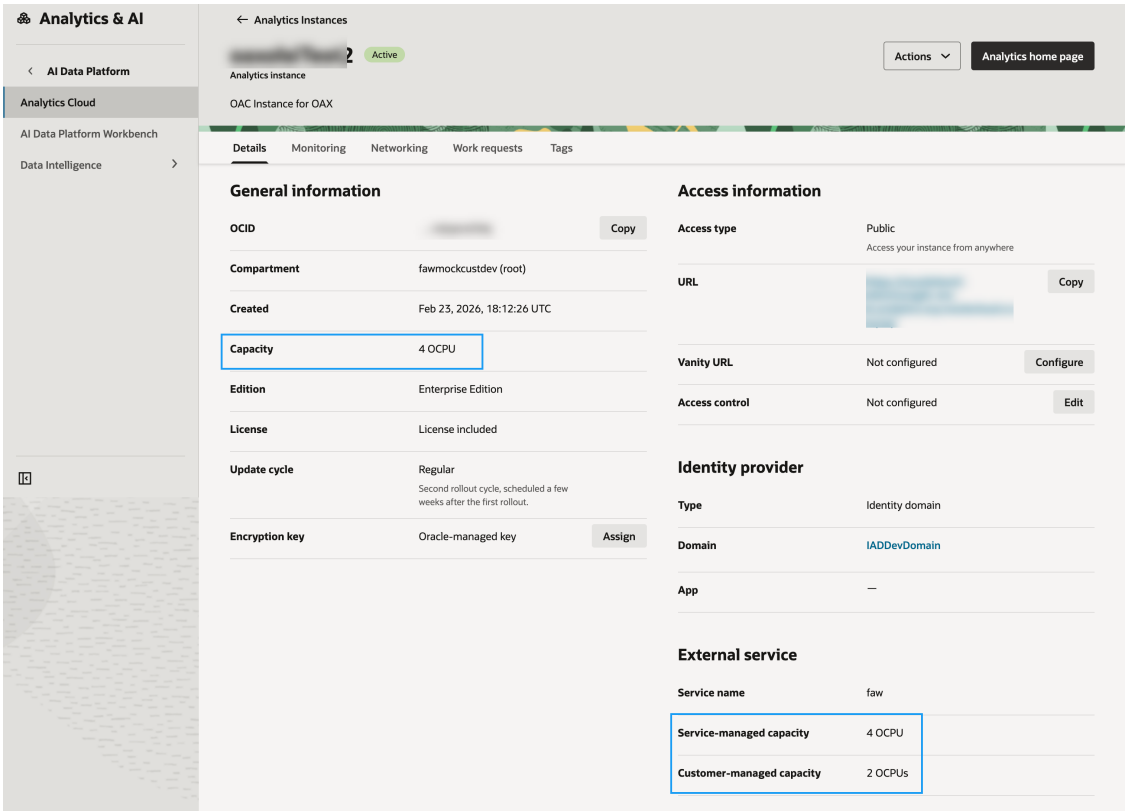
request to increase your service limits from **Limits, Quotas, and Usage** page in Oracle Cloud Infrastructure Console. See Requesting a Service Limit Increase.

You can view the service managed and customer managed capacity for the associated Oracle Analytics Cloud instance in the Additional Details tab on the Oracle Analytics Cloud instance details page. For example, if you've a total capacity of 6 OCPUs, you may see 4 as Service Managed Capacity and 2 as Customer Managed Capacity. You can only change the customer managed capacity and you can't change the capacity below the service managed capacity, for example, you can't change total capacity to 2 OCPU. All Oracle Analytics Cloud OCPUs under Customer Managed Capacity are *metered immediately resulting in Oracle Cloud Infrastructure charges*; see Cost and Usage Reports to view the additional usage and cost of your customer managed Oracle Analytics Cloud OCPUs.



1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon.
3. In the navigation options, click **Analytics & AI**. Under AI Data Platform, click **Data Intelligence**.
4. Navigate to your service instances page.
5. On the Instances page, click the instance for which you want to view the details.
6. On the instance details page, click the **Name** under Analytics Cloud.

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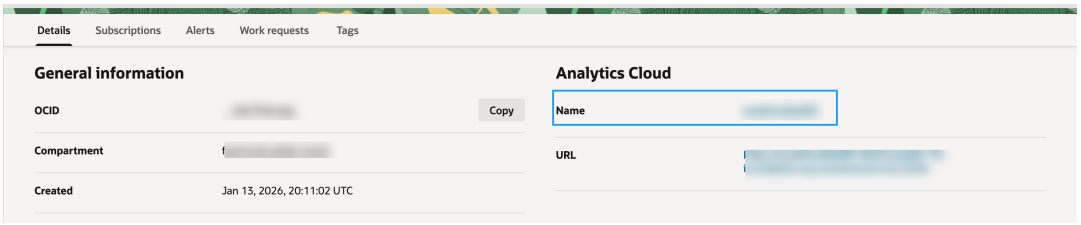
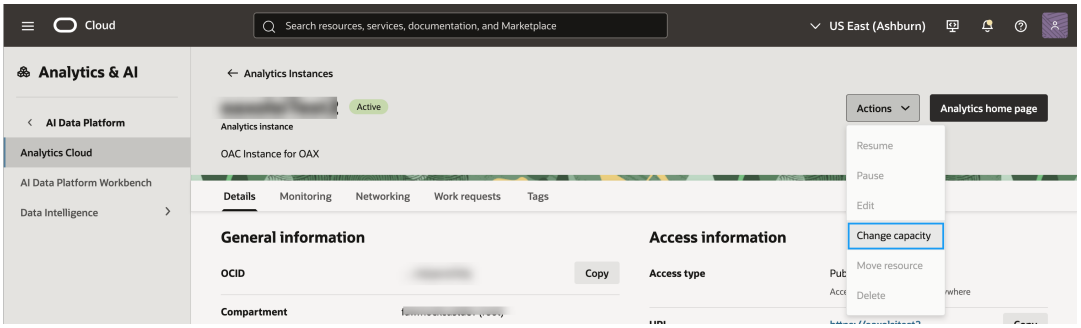
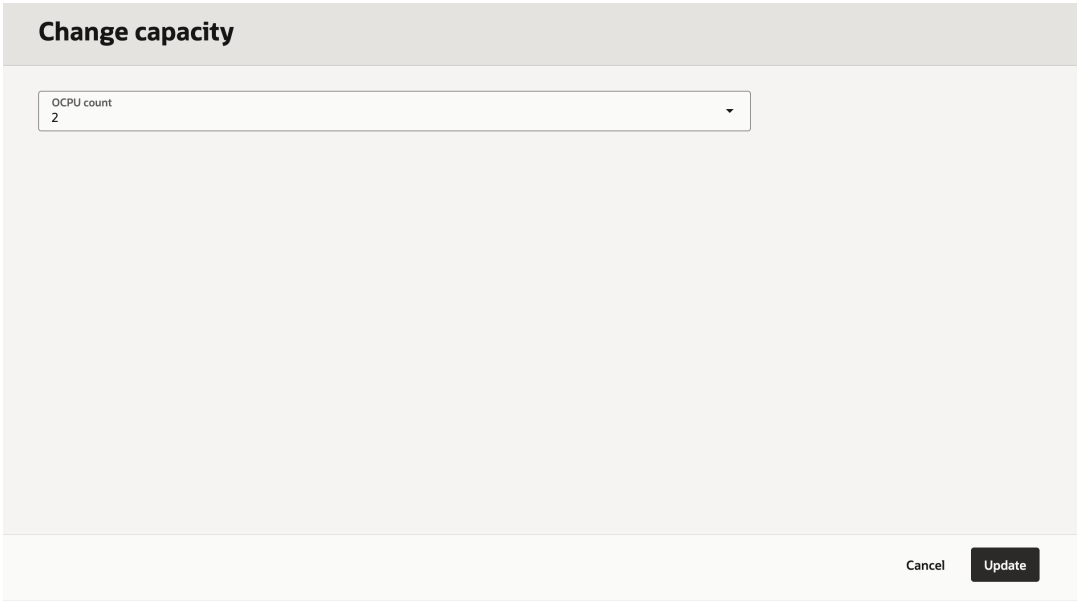


7. On the Oracle Analytics Cloud instance details page, click **Actions** and then click **Change capacity**.



8. In Change capacity, select the number of **OCPU Count** you want, and then click **Update**.

> **Note**
>
> The values available to you depend on how many OCPUs your service currently uses. Remember that you can add or remove capacity within the OCPU range of your service.



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Activate the Universal Credits Subscription

If you need universal credits for the specific scenarios described in the Important – Read Before Activating section, subscribe for UCC.

On receiving the Welcome email, activate the new Universal Credits (UCC) subscription into your existing Oracle Fusion Cloud Applications account using the **Add to existing cloud account** option in the UCC Welcome email. See Important – Read Before Activating.

> **Note**
>
> If universal credits exist in your cloud account that has Oracle Fusion Cloud Applications, you don’t need to subscribe and activate a new UCC subscription. You can use the existing universal credits for the specific scenarios.

If you don't see your existing Oracle Fusion Cloud Applications account when selecting the cloud account to activate into, stop and submit a service request against “Fusion Data Intelligence” in My Oracle Support so that it gets routed to the correct team. For this service request, select **Significant Impairment** as **Issue Type** and in **Problem Type**, click **Activate, Create, Delete, Manage FDI Instance** and then select **FDI Activation**. Ensure that you include the account name you're trying to activate into, along with a screenshot showing that you’ve been assigned this role in that Cloud account.

1. Locate your UCC Welcome email.

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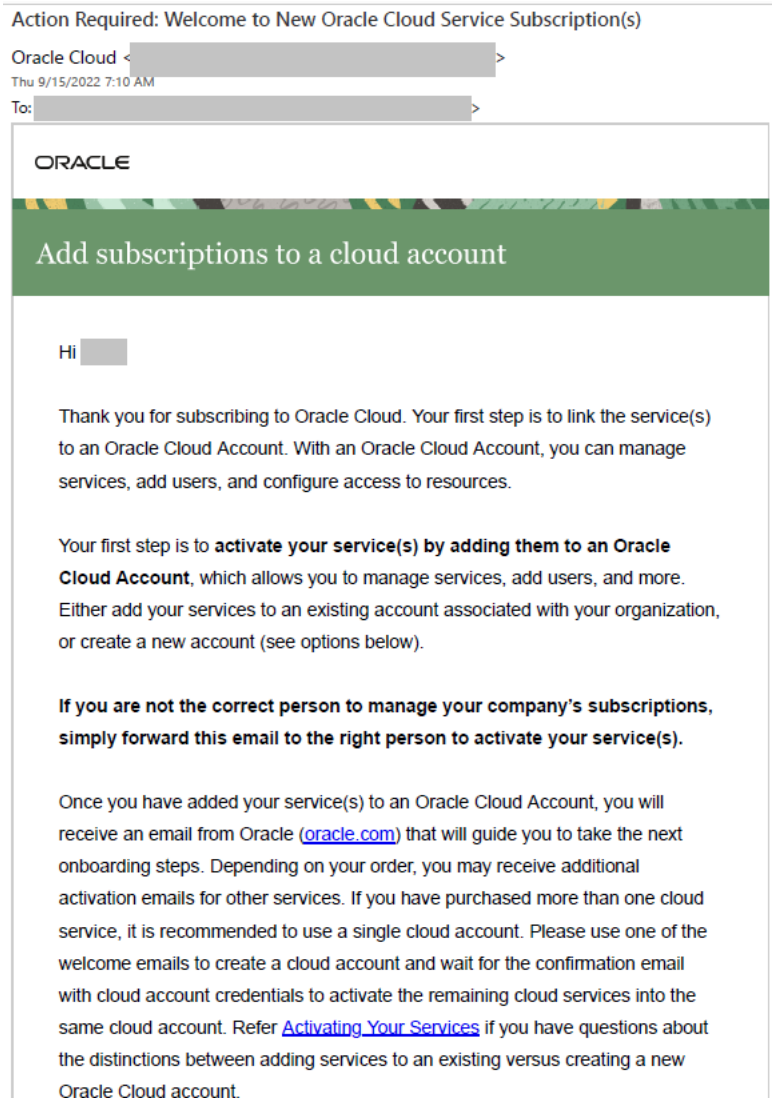
Action Required: Welcome to New Oracle Cloud Service Subscription(s)

Oracle Cloud <[redacted]>
Thu 9/15/2022 7:10 AM
To: [redacted]>

ORACLE

Add subscriptions to a cloud account

Hi [redacted]

Thank you for subscribing to Oracle Cloud. Your first step is to link the service(s) to an Oracle Cloud Account. With an Oracle Cloud Account, you can manage services, add users, and configure access to resources.

Your first step is to **activate your service(s) by adding them to an Oracle Cloud Account**, which allows you to manage services, add users, and more. Either add your services to an existing account associated with your organization, or create a new account (see options below).

If you are not the correct person to manage your company's subscriptions, simply forward this email to the right person to activate your service(s).

Once you have added your service(s) to an Oracle Cloud Account, you will receive an email from Oracle (oracle.com) that will guide you to take the next onboarding steps. Depending on your order, you may receive additional activation emails for other services. If you have purchased more than one cloud service, it is recommended to use a single cloud account. Please use one of the welcome emails to create a cloud account and wait for the confirmation email with cloud account credentials to activate the remaining cloud services into the same cloud account. Refer Activating Your Services if you have questions about the distinctions between adding services to an existing versus creating a new Oracle Cloud account.

2. In the UCC Welcome email, click **Add to existing cloud account**.

> **Note**
>
> The name of the service in the body of this Welcome email is "Oracle PaaS and IaaS Universal Credits".

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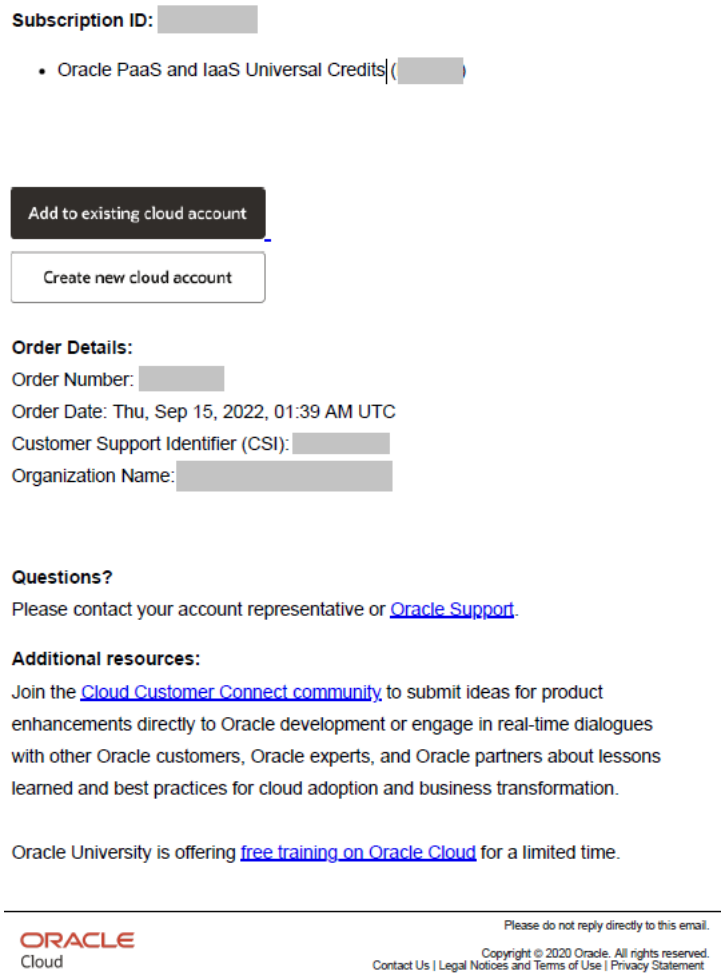
Subscription ID:

- Oracle PaaS and IaaS Universal Credits (

Add to existing cloud account

Create new cloud account

Order Details:
Order Number:
Order Date: Thu, Sep 15, 2022, 01:39 AM UTC
Customer Support Identifier (CSI):
Organization Name:

Questions?
Please contact your account representative or Oracle Support.

Additional resources:
Join the Cloud Customer Connect community to submit ideas for product enhancements directly to Oracle development or engage in real-time dialogues with other Oracle customers, Oracle experts, and Oracle partners about lessons learned and best practices for cloud adoption and business transformation.

Oracle University is offering free training on Oracle Cloud for a limited time.

ORACLE Cloud

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3. Follow the instructions in Add the New Cloud Service to an Existing Oracle Cloud Account.

> **Note**
>
> It can take up to an hour for the activation process to finish. Once it completes, you'll receive an email with the subject "Your services are ready!". Ensure that you don't proceed to the next step until you have received this email.

Provide Your Encryption Key for Oracle Autonomous AI Lakehouse

You can change the default encryption key for Oracle Autonomous AI Lakehouse associated with your Oracle Fusion Data Intelligence instance if your security policies require it.

Oracle Autonomous AI Lakehouse provides two options for Transparent Data Encryption (TDE) to encrypt your database: Oracle-managed encryption keys and Customer-managed encryption keys. By default, the Oracle Autonomous AI Lakehouse associated with Oracle Fusion Data Intelligence is set up using the Oracle-managed key. If your organization's security policies require customer-managed encryption keys, then you can configure Oracle Autonomous AI Lakehouse to use an Oracle Cloud Infrastructure Vault master encryption key. With customer-managed master encryption keys, Oracle Autonomous AI Lakehouse uses the

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master encryption key to generate the TDE master key. However, if your organizational policies change, you can revert to the Oracle-managed key. See Manage Encryption Keys on Autonomous Database.

Configure Advanced Options

You can set several advanced options using the Console.

Topics:

- About Advanced Configuration
- Set Advanced Options

About Advanced Configuration

Service administrators can set the advanced, service-level options using the Advanced System Settings page in Oracle Analytics Cloud Console.

Most Oracle Analytics Cloud Advanced System Settings are available in Oracle Fusion Data Intelligence. Settings that don't apply are configured elsewhere or managed by Oracle.

Oracle Fusion Data Intelligence uses a earlier version of Oracle Analytics Cloud compared to a standalone Oracle Analytics Cloud version. Some of the system settings in Oracle Analytics Cloud might not be available in Oracle Fusion Data Intelligence.

Set Advanced Options

Use the Advanced System Settings page in Oracle Analytics Cloud Console to set up advanced options for Oracle Fusion Data Intelligence.

1. In Oracle Fusion Data Intelligence, navigate to the Oracle Analytics Cloud Home page, and then click **Console**.
2. Click **Advanced System Settings**.
3. On the Advanced System Settings page, select the system setting you want to configure.

System Setting	More Information
Analytic Content	Use the analytic content 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. See Analytic Content System Settings.
Currency	Use the currency settings to configure default currency settings for analyses and dashboards. See Currency System Settings.
Email from Delivers	Use these options to customize the way Oracle Analytics sends deliveries. See Email From Delivers System Settings.
Other	Use the settings to set the behavior for a variety of actions such as database queries, default URLs, display defaults, and sorting. See Other System Settings.

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System Setting	More Information
Performance and Compatibility	Use these options to configure the performance and compatibility settings between Oracle BI Enterprise Edition and Oracle Analytics. Oracle manages the following settings in Oracle Fusion Data Intelligence, so you can't configure them: • Always Use DBMS_RANDOM in Oracle Data Sources • Maximum Working File Percent Size • OBIEE Compatibility Release See Performance and Compatibility System Settings.
Preview	Use these system settings to turn some preview features on and off. The administrator turns a preview feature on so that your organization can evaluate and learn how to use new features before they are available by default in Oracle Analytics. See Preview System Settings.
Prompt	Use these options to configure the prompt behavior in analyses and dashboards. For example, enable search results to automatically display as highlighted when users enter search parameters, without the need to click Search. See Prompt System Settings
Security	Use these options to control how users can perform specific actions in analyses and dashboards. See Security System Settings. **Note** Oracle Fusion Data Intelligence doesn't support the **Enable Public Access** option.
Time	Use these options to configure the default time zone settings. See Time System Settings.
View	Use these options to configure the default search and viewing settings for users working with analyses and dashboards. See View System Settings

Configure the Access Control List

Access control lists ensure that unauthorized external entities can't access Oracle Fusion Data Intelligence resources. As a service administrator, you can configure Access Control Lists (ACLs) for Oracle Analytics Cloud (OAC) and Oracle Autonomous AI Lakehouse instances associated with Oracle Fusion Data Intelligence instances, directly from Oracle Fusion Data Intelligence enabling you to define, enforce, and manage network access policies from a centralized location instead of configuring them separately.

Note

You can configure the access control list for public Oracle Fusion Data Intelligence instances only.

To manage requests to access the Oracle Fusion Data Intelligence resources directly from the internet, configure the access control lists to allow only trusted IP addresses, virtual cloud networks, or CIDR blocks. The Oracle Analytics Cloud and Oracle Autonomous AI Lakehouse instances associated with the Oracle Fusion Data Intelligence instance adhere to the access control list that you define for Oracle Fusion Data Intelligence.

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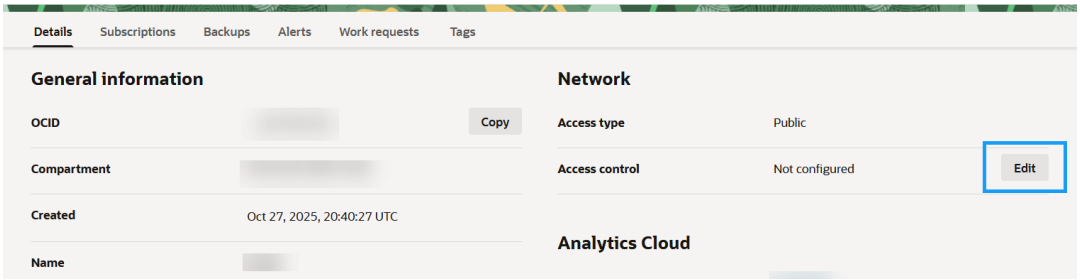
You can also define different access control rules for the associated Oracle Analytics Cloud and Oracle Autonomous AI Lakehouse. While configuring the access control list for the Oracle Fusion Data Intelligence instance, you can add a maximum of 19 rows of access control rules. The system has one access control rule by default.

As an existing user of Oracle Fusion Data Intelligence, if you've configured the access control list for Oracle Analytics Cloud and Oracle Autonomous AI Lakehouse separately, you can continue to use them. However, if you enable and configure new access controls from the Oracle Fusion Data Intelligence instance details page, the system displays a message alerting you that your existing access controls will be updated with the new access controls.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon in the top left corner.
3. Click **Analytics & AI** and then under AI Data Platform, click **Data Intelligence**.
4. On the Instances page, click the Oracle Fusion Data Intelligence instance for which you want to configure the access control list.
5. On the instance details page, under **Network**, for **Access control**, click **Edit** to configure the access controls.



6. In Access control rules, click **Add access control rule**, specify the **Rule type** and the applicable **Target resources** for each rule type. Select and configure a rule type from the following options:
   - IP address
   - CIDR block
   - Virtual Cloud Network

> **Note**
>
> Fusion Data Intelligence isn't available as a target resource when you select Virtual Cloud Network as a Rule type.

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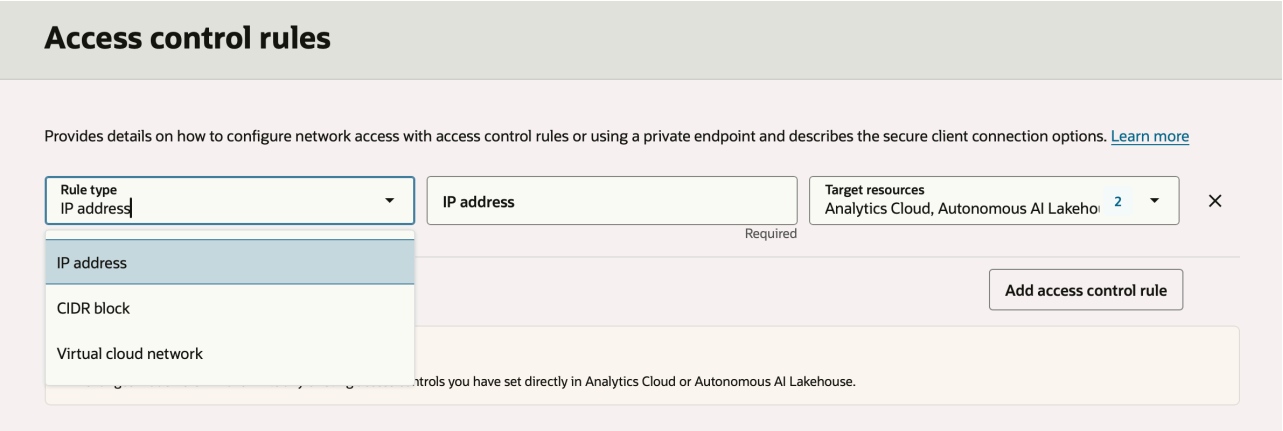
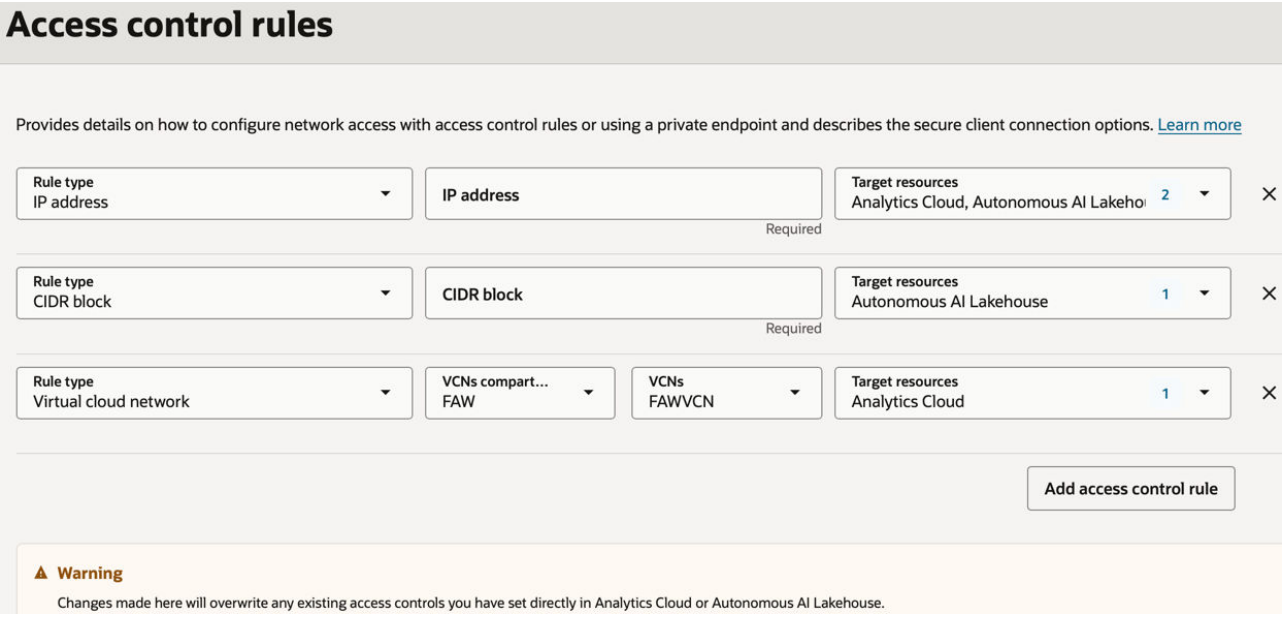


7. To add additional rules, click **Add access control rule** again.

   Configure access control rules for your target resources.



8. Click **Update**.

   Wait for a few minutes for your Access Control updates to display on the instance Details page.

Secure Autonomous AI Lakehouse Associated with Fusion Data Intelligence Using Data Safe

Oracle Data Safe helps you assess and manage the security of the Autonomous AI Lakehouse associated with Fusion Data Intelligence by understanding data sensitivity, evaluating risks, and implementing security controls.

See Use Oracle Data Safe with Autonomous Database.

Topics:

- About Securing Autonomous AI Lakehouse with Data Safe

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- Prerequisites to Enable and Use Data Safe
- Enable Data Safe
- Reset Data Safe
- Disable Data Safe

About Securing Autonomous AI Lakehouse with Data Safe

You can secure the Autonomous AI Lakehouse associated with the Oracle Fusion Data Intelligence instance using these features of Data Safe:

- Security Assessment: Configuration errors and configuration drift are significant contributors to data breaches. Security assessment provides reports on areas of risk and notifies you when configurations change.
- User Assessment: User Assessment helps you spot the riskiest database accounts, those accounts which if compromised could cause the most damage.
- Activity Auditing: Activity auditing collects audit records from databases and helps you manage audit policies.

There is no additional charge for using Data Safe. You can create 1 million audit records per target per month free. However, there is a charge if you want to continue audit data collection for target databases beyond the monthly free limit. You can update to paid usage using the Global Paid Usage setting in Data Safe. See View and Manage Global Settings for Oracle Data Safe. You can pay this charge using Oracle Universal Cloud Credits (UCC).

Prerequisites to Enable and Use Data Safe

Ensure to have the applicable user and service permissions in place to enable and use Data Safe in the Oracle Autonomous AI Lakehouse instance associated with the Oracle Fusion Data Intelligence instance. You must also ensure that the Oracle Autonomous AI Lakehouse instance allows network traffic from Data Safe.

The required permissions are:

- User permissions
  - General Oracle Cloud Infrastructure Identity and Access Management policies – Allow the user to list and add policies within the Oracle Cloud Infrastructure tenancy.
  - Data Safe policies – Allow the user to view and manage the Data Safe resources.
- Service permissions - Oracle Fusion Data Intelligence requires permission to enable Data Safe in the Autonomous AI Lakehouse of the Oracle Fusion Data Intelligence instance.

User Permissions to Manage Oracle Cloud Infrastructure Identity and Access Management Policies

The Oracle Cloud Infrastructure Console relies on the signed-in user's permission to list and create policies in the Oracle Cloud Infrastructure tenancy. Depending on the user's permissions, two scenarios apply:

- Scenario 1 – The user has permission to manage the Identity and Access Management policies (manage - both read and add new policies). In this situation, the Oracle Cloud Infrastructure Console verifies if the Data Safe policies for Oracle Fusion Data Intelligence service exist. If the policies are missing, the Console automatically creates the service policies. After this, the applicable user can create the Oracle Fusion Data Intelligence instance with Data Safe, or register existing instance with Data Safe.

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- Scenario 2 – User has permission only to read the Identity and Access Management policies. In this situation, the Oracle Cloud Infrastructure Console verifies if the Data Safe policies for Oracle Fusion Data Intelligence service exist. If the policies are already in place, the user can proceed to create the instance with Data Safe or register the existing instance with Data Safe. If the policies aren't present, the applicable user must disable the Enable Data Safe checkbox during Oracle Fusion Data Intelligence instance creation to continue or stop creating the instance and request the service administrator to configure the Identity and Access Management users, groups and write policies.

  While a service administrator can write the Identity and Access Management policies as per their requirement, these sample policies can be useful while creating and managing the Oracle Fusion Data Intelligence instances with Data Safe:

  ```
  allow group <identity_domain_name>/FDIDataSafeUsers to read compartments
  in tenancy
  allow group <identity_domain_name>/FDIDataSafeUsers to read domains in
  tenancy
  allow group <identity_domain_name>/FDIDataSafeUsers to manage policy in
  tenancy
  ```

- **Note**

  Replace `FDIDataSafeUsers` with the appropriate Identity and Access Management group.

User Permissions to View and Manage Data Safe Resources

When you enable Data Safe for the applicable Autonomous AI Lakehouse, Fusion Data Intelligence creates multiple Data Safe resources such as targetDataBase, auditPolicy, auditProfile, auditTrial, and alertPolicyAssociations among others. Create the following broad policy to manage the Data Safe resources in the tenancy:

```
allow group <identity_domain_name>/FDIDataSafeUsers to manage data-safe-
family in tenancy
```

Note

Replace `FDIDataSafeUsers` with the appropriate Identity and Access Management group.

However, as a service administrator, you can provide limited access to the applicable Identity and Access Management groups. See IAM Policies for Autonomous Database and Create IAM Policies for Oracle Data Safe Users.

Permission for Fusion Data Intelligence to Perform the Data Safe Operations

Fusion Data Intelligence requires permission to perform the Data Safe-related operations on the associated Autonomous AI Lakehouse. The system verifies that the signed-in user has permissions to list and add policies and if the signed-in user has the permissions and if the policies aren't yet created, the system creates these policies:

```
allow any-user to manage data-safe in tenancy where all
{request.principal.type = 'fawservice', request.principal.compartment.id =
```


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```
target.compartment.id}
allow any-user to manage data-safe-assessment-family in tenancy where all
{request.principal.type = 'fawservice', request.principal.compartment.id =
target.compartment.id}
allow any-user to manage data-safe-alert-family in tenancy where all
{request.principal.type = 'fawservice', request.principal.compartment.id =
target.compartment.id}
allow any-user to manage data-safe-audit-family in tenancy where all
{request.principal.type = 'fawservice', request.principal.compartment.id =
target.compartment.id}
allow any-user to manage virtual-network-family in tenancy where all
{request.principal.type = 'fawservice', request.principal.compartment.id =
target.compartment.id}
```

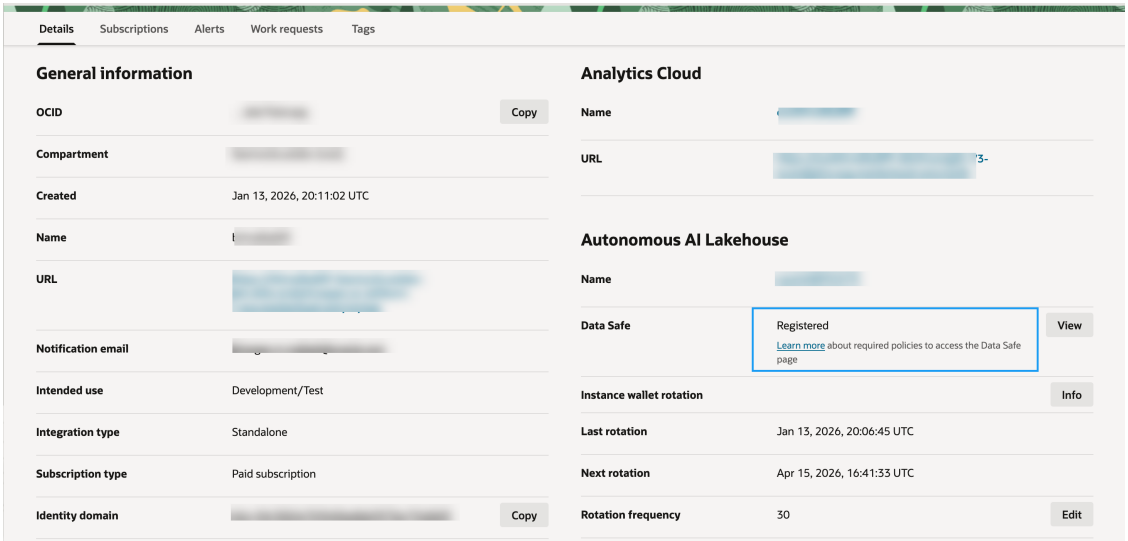
The system creates the Data Safe policies for Fusion Data Intelligence in the `FDI_ADW_Data_Safe_Policy` file in the root compartment of the tenancy. You must exercise caution when updating policy statements of this policy file to avoid restricting Fusion Data Intelligence to perform data safe operations on the Autonomous AI Lakehouse.

Network Access

Verify that the associated Autonomous AI Lakehouse instance allows network traffic from Data Safe. See Configure Network Access with Access Control Rules (ACLs) and Private Endpoints.

Enable Data Safe

For a new user of Oracle Fusion Data Intelligence from the Platform 25.R3 release, the Data Safe capability is enabled by default.



If you're an existing user, you can enable the Data Safe capability from the Oracle Fusion Data Intelligence instance details page. After enabling Data Safe, to know how to use the Data Safe capability, see Use Oracle Data Safe Features.

1. Sign in to the Oracle Cloud Infrastructure Console.

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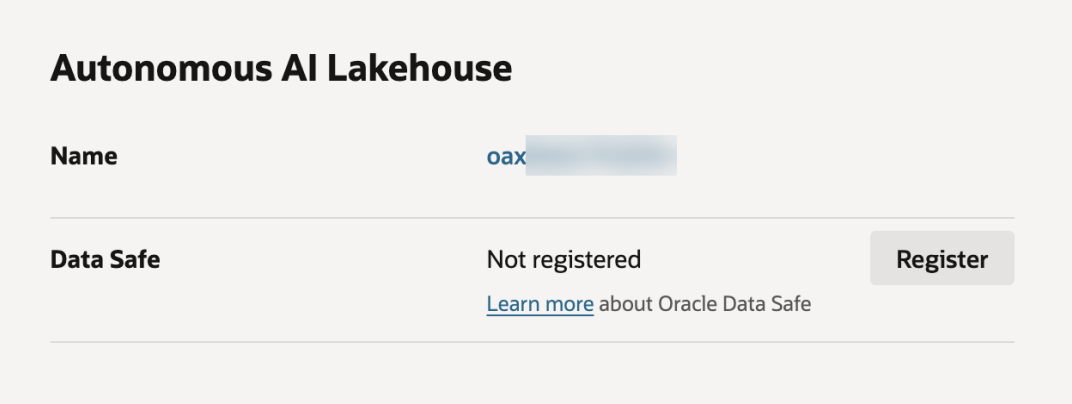
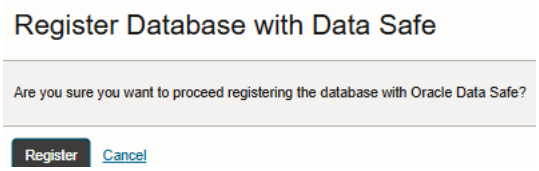
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon in the top left corner.
3. Click **Analytics & AI** and then under AI Data Platform, click **Data Intelligence**.
4. On the Instances page, click the Oracle Fusion Data Intelligence instance for which you want to enable Data Safe.
5. On the instance details page, under **Autonomous AI Lakehouse**, for **Data Safe**, click **Register**.



6. In Register Database with Data Safe, click **Register**.



Reset Data Safe

If you want to overwrite or replace the changes in the Data Safe capability, you can reset it. The Reset Data Safe option disables and enables Data Safe with the default Oracle Fusion Data Intelligence configuration.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon in the top left corner.
3. Click **Analytics & AI** and then under AI Data Platform, click **Data Intelligence**.
4. On the Instances page, click the Oracle Fusion Data Intelligence instance for which you want to reset Data Safe.
5. On the instance details page, click **Actions**, and then click **Reset Data Safe**.

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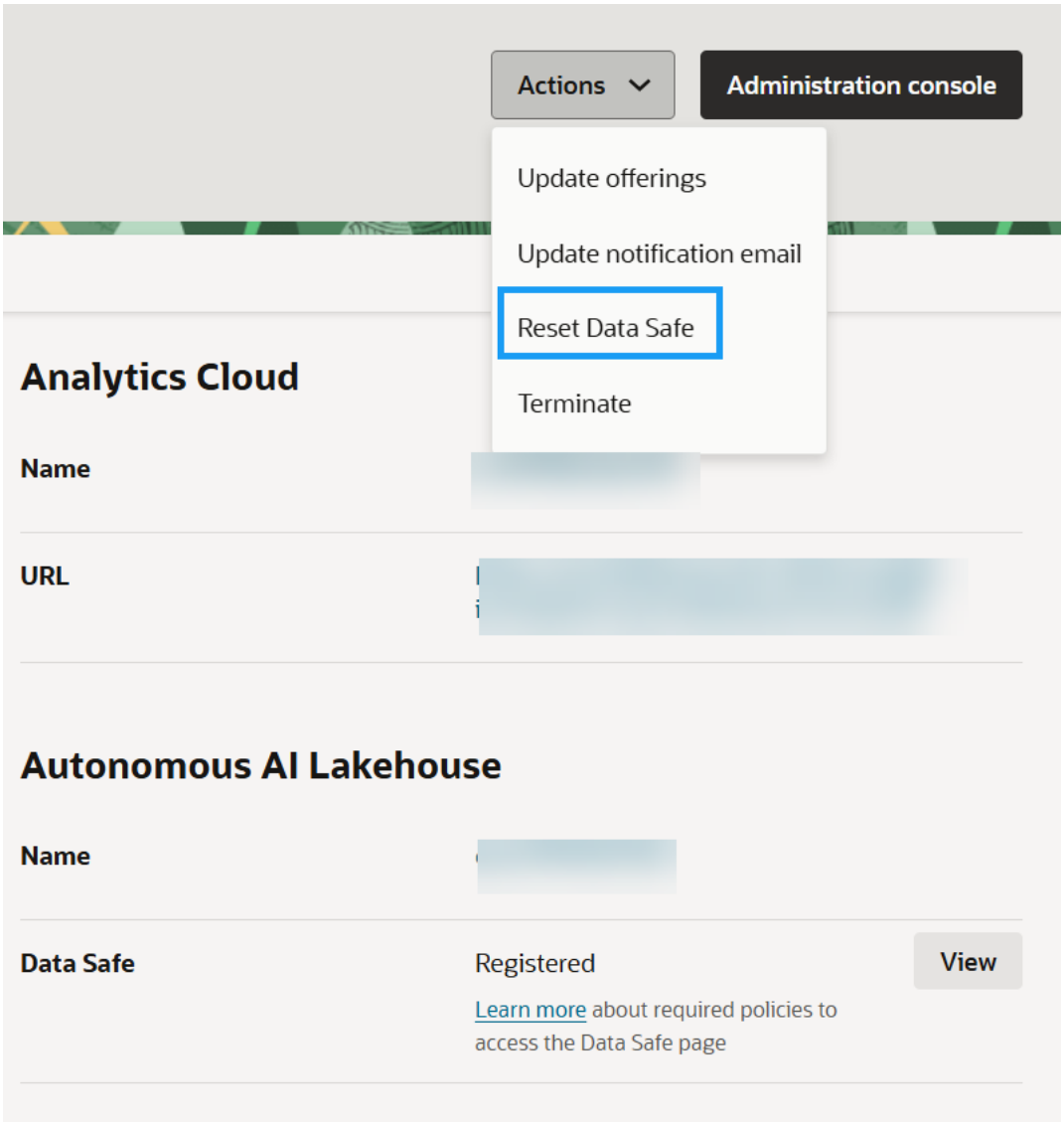

6. In Reset Data safe, click **Reset**.

Disable Data Safe

You can disable the Data Safe capability by deregistering the Oracle Autonomous AI Lakehouse associated with Oracle Fusion Data Intelligence. After deregistering a Data Safe target database, you can't recover the Data Safe target database.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. In Oracle Cloud Infrastructure Console, click the Navigation menu icon in the top left corner.
3. Click **Analytics & AI** and then under AI Data Platform, click **Data Intelligence**.
4. On the Instances page, click the Oracle Fusion Data Intelligence instance for which you want to disable the Data Safe capability.
5. On the instance details page, under **Autonomous AI Lakehouse**, for **Data Safe**, click **View**.

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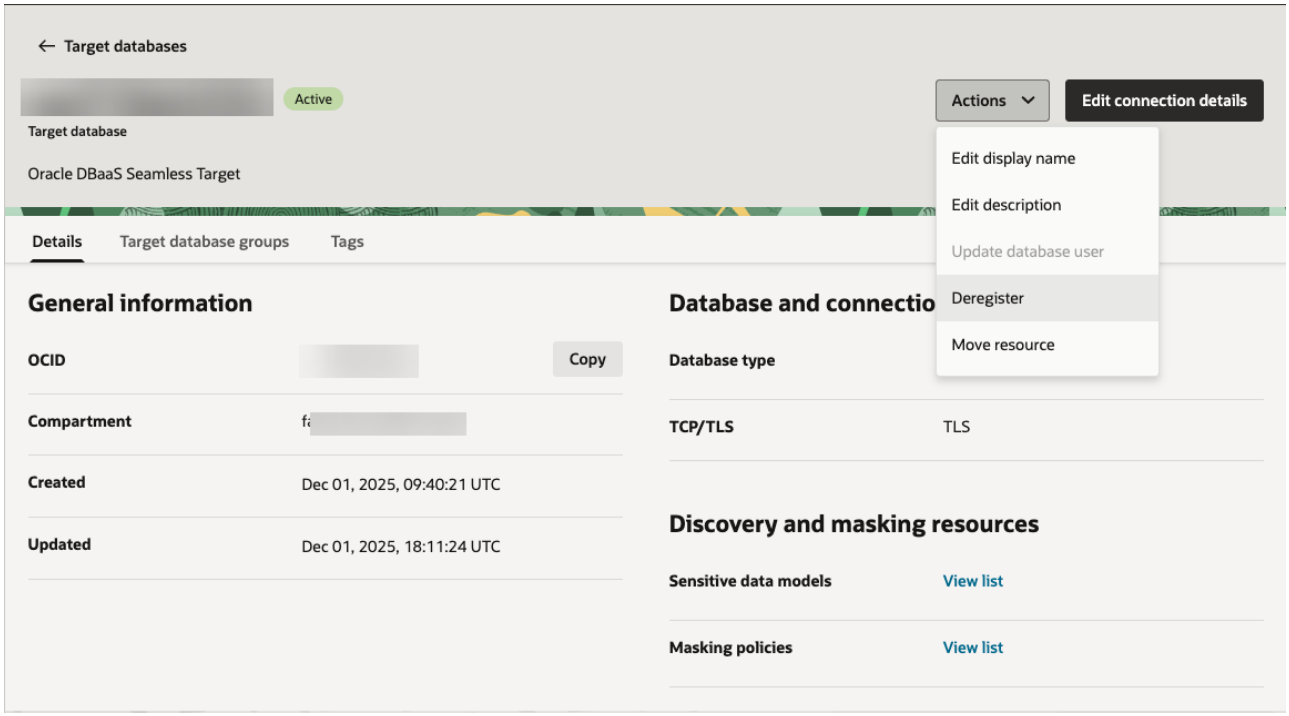
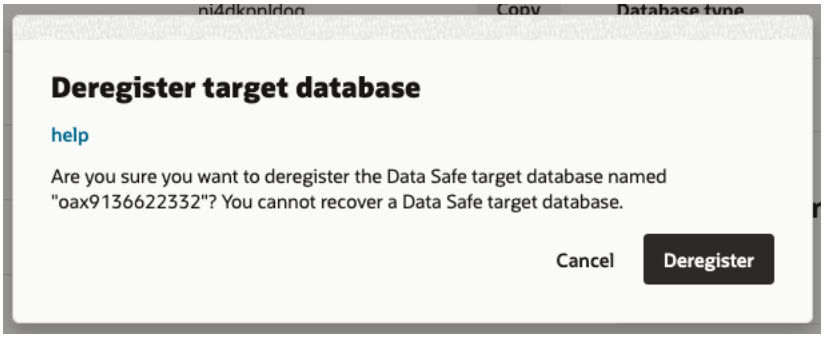
6. On the Data Safe details page, click **Actions**, and then click **Deregister**.



7. In Deregister target database, click **Deregister**.



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4

Configure Oracle Fusion Data Intelligence Data

As the cloud account administrator with the Functional Administrator or System Administrator application role, you specify the data load and reporting configuration details, and create data pipelines for functional areas that determine how the source data from Oracle Fusion Cloud Applications is loaded and displayed in the data warehouse.

For example, you might specify the Initial Extract Date as January 1, 2025, specify the global currency as US Dollars (USD), and select the exchange rate to convert transactions to the global currency.

> **Note**
>
> The times visible in the Console are in local time zone. However, Oracle Fusion Data Intelligence stores the values for the **Warehouse Refresh Date Time** and **Scheduled Date** in the Coordinated Universal Time (UTC) in the autonomous data warehouse.

Any data you load into the autonomous data warehouse in Oracle Fusion Data Intelligence is subject to the data access controls that may not always match those in the source system. For example, if User1 doesn't have the rights to access some data in your source system, then when you bring that data over to the autonomous data warehouse in Oracle Fusion Data Intelligence, this User1 can access that particular data. If you want to have the same controls on the data, then you must ensure that this particular User1 has the same data access rights as your source system in your Oracle Fusion Data Intelligence user setup.

After every data pipeline load, the system clears the cache in the back-end as a standard step. You don't have to take any action.

Topics:

- Typical Workflow to Configure Data
- About Data Processing Limits
- About Data Pipelines for Functional Areas
- About Data Refresh Performance
- About Pipeline Parameters
- Set Up the Pipeline Parameters
- Create a Data Pipeline for a Functional Area
- Edit a Data Pipeline for a Functional Area
- Activate a Data Pipeline for a Functional Area
- About Global Parameters
- Set Up the Global Report Parameters
- About Reporting Configurations

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- Set Up the Reporting Configurations for Enterprise Resource Planning
- Set Up the Reporting Configurations for Human Capital Management
- Set Up the Reporting Configurations for Supply Chain Management
- Deactivate a Data Pipeline for a Functional Area
- Delete a Data Pipeline for a Functional Area
- Refresh a Data Pipeline for a Functional Area
- Reload Data for a Data Pipeline
- Reset the Data Warehouse
- Reset the Cache
- Reset and Reload the Data Source
- Schedule Incremental Data Refreshes
- View the Estimated Data Refresh Time
- View Request History
- View the Audit Log
- View the Data Pipeline Status
- View Records Rejected in Extraction
- Augment the Data
- Create a Dimension Alias
- Manage Data Connections
- View Notifications and Emails
- Enable Event Notifications (Preview)
- Schedule Frequent Data Refreshes
- Schedule Reload of Data
- Schedule Frequent Refreshes of Warehouse Tables (Preview)
- Override Data Pipeline Schedules for Functional Areas (Preview)
- Prioritize Datasets for Incremental Refresh (Preview)
- Schedule Data Maintenance
- Extend Data with Data Applications
- Share Data with External Systems (Preview)
- Capture Data Changes (Preview)
- Connect to an Autonomous AI Lakehouse
- View the Warehouse Refresh Statistics
- About Refreshing Your data
- Access AI Concierge

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Typical Workflow to Configure Data

Follow these tasks as a guide to configure Oracle Fusion Data Intelligence data.

Task	Description	More Information
Set up the pipeline parameters	Set up the pipeline parameters for your data model file before running your data pipelines for the functional areas.	Set Up the Pipeline Parameters
Create a data pipeline for a functional area	To start analyzing your Oracle Fusion Cloud Applications data, create data pipelines for the functional areas to copy data to the data warehouse.	Create a Data Pipeline for a Functional Area
Edit a data pipeline for a functional area	You can change any details of your data pipelines for the functional areas prior to activating them.	Edit a Data Pipeline for a Functional Area
Activate a data pipeline for a functional area	You must activate the data pipeline for a functional area to run and load data into the data warehouse.	Activate a Data Pipeline for a Functional Area
Set up the global report parameters	As part of the reporting configurations, specify the parameter that you want to use across your Oracle Fusion Data Intelligence offerings. You can set up this parameter only after activating a data pipeline for a functional area.	Set Up the Global Report Parameters
Set up reporting configurations	Set up the reporting configurations for your data model file after activating a data pipeline for a functional area. Based on the functional area for which you've activated a data pipeline, you see the applicable reporting configurations. For example, if you've activated a data pipeline for a functional area in Oracle Fusion ERP Analytics, then you see the reporting configurations applicable for Oracle Fusion ERP Analytics.	Set Up the Reporting Configurations for Enterprise Resource Planning Set Up the Reporting Configurations for Human Capital Management
Deactivate a data pipeline for a functional area	You can deactivate all the incremental set up and ETL jobs of data pipelines for the functional areas.	Deactivate a Data Pipeline for a Functional Area
Delete a data pipeline for a functional area	You can delete data pipelines for the functional areas prior to activating them.	Delete a Data Pipeline for a Functional Area
Refresh a data pipeline for a functional area	Perform this action to refresh the data for the selected functional area.	Refresh a Data Pipeline for a Functional Area

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Task	Description	More Information
Reload a data pipeline for a functional area	You can reset an activated data pipeline for a functional area. Resetting the data pipeline deletes all data from your data warehouse.	Reload Data for a Data Pipeline
View load request history	View the load request history by functional area, load type, and status.	View Request History
Augment your data	Augment your reports by using datasets that you create with specific columns from various data stores.	Augment Your Data

About Data Processing Limits

Oracle Fusion Data Intelligence has certain limits for data processing depending on the type of processing.

If you require to go beyond these limits, contact Oracle Customer Support. These limits are subject to change and are specified as follows:

Data Processing Category	Description	Data Processing Limit per Subscription per Instance
Frequent Data Refresh V2 (Preview)	Incremental intra-day refresh of supported functional areas and data extensions	4 frequent data refreshes per 24-hour period per source, up to a total of 100 tables across sources per refresh
On-Demand Incremental Refresh of data	Incremental refresh of a functional area and data extension upon request	4 per 24-hour period per source
Scheduled/On-Demand Full Reload of data	Remove and reload data for a functional area and data extensions	4 per week per source
On-Demand Full Reload of a Source	Remove and reload data from a source upon request; includes reset of data warehouse for all sources	1 per month per source
Data Extensions	Data refresh or reload of new data tables from a data extension such as Data Augmentation and Data Augmentation Scripts	500 tables per FDI instance, up to a total of 100M records per 24-hour period across all sources

About Data Pipelines for Functional Areas

Data pipelines for functional areas load data specific to a functional area into the data warehouse.

These pipelines hold configuration parameters specific to a functional area such as General Ledger functional area under Finance and Sales functional area under NetSuite.

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Allowed Actions for Data Pipelines

Here's a list of the actions allowed for data pipelines when they are in various states. This information enables you to know which actions you can and can't perform when a data pipeline is in a particular state.

Pipeline status	Available actions	Additional information
Saved	Edit and Delete	You can activate a data pipeline using the Edit wizard or can delete the data pipeline.
InActive	Edit, Activate, and Delete	You can activate a data pipeline using the Edit wizard or can delete the data pipeline.
Activation Scheduled	Edit and Delete	If you edit a scheduled data pipeline, then the previous data pipeline is unscheduled and a new data pipeline is scheduled.
Activation in Progress	View	You can view the data pipeline in Read-only mode.
Activation Complete	Edit, Delete, Reset, Deactivate, and Refresh Data	You can perform these actions: • Edit only the Attribute Selection, Column Options, Entity Options, Dimension Keys, Schedule, and Save steps. • After the Edit action is completed, the data pipeline is ready for Refresh Data or AdHoc run. View the information icon that's displayed. • Perform a reset that marks the data pipeline for data reset and view the displayed information icon. The next incremental job peforms the actual action or you can peform the Refresh Data action to immediately reset the data. • Refresh the data. If an incremental job isn't running, then the Refresh Data action initiates an AdHoc run immediately to refresh the data. It peforms a full refresh if you had edited the data pipeline or performed a reset earlier. • Deactivate the data pipeline to change its state to InActive.

About Pipeline Parameters

The pipeline parameters apply to all functional areas.

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The pipeline parameters that apply at the functional area levels are currency, exchange rate type, and initial extraction date and time to schedule the incremental job to run.

- Data Refresh Schedule: Specify the frequency and when you want the incremental data load to happen. While specifying the timezone, the recommendation is to use city names to handle the daylight savings. For example, instead of selecting timezone such as EST or PST, select Europe/Bucharest or America/Los_Angeles. In this case, the data refresh process calculates the value mentioned in the Time field based on the local time irrespective of daylight savings. See Schedule Incremental Data Refreshes.
- Data Maintenance Schedule: Specify the frequency and when you want the full data reload to happen to avoid affecting the incremental refresh. See Schedule Data Maintenance.
- Global Parameters: These parameters are applicable across your Oracle Fusion Data Intelligence offerings:
  - Analytics Language: Specify the language in which you want the data to be extracted. The language that you can select in the **Analytics Language** parameter is based on the initialized Oracle Fusion Cloud Applications languages. You can only select one language at a time. Changes to this global parameter don't take effect immediately even after next refresh and may cause inconsistent results because the refresh brings in only the incremental data in the selected language. You must reset the warehouse to ensure that the changes are effective.
  - Analytics Currency: Currency conversions are required because your business might have transactions captured in multiple currencies. To create meaningful enterprise-wide analyses, you must use a common currency. Oracle Fusion Data Intelligence allows you to specify an analytics currency to store amounts in the data warehouse using this common currency. The load process checks the specified currency value and determines the corresponding exchange rate based on the exchange rate basis defined for each subject area to convert the amounts to the analytics currency. You can review the details of the exchange rate basis used in each subject area in the respective subject area metric details page. Analytic currency isn't a substitute for translation or reporting ledger specific requirements related to Reconciliation or Statutory reporting. For example, if your organization is a multinational enterprise that has its headquarters in the United States, you probably want to choose **US dollars** (USD) as the analytics currency.
  - Exchange Rate Type: Specify an exchange rate type that you want to use when converting the transaction amounts to the analytics currency. For example, you may set up **Corporate** as a standard exchange rate across your organization for a stable currency.
  - Enterprise Calendar: Specify a fiscal calendar as the value for the Enterprise Calendar parameter to configure the reporting calendar used in Oracle Fusion Data Intelligence. All time options seen in the reporting layer are based off the calendar that you select as the parameter value.
- Initial Extract Date: Initial extract date is used when you extract data for a full load. After extracting the data for a functional area, avoid changing the initial extract date. If you need to change the initial extract data, then after changing the date, reset the data warehouse and reactivate the functional areas. See Reset the Data Warehouse.

  You can specify an absolute date from which to load the transaction data or a relative period to load transaction data within the effective period. The system uses the absolute date to process and load transactional data created after the initial extract date to the warehouse. It reduces the initial data load volume, however, with time the historical data volume can keep on increasing. In such a scenario, specify a relative period because with this approach, you can refresh data for the moving window of the specified period. For example, if the relative period is 3 years, the effective extract date moves every day to consider only data for 3 years. As part of application upgrade, the system cleans up the

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data warehouse based on the relative initial extract date that you specify. The Relative Initial Extract Date option enables you to store only the required amount of data in the data warehouse; thereby improving performance and avoiding additional costs due to large amount of historical data in the data warehouse.

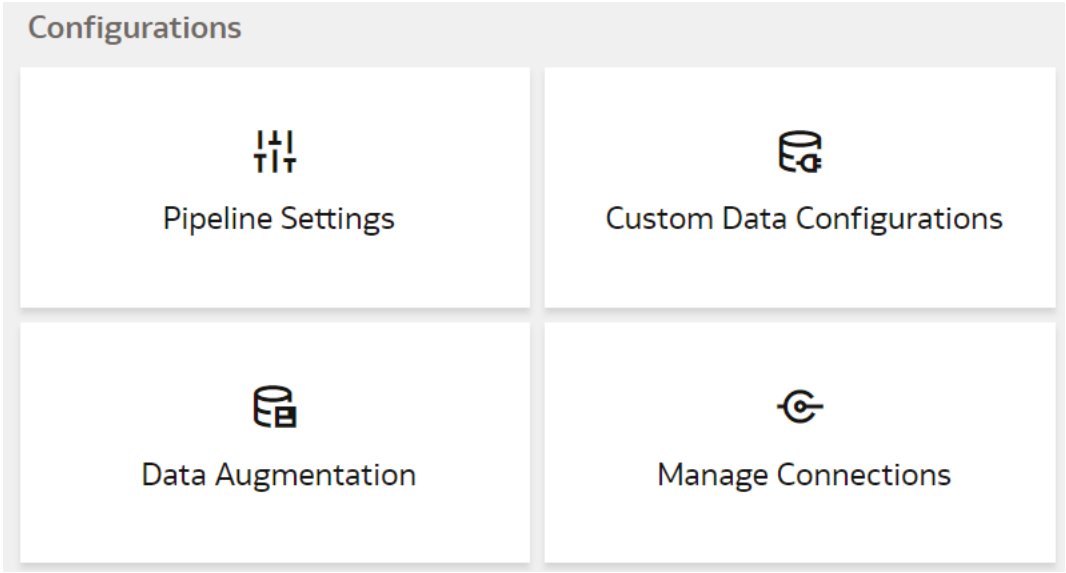
Set Up the Pipeline Parameters

Set up the pipeline parameters for your data model file before running your data pipelines for the functional areas.

Oracle Fusion Data Intelligence releases application updates at regular intervals that are visible on the Release Updates tile of the Console. See About Application Updates. Some of the application updates involve an upgrade of the underlying data model. If a data model upgrade is available at the time that you specify for the daily incremental refresh, then the data model upgrade overrides the incremental refresh for the day. The data model upgrade is a lengthier process and the data refresh for the specific day may take much longer than the regular daily incremental refresh.

Any country that exercises time change forwards the time by an hour. For example, in the U.S.A., standard time changes to day light saving time on 2nd saturday of March, forwarding the time from 2 am to 3 am. As a result, any refresh schedules set between 2 am to 3 am of a day won't execute on that day. If you need to guarantee daily refresh, then ensure to schedule it either before 2 am or after 3 am.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Configurations**, click **Pipeline Settings**.



4. On the Pipeline Settings page, under **Data Refresh Schedule**, from the **Interval** list, select the frequency of the data refresh. Depending on the selected interval, specify the time, day, and month when you want the incremental data load to happen.

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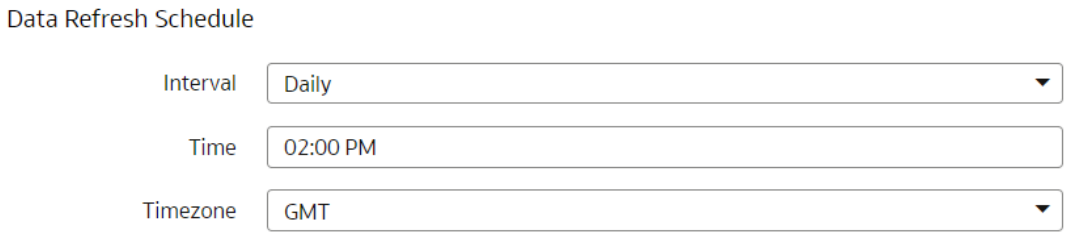


See Schedule Incremental Data Refreshes.

5. Under **Data Maintenance Schedule**, schedule full data loads separately to avoid affecting the incremental refresh.

   See Schedule Data Maintenance.

6. Under **Global Parameters**, provide these details:

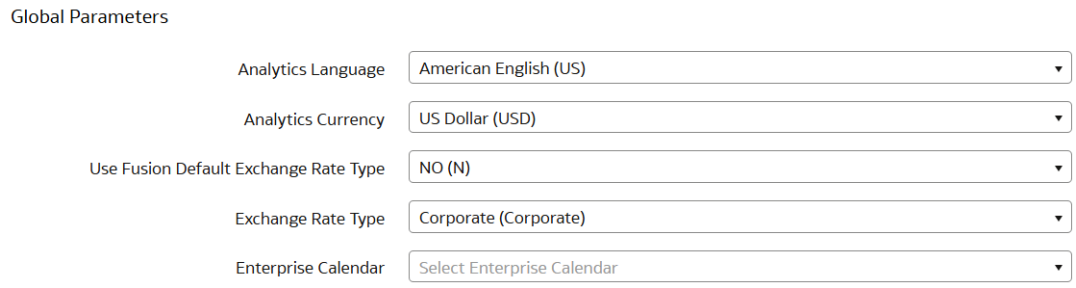
   a. From the **Analytics Language** list, select the language in which you want to extract the data.

   b. From the **Analytics Currency** list, select the currency of the transaction data.

   c. In **Use Fusion Default Exchange Rate Type**, specify whether you want to use the default exchange rate type from Oracle Fusion Cloud Applications.

   d. From the **Exchange Rate Type list**, select an exchange rate type that you want to use when converting the transaction amounts to the global currency.

   e. From the **Enterprise Calendar**, select a fiscal calendar to configure the reporting calendar used in Oracle Fusion Data Intelligence.



7. In **Initial Extract Date**, select **Absolute** or **Relative** as **Date Type** and provide these details:

   - If you select **Absolute**, provide the date from which to load the transaction data.
   - If you select **Relative**, provide the period in **Relative Period** and select either **Days**, **Weeks**, **Months**, or **Years**.

> **Note**
>
> The system displays the "Effective Date". The effective date indicates how far back the data is available in the warehouse. The warehouse may have data beyond the relative period. In the next application update, the system deletes this older data.

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8. Click **Save**.

Create a Data Pipeline for a Functional Area

As a functional administrator, create a data pipeline for a functional area to copy data to the data warehouse. Use these steps to select and schedule runs to update the Oracle Autonomous AI Lakehouse instance with the latest data.

Perform this task only after you have set up the pipeline and report parameters. You can schedule an activation of a functional area even if activation of another functional area is in progress. However, you can't update the activation of a functional area that's in progress.

To understand dependencies between functional areas refer to:

- Fusion CX Analytics - Offerings and Functional Areas
- Fusion ERP Analytics - Offerings and Functional Areas
- Fusion HCM Analytics - Offerings and Functional Areas
- Fusion SCM Analytics - Offerings and Functional Areas

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click your service. For example, under Applications, click **Enterprise Resource Planning**.

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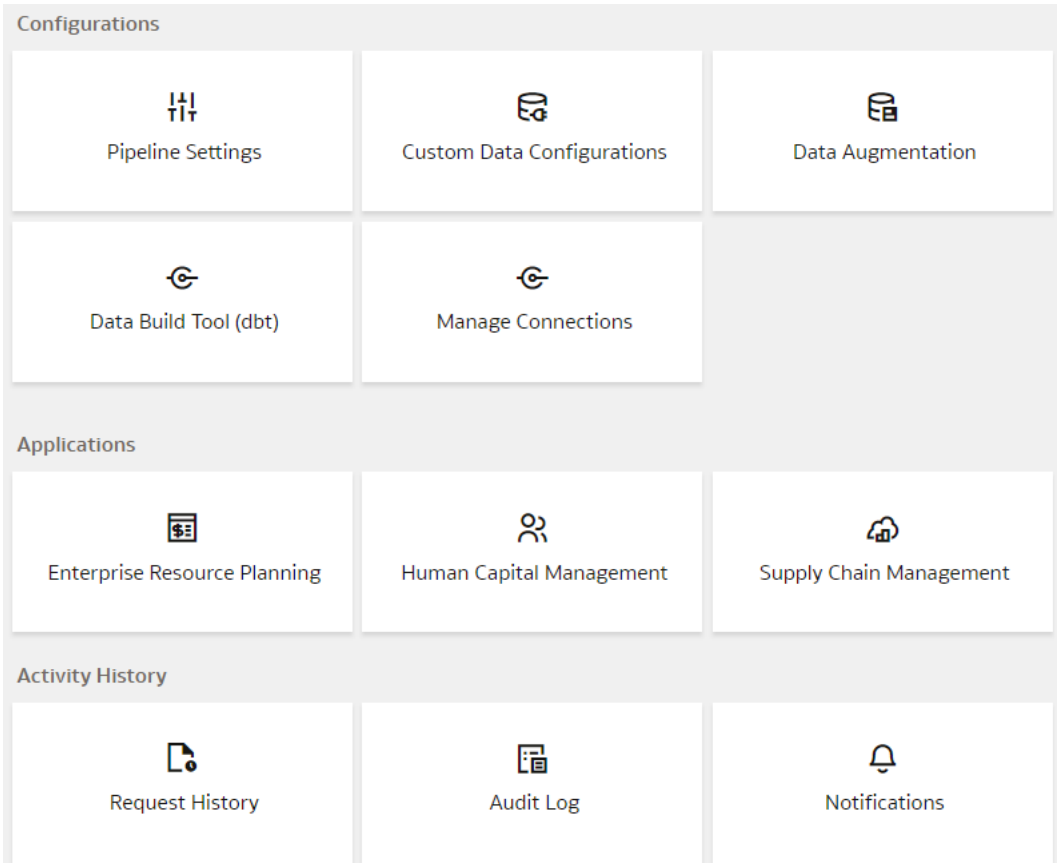
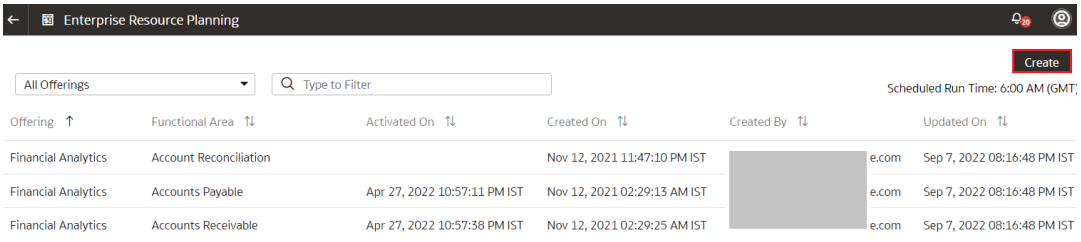
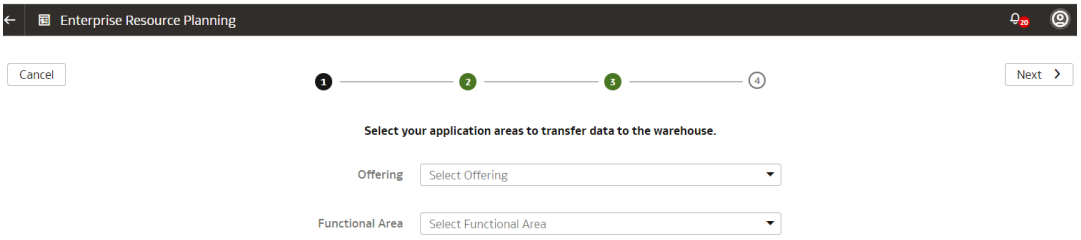


4. On the service page, for example, the Data Configuration: Oracle Financial Analytics page, click **Create**.



5. On the Enterprise Resource Planning page, shown as an example, use the wizard to select your application areas to transfer data to the warehouse, and then click **Next**.



6. Review the parameters and click one of the options:
   - **Cancel**: To cancel the data pipeline for the functional area.

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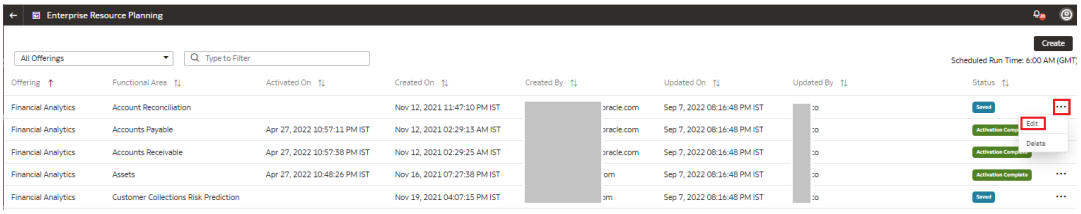
- **Save**: To save the data pipeline for the functional area but not activate it.
- **Activate**: To schedule when to run the data pipeline for the functional area. See Activate a Data Pipeline for a Functional Area.

Oracle Fusion Data Intelligence extracts data only from the initial extract date that you specify. For example, if the initial extract date is 10th March and you've added data on 9th March in your source, then the data added on 9th won't be part of this data pipeline activation plan. You can see the data pipeline activation plan listed on the Data Configuration page.

Edit a Data Pipeline for a Functional Area

You can change any details of your data pipeline for a functional area prior to activating it.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click your service. For example, under Applications, click **Enterprise Resource Planning**.
4. On the service page, for example, the Data Configuration: Oracle Financial Analytics page, click the **Action** menu for the data pipeline for a functional area that you want to edit, and click **Edit**.



5. Make the changes, review the changes, and then click **Save** or **Activate**.

Activate a Data Pipeline for a Functional Area

You must activate the data pipeline for a functional area to run it and load the data into the data warehouse.

Ensure that you don't activate a data pipeline for a functional area in the following situations:

- Load in progress: If an incremental load is in progress.
- An impending load: If an incremental load is scheduled to run in the next hour.
- Exceeded the number of daily refresh requests: The maximum number of ad hoc data refresh requests for the day is four. If you've exceeded this number, then you can submit a request the following day.

> **Note**
>
> Activating a functional area always leads to a full load.

1. Sign in to your service.

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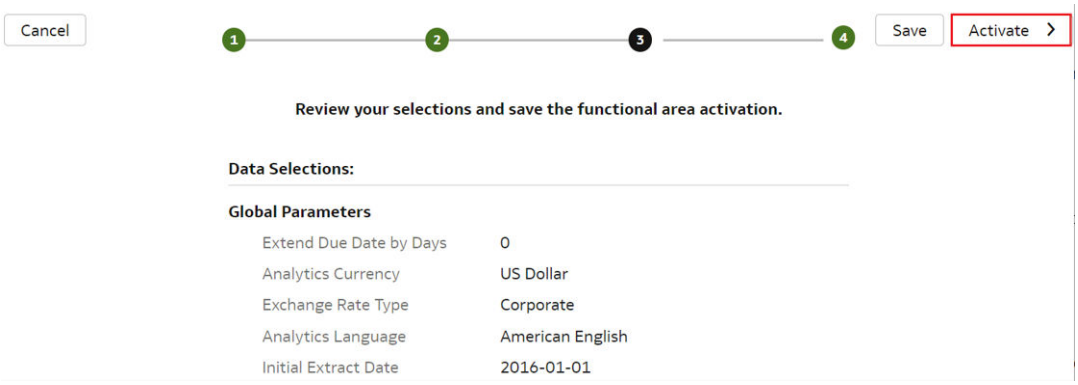
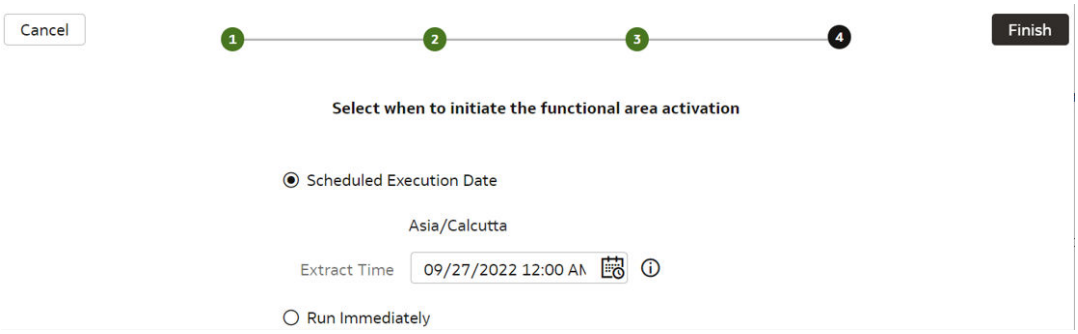
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click your service. For example, under Applications, click **Enterprise Resource Planning**.
4. On the service page, for example, the Data Configuration: Oracle Financial Analytics page, click the **Action** menu for the saved data pipeline for the functional area that you want to activate, and click **Edit**.
5. Review the details of the data pipeline for the functional area and then click **Activate**.



6. In step 4 of the Data Configuration wizard, select **Scheduled Execution Data** to specify the date and time on which to run the data pipeline for the functional area. Select **Run Immediately** to create and run the data pipeline for the functional area immediately. Click **Finish**.



Oracle Fusion Data Intelligence runs the data pipeline for the functional area, loads data into your data warehouse, and displays your data pipeline for the functional area on the Data Configuration page. Once data is successfully loaded, the system updates the status of the data pipeline for the functional area to **Activation Completed**.

About Reporting Configurations

Set up the reporting configurations to specify how data is presented on the key metrics, workbooks, visualizations, dashboards, and reports in Oracle Fusion Data Intelligence.

You must activate a data pipeline for a functional area to be able to set up the reporting configurations. Based on the functional area for which you've activated a data pipeline, you see the applicable reporting configurations. For example, if you've activated a data pipeline for a

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functional area in Oracle Fusion ERP Analytics, then you see the reporting configurations applicable for Oracle Fusion ERP Analytics.

Topics

- About Global Parameters
- About the Reporting Configuration for Enterprise Resource Planning
- About the Reporting Configuration for Human Capital Management
- About the Reporting Configuration for Supply Chain Management

About Global Parameters

As part of the reporting configurations, you can opt to run the system steps manually instead of running automatically based on the configurations such as data augmentations and data applications. You can also hide the applicable prebuilt analyses.

You must activate a data pipeline for a functional area to be able to set up the reporting configurations.

About the Reporting Configuration for Enterprise Resource Planning

Specify a value for the Allow Financial Category Upload parameter as you configure reporting for Enterprise Resource Planning.

This parameter provides the ability to upload the financial category in Oracle Fusion Data Intelligence and maintain the mapping independent of Oracle Fusion Cloud Applications. The default value for this parameter is **No**. If you retain the default value, then Oracle Fusion Data Intelligence uses the financial Category mapping defined in Oracle Fusion Cloud Applications.

About the Reporting Configuration for Human Capital Management

You specify values for these parameters as you configure reporting for Human Capital Management:

- Human Capital Management Analytics parameters:
  - Worker Age Band: This parameter specifies the grouping of the ages of workers by certain ranges. For example, less than 30, 30 to 50, and greater than 50 years. Key metrics and analyses related to the headcount of the workers use these age bands. For example, the percentage of workers who are aged 50 and older.
  - Tenure Band: This parameter specifies the grouping of the service years of workers by certain ranges. For example, less than 5, 5 to 10, and greater than 10 years. Key metrics and analyses related to the headcount or diversity factors of the workers use these bands. For example, you can use this parameter to answer a business question such as "Show me the percentage of workers in my organization of various years of service."
  - Months of Service Band: This parameter specifies the grouping of the service months of workers by certain ranges. For example, less than 6 months, 6 to 12 months, and greater than 12 months. Key metrics and analyses related to the headcount or diversity factors of the workers use these bands. For example, you can use this parameter to answer a business question such as "Show me the number of hires grouped by their service months."
  - Performance Band: This parameter specifies the grouping of the performance ratings of workers by certain ranges. For example, high, medium, and low. Key metrics and

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analyses related to the performance rating of the workers use these performance bands. For example, you can use this parameter to answer a business question such as "Who are the top performers for the current review period in my organization."

- Potential Band: This parameter specifies the grouping of potential ratings under various headers. For example, High, Medium, and Low. You can configure the rating ranges under these bands.
- Compa-Ratio Band: This parameter specifies the grouping of worker compa-ratios under various headers. For example, Band 1 with range as 0-80 and Band 2 with range as 81-120.
- Risk of Loss Band: This parameter specifies the grouping of risk of loss ratings under various headers. For example, High, Medium, and Low. You can configure the rating ranges under these bands.
- Impact of Loss Band: This parameter specifies the grouping of impact of loss ratings under various headers. For example, High, Medium, and Low. You can configure the rating ranges under these bands.
- Custom Performance Band: This parameter specifies the grouping of the performance ratings of workers by certain ranges and names defined by you. The other performance band leverages the predefined band names like high, low, and medium. However, in the custom performance band, you can specify custom names and the ranges for the performance ratings. Key metrics and analyses related to the performance rating of the workers can use these custom performance bands. For example, you can use this parameter to answer a business question such as "Who are the outstanding performers for the current review period in my organization." In this example, "Outstanding" could be one of the band names with certain performance rating range.
- Custom Potential Band: This parameter specifies the grouping of the potential ratings of workers by certain ranges and names defined by the customers. The other potential band leverages the predefined band names like high, low, and medium. However, in the custom potential band, you can specify custom names and the ranges for the potential ratings. Key metrics and analyses related to the potential rating of the workers can use these custom potential bands. For example, you can use this parameter to answer a business question such as "What percentage of the workers have been rated as uber high in their potential." In this example, "uber high" could be one of the band names with certain potential rating range.
- Learning Overdue Days Band: This parameter specifies the grouping of the learning records by the number of days that its overdue. For example, you can use this parameter to answer a business question such as "Provide the number of learning enrolments grouped by the number of days that they are overdue for completion."

- Workforce Management parameter specifies the reason for reorganization to compute the headcount gain or losses based on the reorganization factor.
- Succession Management parameter specifies the grouping of readiness levels of worker for their change in career under various headers.

About the Reporting Configuration for Supply Chain Management

You specify values for these parameters as you configure reporting for Supply Chain Management:

For the Inventory FSN Analysis parameters under Supply Chain Management, you can configure the "Cumulative Annual Usage Percentage" value range under the FSN Analysis band:

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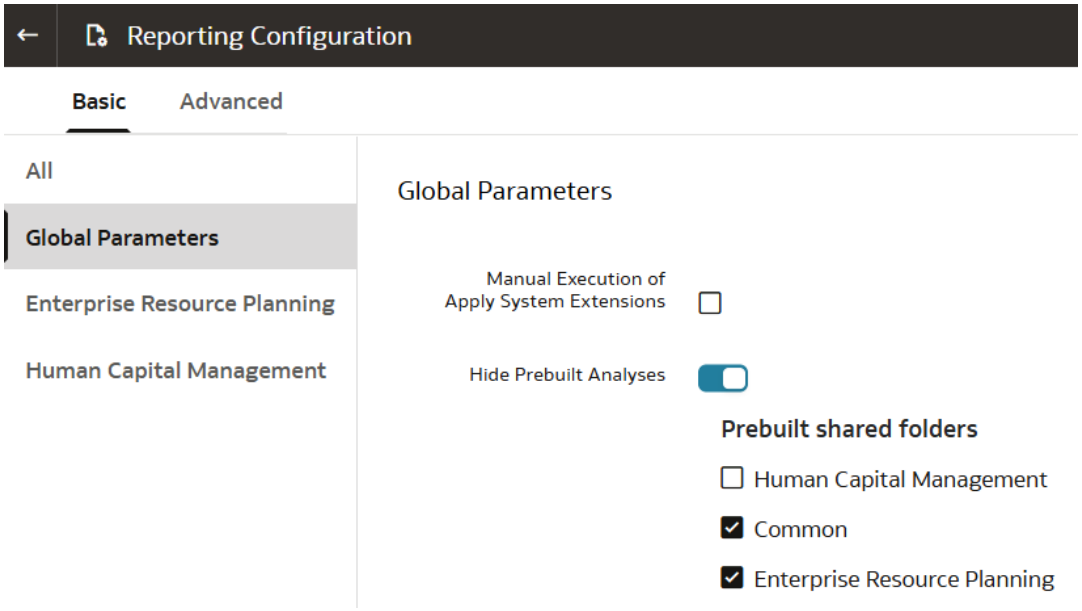
- Fast Moving(F): This parameter is the grouping of Items as "Fast Moving" based on the "Cumulative Annual Usage Percentage" values by certain range specified in the Min(%) and Max(%) columns. Example: If cumulative annual usage value(%) is between 0% to 90% , then classify the item as Fast (F).
- Slow Moving(S): This parameter is the grouping of Items as "Fast Moving" based on the "Cumulative Annual Usage Percentage" values by certain range specified in the Min(%) and Max(%) columns. Example: If cumulative annual usage value(%) is between 91% to 97% , then classify the item as Slow (S).
- Non Moving(N): This parameter is the grouping of Items as "Fast Moving" based on the "Cumulative Annual Usage Percentage" values by certain range specified in the Min(%) and Max(%) columns. Example: If cumulative annual usage value(%) is between 98% to 100% , then classify the item as Non-moving (N).
- The values in the Min(%) and Max(%) columns shouldn't be greater than 100.

Set Up the Global Report Parameters

Specify the report parameters that you want to use across your Oracle Fusion Data Intelligence offerings.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Reporting Configuration** under **Application Administration**.
3. On the Reporting Configuration page, click **Global Parameters**.



4. In the Global Parameters region, specify these:
   a. Optional: Select **Manual Execution of Apply System Extensions** if you want to run the system steps manually instead of running automatically based on the configurations such as data augmentations and data applications (for example, Descriptive Flex Fields, Configurable Account Analysis, Fusion Accounting Hub, and Supply Chain Planning Application).

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If you select **Manual Execution of Apply System Extensions**, then you must manually apply system extensions for the Sandbox and reapply system extensions for the External Application if applicable.

When you import your Semantic Model with extended pre-built dimensions and select **Expose custom columns in out of the box subject areas**, you must **Reapply System Extensions**.

See Apply System Extensions and the description of the **Reapply System Extensions** option in Import Semantic Model.

b. Enable **Hide Prebuilt Analyses** and select the prebuilt analyses folder to hide.

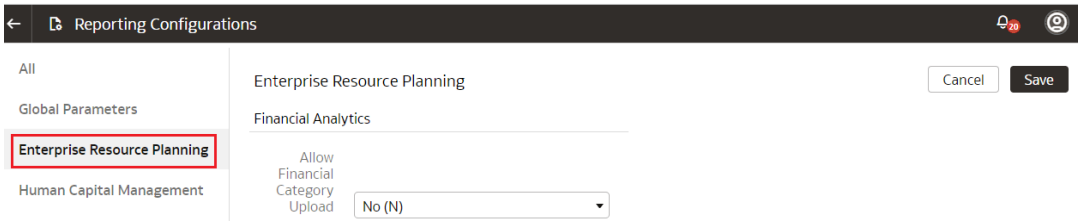
While the update is in progress, an UPGRADING status will be displayed. Once completed, the selected folders will no longer be visible in the Oracle Analytics Cloud catalog.

5. Click **Save** to apply the changes.

Set Up the Reporting Configurations for Enterprise Resource Planning

Set up the reporting configurations for the Enterprise Resource Planning data model file to specify how the Enterprise Resource Planning-related data is presented on the key metrics, workbooks, visualizations, dashboards, and reports.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Reporting Configuration** under **Application Administration**.
3. On the Reporting Configuration page, click **Enterprise Resource Planning**.



4. Optional: On the Enterprise Resource Planning page, in **Allow Financial Category Upload**, select **Yes** to enable the upload of financial categories to the applicable environment.
5. Click **Save**.

Set Up the Reporting Configurations for Human Capital Management

Set up the report parameters for your data model file to specify how the Human Capital Management-related data is presented on the key metrics, workbooks, visualizations, dashboards, and reports.

You can use or update the default parameter values where available or set applicable values that meet your business requirements. The Custom Performance and Custom Potential bands

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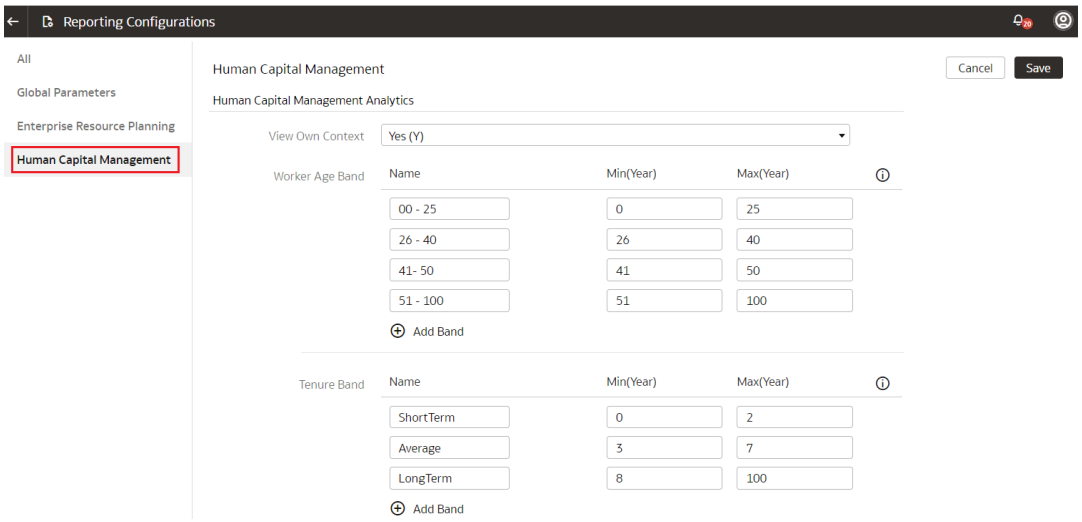
don't work with metrics that use the performance ratings in their computation. For example, metrics such as High Performer Turnover, High Performer Retention, and Top Talent Worker Count. Additionally, the 9-box visualization of Performance versus Potential matrix doesn't work with these bands.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Reporting Configuration** under **Application Administration**.
3. On the Reporting Configuration page, click **Human Capital Management**.



4. On the Human Capital Management page, for **Worker Age Band**, specify the age range of the workers.
5. For **Tenure Band**, specify the range of service years of the workers.
6. For **Months of Service Band**, specify the range of service months of the workers.
7. For **Performance Band**, specify the range of worker performance ratings.
8. For **Potential Band**, specify the range of potential ratings for the workers.
9. For **Compa-Ratio Band**, specify the range of compa-ratio values for the workers.
10. For **Risk of Loss Band**, specify the range of risk of loss ratings for the workers.
11. For **Impact of Loss Band**, specify the range of impact of loss ratings for the workers.
12. For **Custom Performance Band**, specify the custom band names and the range of worker performance ratings.
13. For **Custom Potential Band**, specify the custom band names and the range of worker potential ratings.
14. For **Learning Overdue Days Band**, specify the band names and the range of overdue days.
15. In the Workforce Management region, select one or more reasons for reorganization to compute the headcount gain or losses based on the reorganization factor.
16. In the Succession Management region, select the readiness value for each of the readiness levels of the workers.
17. Click **Save**.

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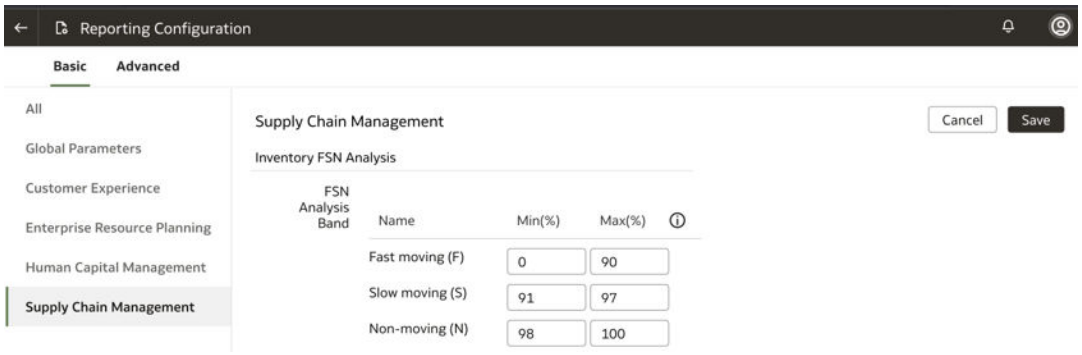
Set Up the Reporting Configurations for Supply Chain Management

Specify the report parameters for your data model file to specify how the Supply Chain Management-related data is presented on the visualizations, dashboards, and reports.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Reporting Configuration** under **Application Administration**.
3. On the Reporting Configuration page, under the Basic tab, click **Supply Chain Management**.



4. In the Inventory FSN Analysis region:
   - Fast Moving(F): Enter the values in the Min(%) and Max(%) columns to specify the range for cumulative annual usage percentage for Fast Moving items.
   - Slow Moving(S): Enter the values in the Min(%) and Max(%) columns to specify the range for cumulative annual usage percentage for Fast Moving items.
   - Non Moving(N): Enter the values in the Min(%) and Max(%) columns to specify the range for cumulative annual usage percentage for Fast Moving items.
5. Click **Save**.

Deactivate a Data Pipeline for a Functional Area

You can deactivate all the incremental setup and jobs of a data pipeline for a functional area.

Deactivating a data pipeline for a functional area ensures that future incremental jobs don't select the specific functional area when the data pipeline runs. You can view the deactivated status of the data pipeline on the Data Configuration page.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click your service. For example, under Applications, click **Enterprise Resource Planning**.

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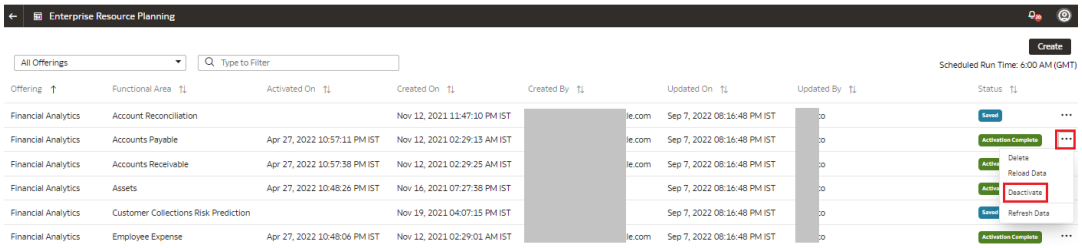
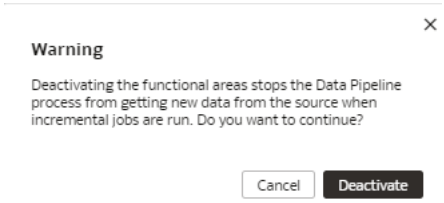
4. On the service page, for example, the Data Configuration: Oracle Financial Analytics page, click the **Action** menu for the active data pipeline for the functional area that you want to deactivate, and click **Deactivate**.



5. Review the warning message and then click **Deactivate**.

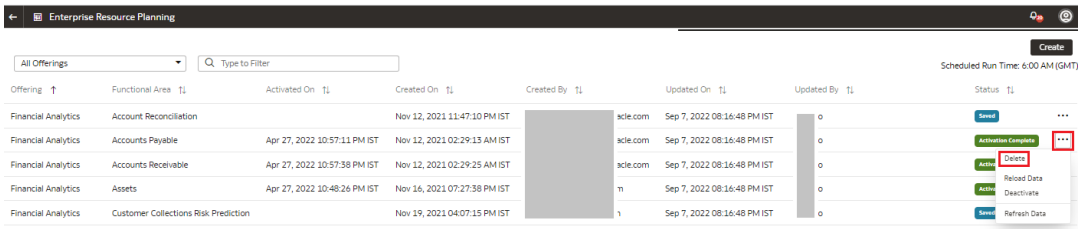


Delete a Data Pipeline for a Functional Area

You can delete a data pipeline for a functional area prior to activating it.

Deleting a data pipeline for a functional area permanently removes it, so data refreshes of the warehouse won't occur.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click your service. For example, under Applications, click **Enterprise Resource Planning**.
4. On the service page, for example, the Data Configuration: Oracle Financial Analytics page, click the **Action** menu for the data pipeline for the functional area that you want to delete, and click **Delete**.



5. Review the warning message and then click **Delete**.

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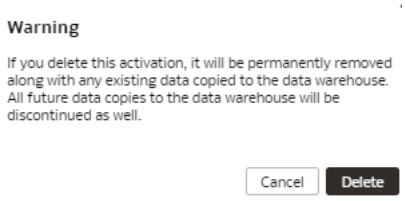


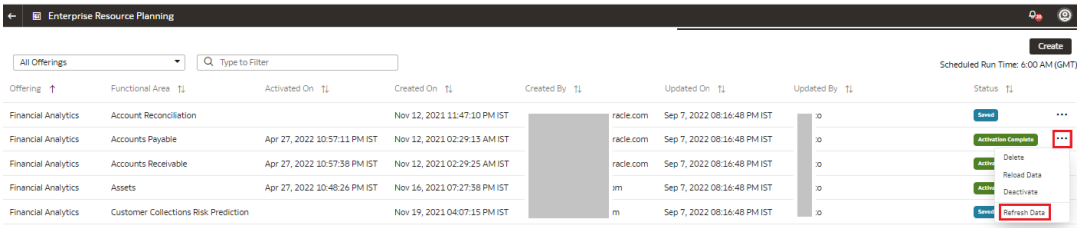
Refresh a Data Pipeline for a Functional Area

Refresh an activated data pipeline for a functional area to bring in new data for the selected functional area.

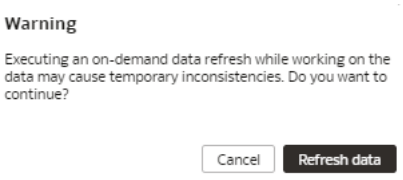
When you refresh the data pipeline, the system executes an incremental load immediately. The next scheduled run could take additional time to complete because of any new data. If you had reset a data pipeline for the functional area before refreshing data, then the system runs a full load immediately for that functional area.

> **Note**
>
> Executing an on-demand data refresh while working on the data could cause temporary inconsistencies.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click your service. For example, under Applications, click **Enterprise Resource Planning**.
4. On the service page, for example, the Data Configuration: Oracle Financial Analytics page, click the **Action** menu for the data pipeline for the functional area whose data you want to refresh, and then click **Refresh Data**.



5. Review the warning message and then click **Refresh Data**.



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Reload Data for a Data Pipeline

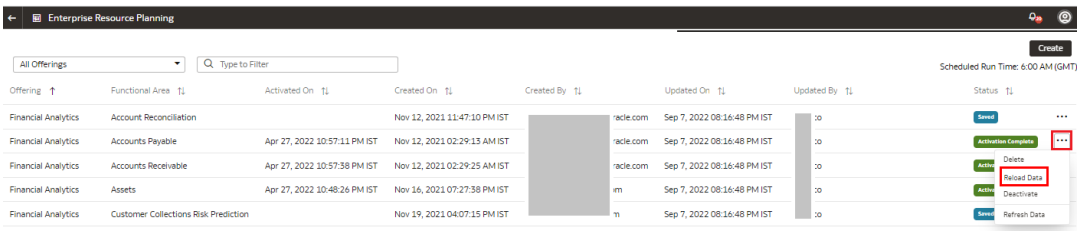
When you reload data for a data pipeline, you start the process of completely refreshing the data in the data warehouse for the functional area.

> **Note**
>
> If you're reloading data for a functional area that depends on other functional areas, then you must also reload the data for the dependent functional areas to avoid incremental refresh failures. Alternatively, you can reset and reload the data source rather than reloading data for individual functional areas. See Reset and Reload the Data Source.
> To understand dependencies between functional areas refer to:
>
> - Fusion CX Analytics - Offerings and Functional Areas
> - Fusion ERP Analytics - Offerings and Functional Areas
> - Fusion HCM Analytics - Offerings and Functional Areas
> - Fusion SCM Analytics - Offerings and Functional Areas

When you issue a request to reload data, the Request History page shows that the request is received and accepted. After you reload the data, the previous data still exists in the data warehouse related to the functional area. On the next data refresh, Oracle Fusion Data Intelligence discards the existing data and loads new data. After reloading the data for the data pipeline, you see the data pipeline for the functional area on the Data Configuration page with the **Completed** status.

In a 24-hour period, you can reload the data for data pipelines of only 4 functional areas.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click your service. For example, under Applications, click **Enterprise Resource Planning**.
4. On the service page, for example, the Data Configuration: Oracle Financial Analytics page, click the **Action** menu for the data pipeline for the functional area that you want to reload, and click **Reload Data**.



5. Review the warning message and then click **Reload on Next Refresh**.

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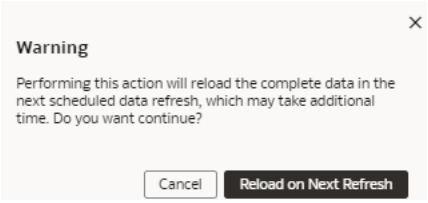

Reset the Data Warehouse

Reset your data warehouse to discard all the existing data for all sources and restore it to its default factory settings.

You might need to restore your data warehouse to the standard, supportable configuration baseline, for example, if there's performance degradation that persists after troubleshooting or if there's legacy data and artifacts that are causing system issues or if the data becomes corrupt.

> **Note**
>
> Reset your data warehouse only in extreme cases because all data would be lost and no analytics would be possible until data from all the sources is fully loaded again. This can take a long time.

Prior to resetting the data warehouse, you must have at least one activated functional area. After resetting the data warehouse, the last refresh date shows the last increment details. You must reactivate all the data pipelines for the functional areas to load data. See Activate a Data Pipeline for a Functional Area

.

> **Note**
>
> Your data isn't available until Oracle Fusion Data Intelligence completes all the activations after resetting the data warehouse.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence Console, click **Enable Features**, click Generally Available tab, and then under Pipeline Features, enable **Reset Data Warehouse**.
3. Navigate to **Data Configuration** under **Application Administration** in the **Console**.
4. On the Data Configuration page, under **Configurations**, click **Pipeline Settings**.
5. On the Pipeline Settings page, click **Actions** and then click **Reset Data Warehouse**.



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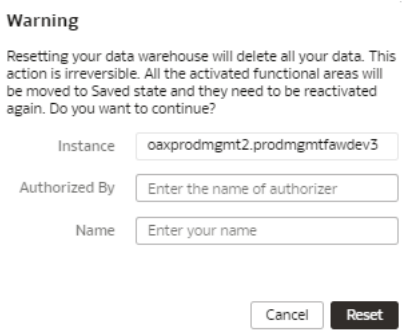
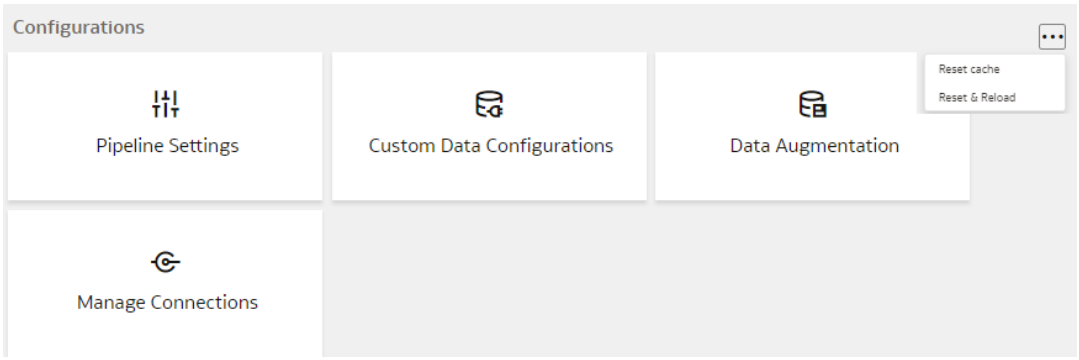
6. Review the warning message, provide the details, and then click **Reset**.



Reset the Cache

The data augmentation source column information is cached in the browser cache and is maintained for a week. If your source has new columns and they don't display in the Data Augmentation wizard, then you can reset the browser cache and retry data augmentation.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click the **Reset Cache** menu option.



You see a message that cache has been cleared successfully.

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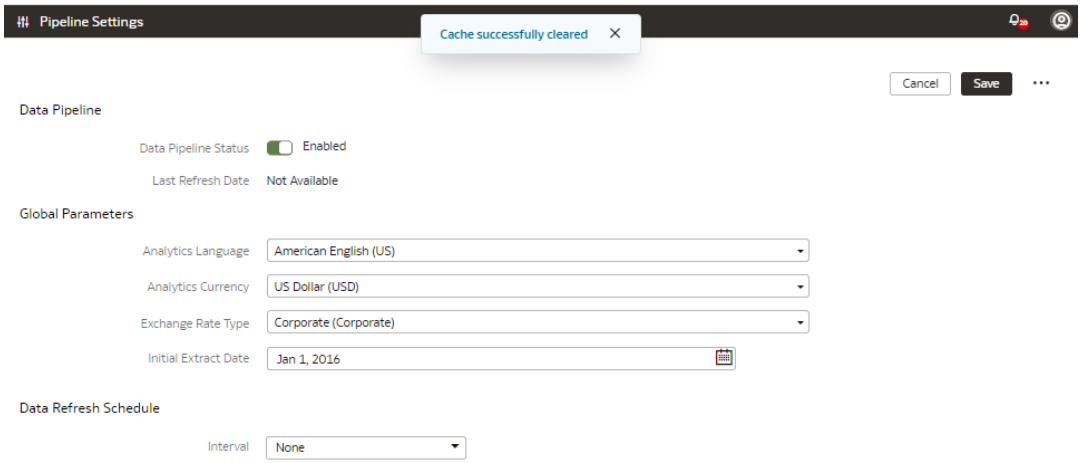

Reset and Reload the Data Source

As a functional administrator, you can reset and reload the data source for several reasons.

For example:

- If you need to change the data source for some reason, then you may want to reset the present data source back to the original state.
- If there is any data issue with the source system and you need to start the entire pipeline all over again.
- Initially if you set up the connection and the pipeline to test some things and then want to start from the beginning again.
- Whenever you perform a Production to Test (P2T) refresh, you must complete a full reload of the source to avoid data issues.

You can reset and reload data for all the activated functional areas, augmentations, and data applications. This request may take a long time as it requires all data to be discarded and fetched again. Other requests like the incremental and full load won't start until this request completes.

Ensure that **Reset and Reload the Data Source** is enabled in **Pipeline Features** under the Generally Available Features tab on the Enable Features page prior to resetting and reloading the data source. See Enable Generally Available Features.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click **Reset & Reload**.

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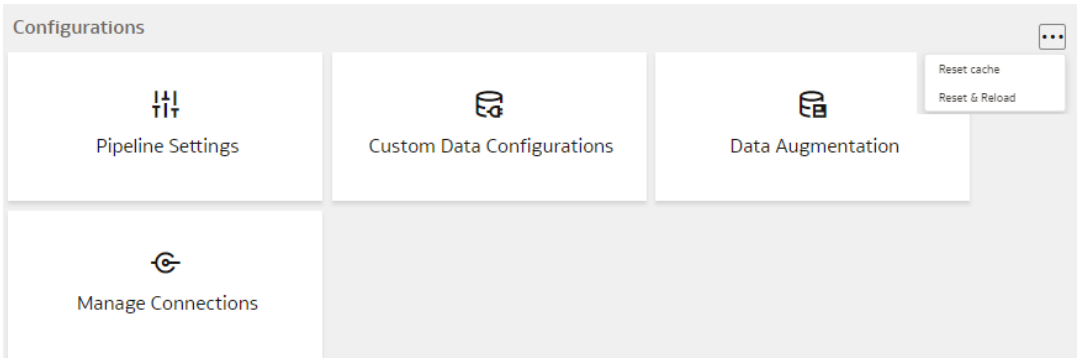
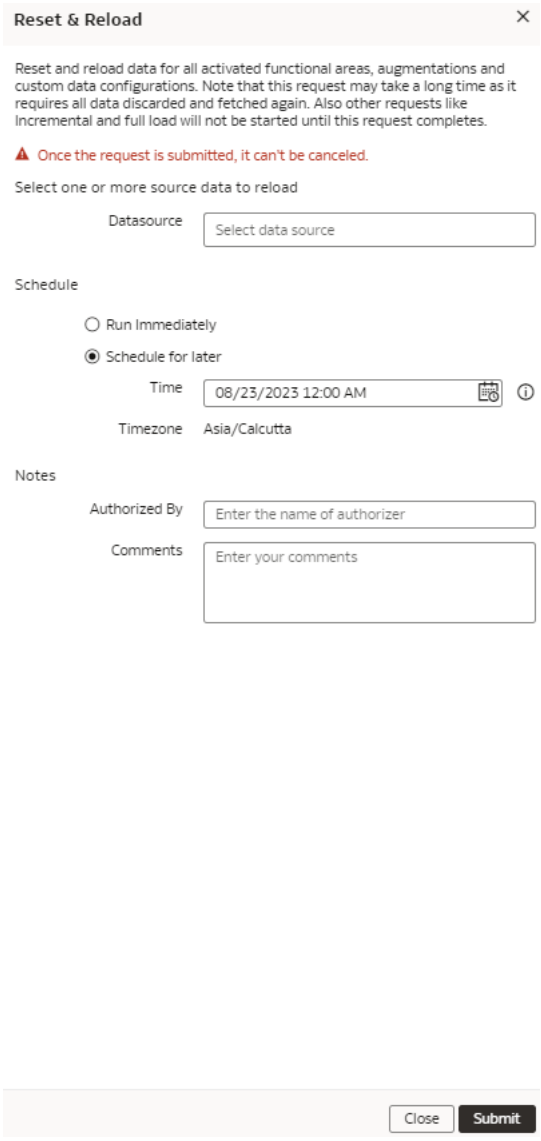


4. Review the warning message, provide the details, and then click **Submit**.



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Schedule Incremental Data Refreshes

You can schedule incremental data refresh to pull the latest incremental changes from your source into the Autonomous AI Lakehouse associated with your Oracle Fusion Data Intelligence instance. Based on the schedule, Oracle Fusion Data Intelligence refreshes the data for activated functional areas, data applications, and data augmentations.

Oracle Fusion Data Intelligence refreshes data in the following stages (in order):

1. Specified tables in Prioritized Refresh. See Prioritize Datasets for Incremental Refresh (Preview).
2. Prebuilt modules, data augmentations of type Dimensions, Entity Extension, and Fact in the Primary stage. See Augment Your Data.
3. Prediction modules, data augmentations of type Dataset, data augmentations with no last modified date, and Dimension Alias in the Secondary stage.

> **Note**
>
> Data augmentations with versioned dataset are part of data maintenance.

The Schedule Incremental Data Refresh is the most critical refresh in Oracle Fusion Data Intelligence. To avoid interference during this refresh, you can configure a blackout window that prevents any other refreshes from starting. By default, this window starts 180 minutes (3 hours) before the scheduled start time of the incremental refresh. However, any refresh already in progress continues until it's completed and the incremental refresh begins only after it finishes. Ensure that any other refreshes finish well before the scheduled incremental refresh.

To optimize incremental refreshes (scheduled data refresh), the system skips an incremental refresh if a previous incremental refresh happened within 6 hours. This can also impact the incremental request triggered immediately after a target data model upgrade. The data augmentations and data applications get refreshed with the next scheduled incremental in this scenario.

Set the schedule so the incremental refresh runs outside business hours. For example, if users need analytics-ready data by 8:00 AM and the refresh typically takes about 4 hours, schedule it to start at 2:00 a.m. This schedule provides a buffer for any variation in the refresh duration and ensures the data is available when users need it.

Use the Data Refresh Schedule on the Pipeline Settings page to specify the frequency and when you want the incremental data load to happen. While specifying the Timezone, the recommendation is to use city names to handle the daylight savings. For example, instead of selecting Timezone such as EST or PST, select Europe/Bucharest or America/Los_Angeles. In this case, the data refresh process calculates the value mentioned in the Time field based on the local time irrespective of daylight savings. For additional details about timezones, refer to TimeZoneID

View the Estimated Data Refresh Time

For daily refresh of data and pipeline execution to update all the resulting key metrics and dashboards, the execution time depends on many factors.

See Factors Affecting Data Refresh Performance .

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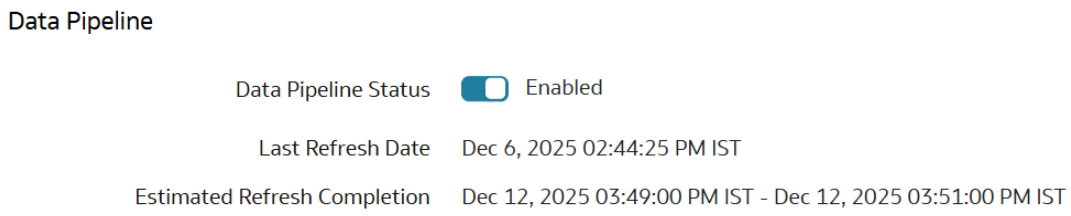
The system provides estimated range for when the data is published with the scheduled incremental data refresh. This helps you plan any dependent tasks and inform users when data would be available for analysis.

1. Sign in to your service.
2. Turn on the pipeline execution estimation using the Data Refresh Estimate preview feature on the Enable Features page.

   The estimated refresh completion details are visible on the Pipeline Settings page. See Make Preview Features Available.
3. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration** and on the Data Configuration page, under **Configurations**, click **Pipeline Settings**.
4. View the estimated refresh completion time for daily pipelines on the Pipeline Settings page in the Estimated Refresh Completion field as a time range if you've enabled **Data Refresh Estimate** under the Preview Features tab on the Enable Features page.

   You can also view the estimated refresh completion time using the information icon on the Request History page for the in-progress refreshes.



5. Trigger any subsequent operations based on the estimated refresh completion time.
6. If the scheduled refresh isn't complete within the expected time, review the data refresh performance considerations. See Considerations for Data Refresh Performance.
7. Subscribe to Event Notifications and set up the DataRefresh - Estimate event type to receive email notifications. See Enable Event Notifications (Preview) and Event Types, Attributes, and Attribute Values for Event Rules.

View Request History

You can view the history of different requests for tracking, reference, and auditing purposes. The request history is visible by data source, functional area, request type, and status along with other details

You can view the details of one time requests and recurring refreshes. The One Time tab displays the details of the requests performed immediately such as Full Load (Adhoc) and Test Connection. The Recurring tab displays details about the most recently completed, skipped, upcoming, and in-progress refresh as applicable. If the request type is Scheduled Data Refresh and the status is InProgress, and you've enabled the Data Refresh Estimate feature, the system displays an information icon next to the status. Click the icon to view the Estimated Completion Time. If any requests are in progress, the tab displays the number of such requests and you can click the number to see those requests. You can also view applicable additional timestamps in the Summary dialog such as Priority Data Published (if applicable), Data Published, and Refresh complete (which includes post-processing) along with the start time of the request.

1. Sign in to your service.

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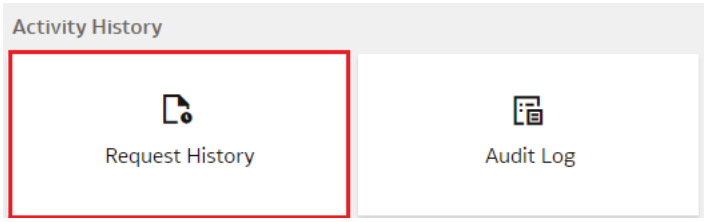
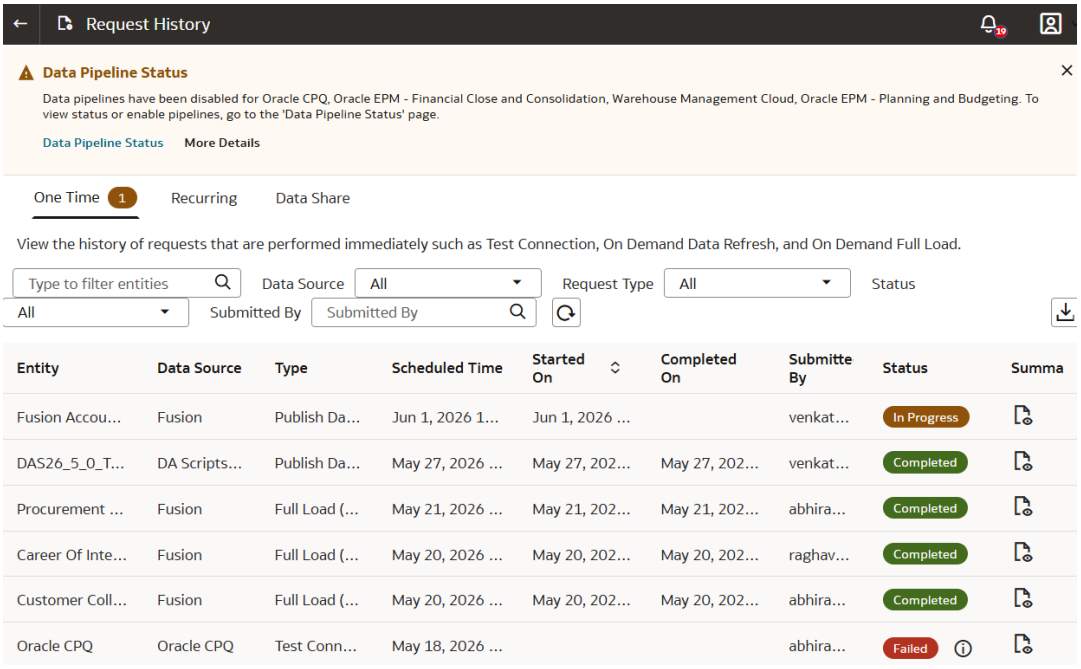
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Activity History**, click **Request History**.



4. On the Request History page, click the **One Time** tab to view the history.



5. In the **Summary** column, click the icon to view the details of each request type.

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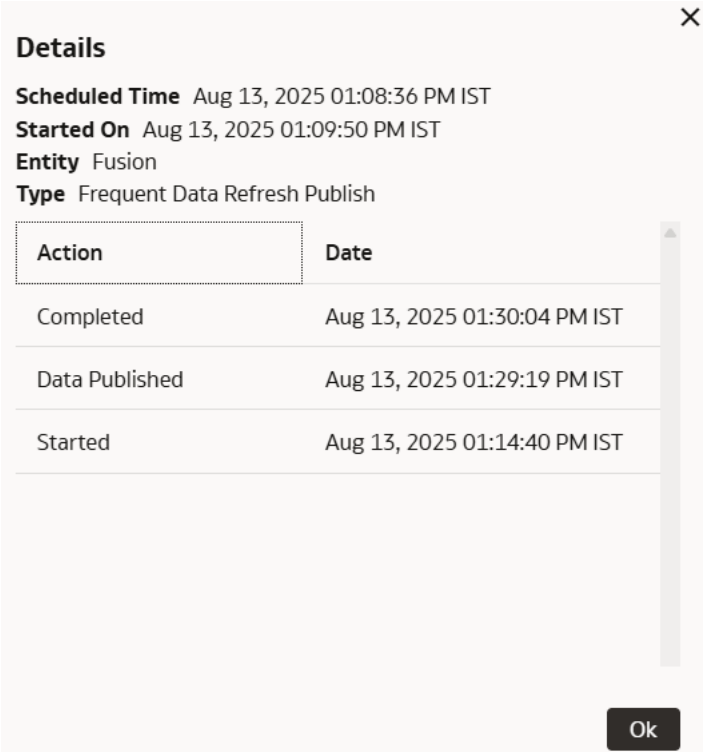
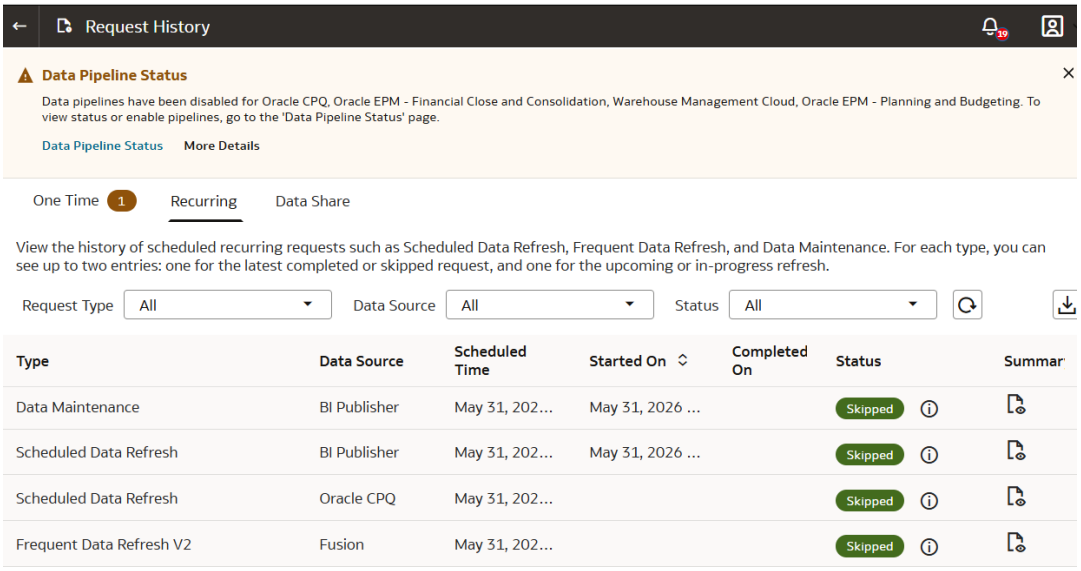


6. Optional: On the Request History page, click the Export Request History icon to download the request history in the csv format.
7. Click the **Recurring** tab to view the history of requests that are performed recurringly.



8. Click the **Data Share** tab to view the history of refreshes for the shared data.

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About Request Types and Statuses

When you perform different data configuration tasks, you can review the different types of requests involved with those tasks in the Request History area.

One Time Request Types

Request Type	Description
Data Source Reset	A request to reload complete data for a data source. See Reset and Reload the Data Source.
Delete a Data Application	A request to delete a data application. See Delete a Data Application.
Delete Connection	A request to delete a connection to a data source. See Manage Data Connections.
Deploy a Data Application	A request to deploy a data application in the data warehouse. See Extend Data with Data Applications.
Frequent Data Refresh Publish	A request to publish the frequent data refresh configuration. To view the status of frequent data refreshes, go to the Recurring tab. See Configure Frequent Data Refresh V2 (Preview) and View Request History.
Full Load (Adhoc)	A full load run that happens on activation of modules such as functional areas. See Activate a Data Pipeline for a Functional Area.
Full Load (Scheduled)	A request to schedule a full load run on activation of modules such as functional areas. See Activate a Data Pipeline for a Functional Area.
Generate a Data Application	A request to generate a data application. See Extend Data with Data Applications.
Module Reset	A request to refresh the data in the data warehouse for the functional area. See Reload Data for a Data Pipeline.
Publish a Data Application	A request to generate and deploy a data application in the data warehouse. See Extend Data with Data Applications.
Refresh Data	The system ran a request to refresh data. See Schedule Incremental Data Refreshes.
Reload Data (Next Data Maintenance)	A request to reload data in the next scheduled data maintenance. See Schedule Data Maintenance.
Reload Data (Next Refresh)	A request to reload warehouse data in the next scheduled data refresh. See Reload Data for a Data Pipeline.
Reset & Reload	A request to reload warehouse data for a data source. See Reset and Reload the Data Source.
Reset Data Warehouse	A request to reset the warehouse. This reset deletes all the customer-added warehouse data. See Reset the Data Warehouse.
Test Connection	A request to initiate test connection for a data source. See Manage Data Connections.
Undeploy a Data Application	A request to remove data from the warehouse while retaining the data application. See Extend Data with Data Applications.

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Recurring Request Types

Request Type	Description
Scheduled Data Refresh	Incremental data refresh that is performed according to the Data Refresh schedule in Pipeline Settings. See Schedule Incremental Data Refreshes.
Frequent Data Refresh	Intra-day refreshes performed according to the Frequent Data Refresh schedule using the original refresh mechanism. See Schedule Frequent Data Refreshes.
Frequent Data Refresh V2	Intra-day refreshes performed according to the Frequent Data Refresh schedule using the revised refresh mechanism. See Schedule Frequent Data Refreshes.
Data Maintenance	Data refresh that is performed as part of data maintenance for full data reloads with incremental refresh. See Schedule Data Maintenance.

One Time and Recurring Request Statuses

Request Status	Description
Completed	The request ran successfully and is now complete.
Failed	The request has failed. Typical reasons are if you've selected unsupported columns in data augmentation or there are failures related to bundles.
In Progress	• The request is running. • The request is resolving.
Not Required	The request isn't required.
Queued	The request is queued. Most common reasons are: • Another request is in progress for the same source. • The warehouse reset request may be in progress. • The data source health may be bad. • The required dependent functional areas or data applications aren't activated
Received	The request is submitted.
Rejected	The request is rejected. Typically this status is sent if you need to make changes and the request can't be completed. The system displays the applicable reason for rejection on the user interface.
Scheduled	The request is scheduled to run.
Skipped	The request has been skipped. Potential reasons are: • The previous request overran the next scheduled run of the repeating request. • There is nothing to execute because no functional areas are activated.
Troubleshooting	The request is taking a long time and Oracle is investigating it.
Unscheduled	The request has been unscheduled because you changed the schedule.

View the Audit Log

You can view the data configuration-related actions that were performed such as activation of a data pipeline for a functional area, setting up of reporting parameters, and saving a data augmentation. You can filter by Entity Name and Action Type.

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1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Activity History**, click **Audit Log**.



4. On the Audit Log page, view the list of all the performed actions.

   The system preserves all the records because there isn't any retention period limit.

View the Data Pipeline Status

Use the Data Pipeline Status page to view all sources for extraction and targets for publish.

As the cloud account administrator with the functional administrator or system administrator application role, you can enable and disable pipelines for data sources and targets for connections or data share as needed. You may want to disable the data pipeline in the following scenarios:

- While updating the Oracle Fusion Cloud Applications password or the JWT credentials.
- While upgrading to a new Oracle Fusion Cloud Applications version.
- If you don’t want to run pipeline jobs for a particular source.
- If you don’t want to run pipeline jobs for a particular duration such as a quiet time in your business activities.

In cases where the pipeline jobs are failing due to issues, Oracle disables the data pipeline to investigate and resolve. On the Pipeline Parameters page, Oracle provides a reason and action for you, if the resolution needs to be done from your side. You can resolve the issue and as an administrator you can enable the data pipeline yourself using the Data Pipeline Disabled toggle.

> **Note**
>
> The previously visible Enable/Disable Pipeline option on the Pipeline Settings page is no longer available. If a data source is disabled, the data source appears in the global notification banner that also displays the link to the Data Pipeline Status tab. When you enable a disabled data source, the system tests the connection and removes the disabled notification for the data source after the test is successful.

When you create a new connection from **Manage Connections** and then switch to the **Data Pipeline Status** tab, the newly created connection may not be shown right away. Click **Refresh** on the **Data Pipeline Status** tab to reload the data; after refreshing, you can see the new connection.

1. Sign in to your service.

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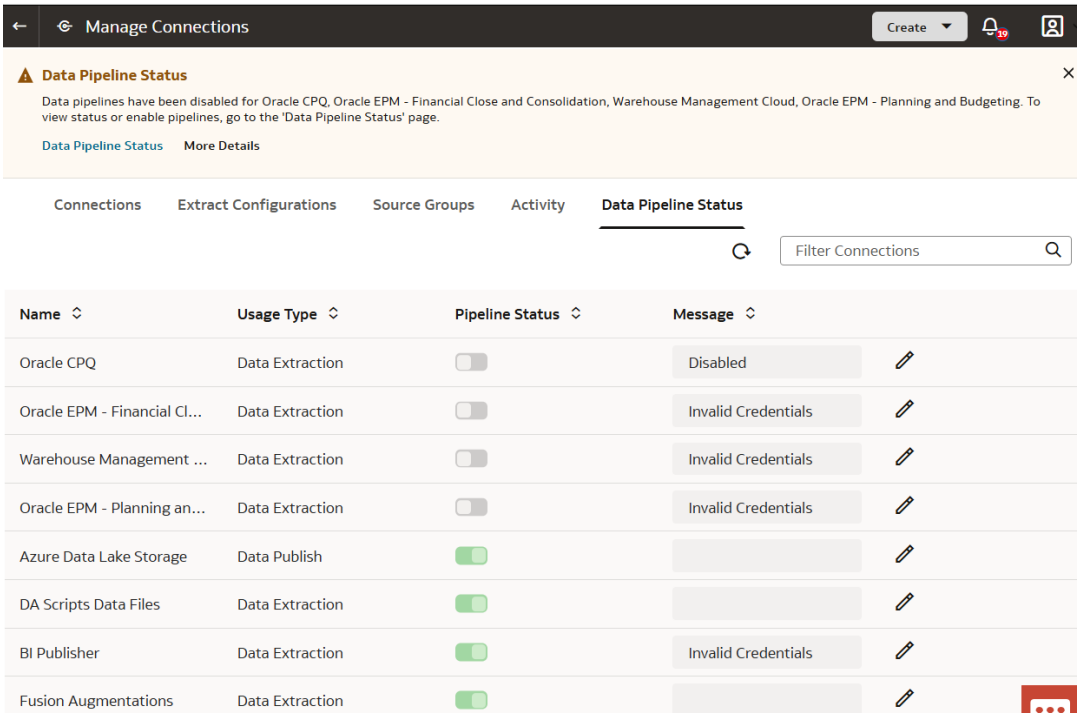
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click **Manage Connections**, and then click the **Data Pipeline Status** tab.



4. In the **Pipeline Status** column, you can disable or enable the applicable data pipeline.
5. Click the **Edit** icon for a data pipeline to add any applicable message.

View Records Rejected in Extraction

The extraction service displays the rejected records in the Warehouse Refresh Statistics dashboard. You can view this dashboard to see which records were rejected and analyze why they were rejected.

The system retains the error records in the table DW_ERR_RECORDS for 90 days, after which it purges the error records automatically. If you want to retain error records for a longer period, you must archive them separately in a custom table.

To view the rejected records in Oracle Fusion HCM Analytics, see Tables With Data Rejection Details.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence click **Projects**.
3. On the Catalog page, click **Shared Folders**, click **Common**, and then click **Warehouse Refresh Statistics**.

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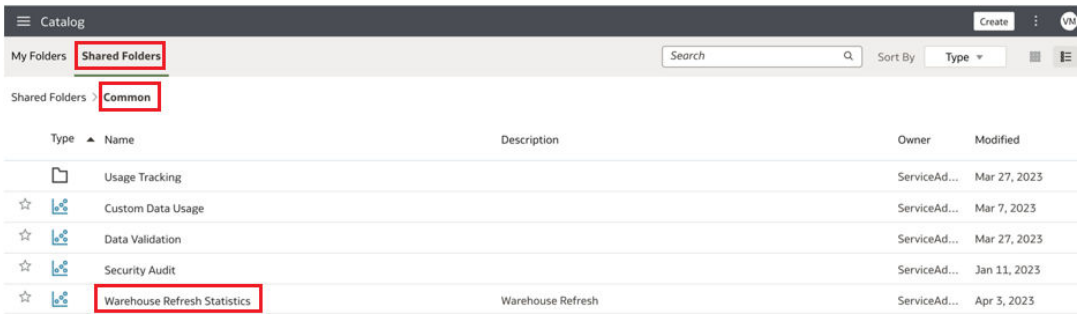
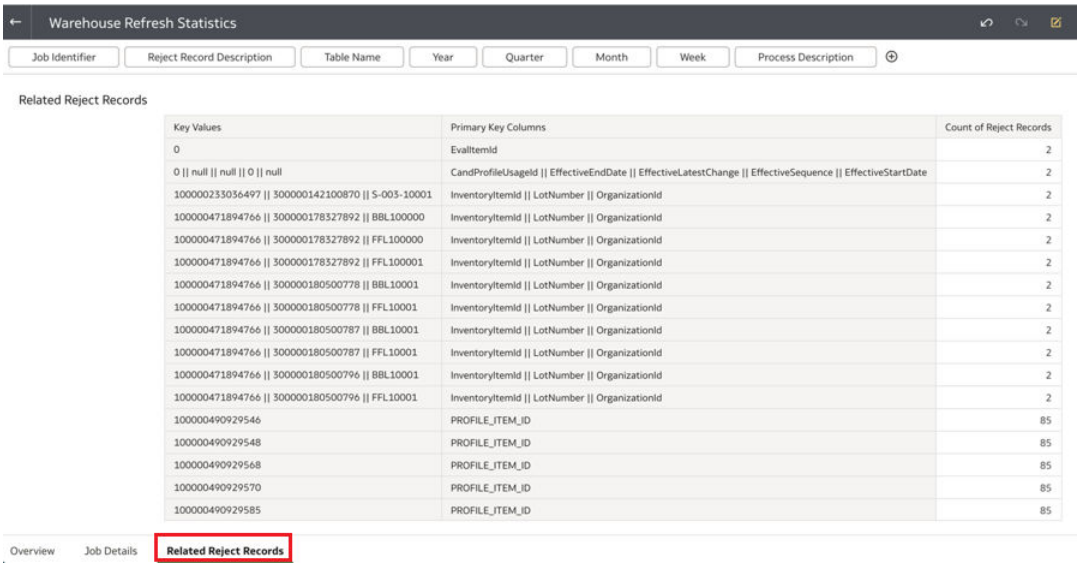


4. In the Warehouse Refresh Statistics dashboard, click the Related Reject Records tab to view the records that were rejected.



Augment the Data

Enhance the data used in your analytics with additional data, various calculations, and combinations to enable comprehensive analytics and multi-faceted visualizations. By augmenting the data, you can reduce or even eliminate the manual intervention in developing meaningful insight of the business data.

Data augmentation enables you to augment the data you bring from Oracle Fusion Cloud Applications and other sources that you can connect to using the Oracle Fusion Data Intelligence connectors. See the *Connectors* section in Preview Features. You can add data to your reports from various data stores (Business Intelligence view objects) of the Oracle Fusion Cloud Applications data sources.

To find the data stores that are available for extraction using augmentation, see the *Data Stores* section in *Reference for Oracle Fusion SCM Analytics*, *Reference for Oracle Fusion HCM Analytics*, and *Reference for Oracle Fusion ERP Analytics*. Although there is no technical limit, you can create a maximum of hundred data augmentations for a single tenant to ensure optimal performance of all data pipelines. Contact Oracle Support if you have further questions. Also, see Is there a limitation on external data volume that's extracted into the Autonomous AI Lakehouse?.

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SME Options for Data Augmentation - The SME Options for Data Augmentation feature is available from the Generally Available Features tab on the Enable Features page.

> **Note**
>
> This function is no longer recommended for use and may be removed in a future release.

For optimal performance and stability, Oracle recommends that you don't enable this. Instead, manually configure your semantic model with User Extensions, rather than having the data augmentation automatically generate the system semantic model extensions. The reason for this recommendation is any changes to the underlying data augmentation, that remain referenced in the semantic model, cause your semantic model extensions to become out-of-sync and fail. The recommended practice is to separate the Data Augmentation and Semantic Model Extension process, which provides greater flexibly for complex modelling and prevents errors. Going forward, when creating data augmentations, always use the Dataset type and define your own user semantic model extensions. Don't create any new data augmentations (of type Dimension, Fact, or Extend Entity) that create the system semantic model extensions. If feasible, convert all your existing data augmentations to datasets and user semantic model extensions.

Here are a few use cases when augmenting your Oracle Fusion Cloud Applications data with data from several data stores enables in-depth and focused insights:

- Product sales – Add similar product information from different data sources to create a report that compares similar products in a specific region.
- Average of expense invoices – Add various expense invoices to create an average of periodic expenses.

About Augmenting the Data

Augmenting the data enables you to create visualizations and analyses that provide in-depth and focused business insights.

By creating data augmentations, you can seamlessly extract and load data from additional data stores and make the data available to tables in the data warehouse. You can then use the data for visualizations and analyses.

> **Note**
>
> To augment data for Oracle Fusion Cloud Applications, the recommendation is to use "Fusion Augmentation Source" and not "Fusion" source. See Perform Data Augmentations with Fusion Augmentations Source. If you have created data augmentations with Fusion source, contact Oracle Customer support for assistance on migrating these data augmentations to Fusion Augmentations Source.

While creating a data augmentation, you can select these:

- Augmentation Type: Dataset is the default and recommended augmentation type. Select this to bring varied data into the warehouse and then use the semantic model extensions to create your own semantic model with this data. Don't enable the **SME Options for Data Augmentation** under the Generally Available Features tab on the Enable Features page unless you have already created data augmentation types such as **Dimension**, **Fact**, and

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Entity Extension. These augmentation types are no longer recommended for use and may be removed in a future release. If you select any of these three augmentation types and want to create a data augmentation on the data loaded from a connector or from the Oracle Fusion Cloud Applications source, you need to create a dimension with a column identified as "primary key". Join this dimension table with a fact table where the same column is assigned the Dimension attribute, which makes that column your join key. In this drop-down list, you can select the appropriate step. The order of data refresh differs for data augmentations for different augmentation types. See Schedule Incremental Data Refreshes.

- Source Dataset Type: For a dataset that doesn't require any transform, select Supplemental Data.
- Pillar: This option is available if your source is Oracle Fusion Cloud Applications. Select the applicable pillar as the data source. For sources that have only one pillar or don't have any pillars, this option isn't visible.
- Source Table Type: For the FUSION source, Oracle Fusion Data Intelligence validates the system-provided source tables to ensure support for the required columns. Customer-provided tables, by contrast, are available for extraction but Oracle Fusion Data Intelligence doesn't validate them. As a user with either the functional administrator or system administrator application role, you can enable the use of a specific table that hasn't been pre-validated. However, Oracle can't guarantee the successful processing of these custom tables or any resulting performance issues, such as potential delays in daily data refreshes.For the remote agent sources like on-premises E-Business Suite, PeopleSoft, and JD Edwards, use the system provided source tables option. The extract service can’t connect to these remote sources directly to fetch the column list for the customer provided table.
- Source Table: You can provide a single table name in this field.

While creating a data augmentation, you can change the size of a column. However, you must ensure that the maximum size is within the allowed permission limit for a given datatype in the target database. To determine the maximum permissible size for each data type, see the "Oracle Built-in Data Types" section in the Oracle database documentation. Currently, the allowed datatypes in data augmentation are DATE, NUMBER, TIMESTAMP, and VARCHAR2.

After you create the augmentations, you see them on the Data Augmentation page with one of these statuses:

- Activation in Progress - You can’t edit, delete, or schedule a data augmentation pipeline job while activation is in progress.
- Activation Completed - You can edit the data augmentation to add or delete attributes of the view objects and save the changes. You can’t modify the schedule in this status.
- Activation Scheduled - You can edit the data augmentation to add attributes of the view objects, save the changes while retaining the existing schedule, reschedule the execution date and time, or execute the plan immediately.

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Note

During the activation process, if the number of invalid records is substantial, then Oracle Fusion Data Intelligence rejects the data augmentation. You can view the DW_ERR_RECORDS table to understand why the input data has been rejected.

You can change the names of the columns that you've added from the various data sources in your data augmentation. Later if you delete a data augmentation, then you must wait for the daily incremental run to complete to see the change in the reports, visualizations, and workbooks.

When you edit an augmentation, Oracle Fusion Data Intelligence refreshes the data after the daily incremental or maintenance request completion. During this time, you can't perform another edit action. You must ensure not to modify the definition of the data augmentation pipeline request while the request is in process. In case you need to modify the request definition while in process, then you must resubmit the data augmentation pipeline request. While editing a data augmentation, ensure to edit the dependent augmentations to avoid refresh failures. If you've enabled data maintenance and later edit a data augmentation, the system skips that data augmentation from the incremental refresh but includes it in the full refresh that happens with the data maintenance request at its scheduled time. The system doesn't include the edited data augmentation in the incremental refresh that the system triggers immediately after a target data model upgrade but includes it in the maintenance request at its scheduled time.

You can't run an adhoc refresh after editing a data augmentation, if the data augmentation is used in the Data Share process.

Recommended practices:

- Don't name two data augmentations the same to avoid failure.
- Specify incremental keys to ensure daily refresh.
- Ensure that the concatenation of the Primary Key columns doesn't exceed the maximum length of 8192 to avoid failure of your data augmentation.
- Don't specify a subject area if you've a complex semantic model; not specifying results in extract, transfer, and load only.
- Data augmentations have lower priority than the prebuilt pipelines and may get rejected if they overlap during the scheduled pipeline incremental runs.
- If using frequent data refresh for specific datasets, then don't schedule data augmentations on the same sources or targets. For example, don't run Extend Entity for an invoice, while frequent data refresh for invoice is on.
- Use data augmentations for specific, targeted extracts. For larger scale or complex projects, consider custom ETL.
- If the one primary key that you defined might not make the record unique, then consider changing the primary key to include more columns to make the record unique.
- Ensure that you apply a filter on the column selection if the data augmentation takes a long time and fails with timeout error. This avoids long running data augmentations.
- If you've enabled the Extract Date option in a data augmentation, then the records that are created before the extract date won't be available in Oracle Fusion Data Intelligence. To bring the data before the extract date, deselect the Extract Date option by editing the data

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augmentation. Once changes are done, use the Reload Data option to reset and refresh the data thereby enabling the data augmentation to re-extract in full.

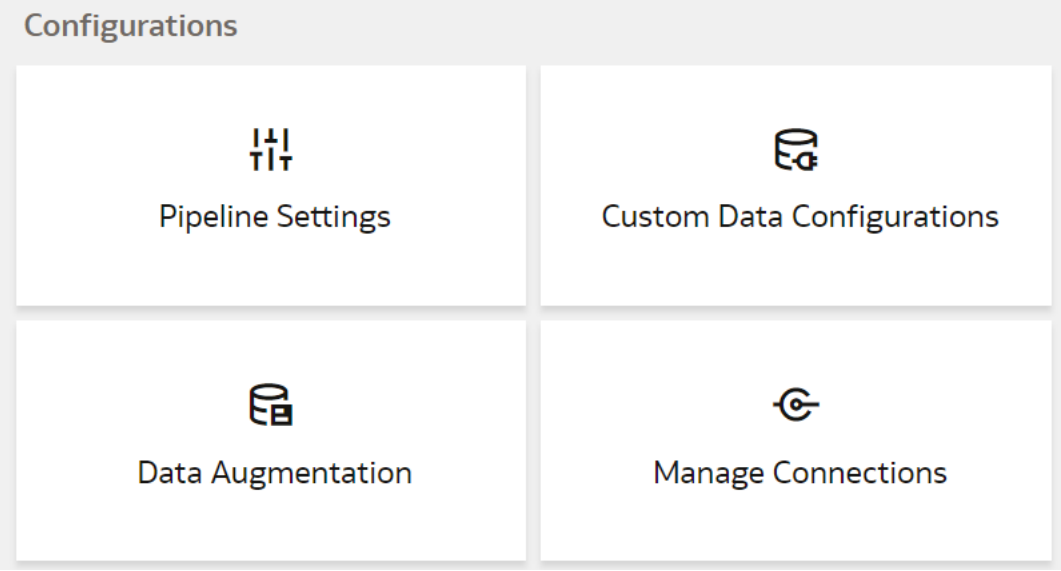
Augment Your Data

You can supplement the data in your reports by using datasets that you create with specific columns from various data stores (Business Intelligence view objects) of the Oracle Fusion Cloud Applications data sources.

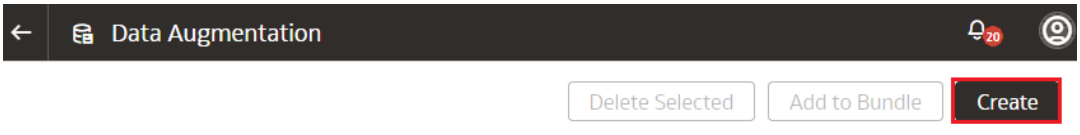
Refer to Review Database Lineage Mappings and View Objects while deciding which view objects to use in the data augmentations.

> **Note**
>
> If you're creating a data augmentation for Oracle Fusion Cloud Applications data source, you're highly recommended to use "Fusion Augmentations Source". See Perform Data Augmentations with Fusion Augmentations Source.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under Configurations, click **Data Augmentation**.



4. On the Data Augmentation page, click **Create**.



You can create the following augmentation types:

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- Dimension, see Create a dimension.
- Fact, see Create a fact.
- Entity Extension, see Extend an entity.
- Dataset, see Create a dataset.

Create Dimension Augmentation Type

You can augment your reports with datasets created by adding a new dimension in the target instance.

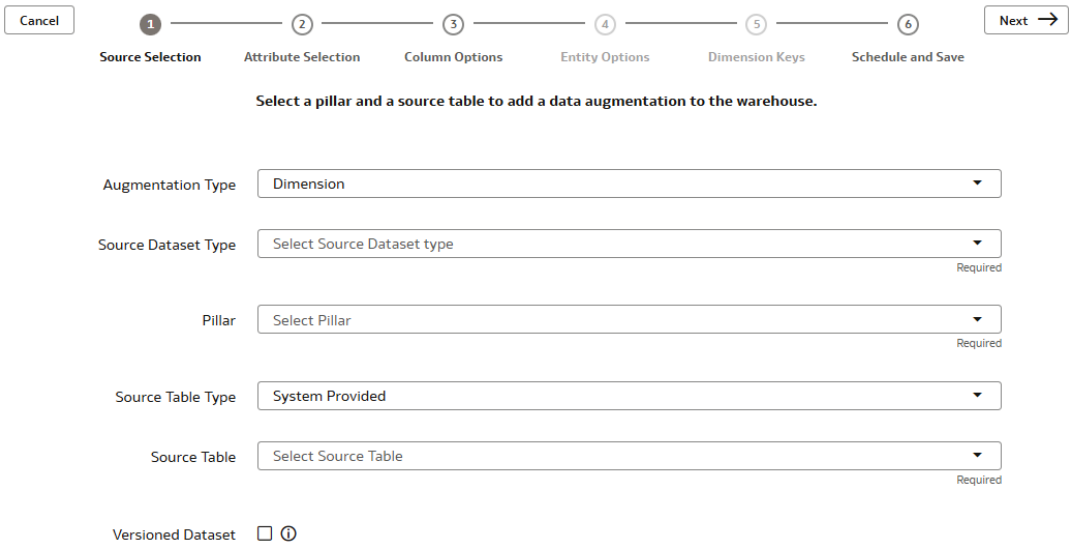
> **Note**
>
> This function is no longer recommended for use and may be removed in a future release. The recommended approach is to use Dataset augmentation type to augment your data. See Create Dataset Augmentation Type.

Ensure that the custom dimensions that you create in augmentations are used by facts. If they aren't used, then the custom dimensions aren't visible in the subject areas. See Create Fact Augmentation Type.

You must ensure that any column with primary key doesn't have null values, otherwise the extract process rejects the entire dataset or table. If there are multiple columns with primary keys, then you must ensure that none of those columns have null values. If any of them have null values, then Oracle Fusion Data Intelligence rejects the entire extraction job. If Oracle Fusion Data Intelligence rejects the extraction job, then the corresponding augmentation is also rejected.

If you've existing augmentations utilizing this feature, enable the **SME Options for Data Augmentation** in the Pipeline Features section under the Generally Available Features tab on the Enable Features page. See Enable Generally Available Features.

1. In step 1 of the Data Augmentation wizard, select **Dimension** in **Augmentation Type** to add a new dimension in the target instance.



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2. Select **Supplemental Data (Regular)** in **Source Dataset Type**.
3. In **Pillar**, select a product pillar; for example, **Enterprise Resource Planning**.
4. In **Source Table Type**, specify the source table type using either of the options:
   - Select **System Provided** and then in **Source Table**, select a table to which you want to add the new dimension.
   - Select **Customer Provided** and then in **Source Table**, enter the name of the table to which you want to add the new dimension.
5. Optional: Select the **Versioned Dataset** checkbox to enable full load of the source table data everytime and then click **Next**.
6. In step 2 of the wizard, select the checkbox for the attributes from the source table that you want in your new dimension, and then click **Next**.
7. In step 3 of the wizard, click **Action** icon for each of the selected attributes to specify whether the attribute is the **Primary Key**. Additionally, for date type columns (TIMESTAMP), specify whether the attribute is the **Incremental Key**, and then click **Next**.
8. In step 6 of the wizard, provide the following details and click **Finish** to save and schedule your data augmentation pipeline job:
   a. Name your augmentation pipeline job; for example, `Customer Class Code`.
   b. Enter a suffix for the target table name using underscore in place of spaces between words and don't use special characters; for example, `Customer_Class_D`. The augmentation process automatically creates the target table name.

      > **Note**
      >
      > The table suffix is limited to a maximum of 35 characters, and you can't extend this limit.

   c. Provide a description.
   d. Select the functional area and one or multiple subject areas in which you want to include this augmentation pipeline job.
   e. Specify the options to save the data augmentation pipeline job without executing it, or schedule the execution date and time, or execute it immediately.

Create Fact Augmentation Type

You can augment your reports with datasets created by adding a new fact in the target instance.

> **Note**
>
> This function is no longer recommended for use and may be removed in a future release. The recommended approach is to use Dataset augmentation type to augment your data. See Create Dataset Augmentation Type.

If you've created custom dimensions for augmentations, then you can select such dimensions to map to the column that you identify as the Dimension entity type. This enables the custom dimensions to be visible in the subject areas.

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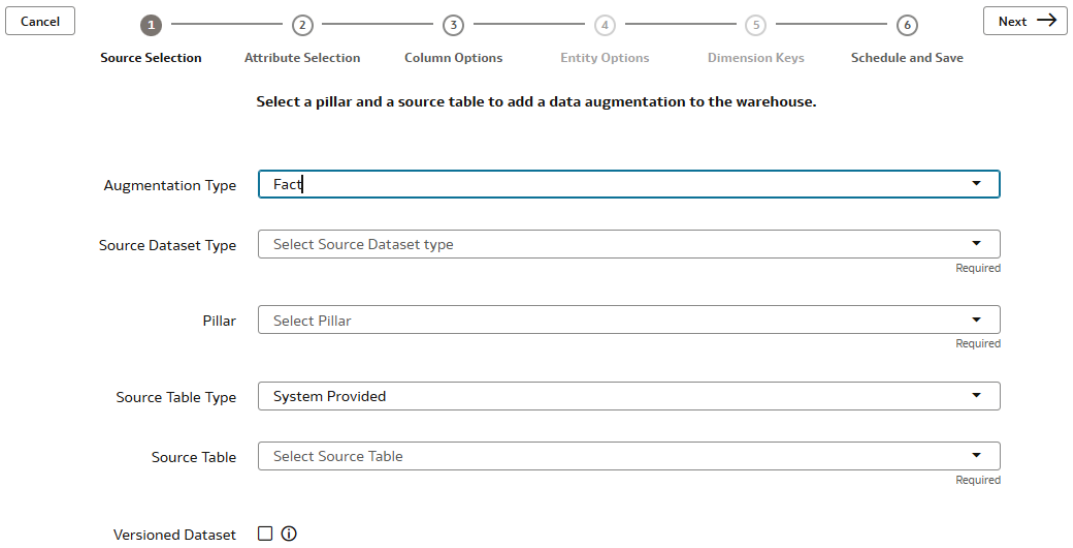
You must ensure that any column with primary key doesn't have null values, otherwise the extract process rejects the entire dataset or table. If there are multiple columns with primary keys, then you must ensure that none of those columns have null values. If any of them have null values, then Oracle Fusion Data Intelligence rejects the entire extraction job. If Oracle Fusion Data Intelligence rejects the extraction job, then the corresponding augmentation is also rejected.

If you've existing augmentations utilizing this feature, enable the **SME Options for Data Augmentation** in the Pipeline Features section under the Generally Available Features tab on the Enable Features page. See Enable Generally Available Features.

1. In step 1 of the Data Augmentation wizard, select **Fact** in **Augmentation Type** to add a new fact table in the target instance.



2. Select **Supplemental Data (Regular)** in **Source Dataset Type**.
3. In **Pillar**, select a product pillar; for example, **Enterprise Resource Planning**.
4. In **Source Table Type**, specify the source table type using either of the options:
   - Select **System Provided** and then in **Source Table**, select a table to which you want to add the new dimension.
   - Select **Customer Provided** and then in **Source Table**, enter the name of the table to which you want to add the new dimension.
5. Optional: Select the **Versioned Dataset** checkbox to enable full load of the source table data everytime and then click **Next**.
6. In step 2 of the wizard, select the checkbox for the attributes from the source table that you want in your new fact, and then click **Next**.
7. In step 3 of the wizard, click **Action** icon for each of the selected attributes to specify whether the attribute is the **Primary Key**. Additionally, for date type columns (TIMESTAMP), specify whether the attribute is the **Incremental Key**, and then click **Next**.

   Ensure that you select at least one attribute as a measure to proceed through the wizard.
8. In step 5 of the wizard, specify the dimension in the data warehouse that you want to map to the column that you identified as the Dimension entity type and then click **Next**.

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9. In step 6 of the wizard, provide the following details and click **Finish** to save and schedule your data augmentation pipeline job:
    a. Name your augmentation pipeline job; for example, `AP Distribution`.
    b. Enter a suffix for the target table name using underscore in place of spaces between words and don't use special characters; for example, `AP_DISTRIBUTION_F`. The augmentation process automatically creates the target table name.

> **Note**
>
> The table suffix is limited to a maximum of 35 characters, and you can't extend this limit.

    c. Provide a description.
    d. Select the functional area and one or multiple subject areas in which you want to include this augmentation pipeline job.
    e. Specify the options to save the data augmentation pipeline job without executing it, or schedule the execution date and time, or execute it immediately.

Extend an Entity

You can augment your reports with datasets created by extending an existing entity or group of facts.

> **Note**
>
> This function is no longer recommended for use and may be removed in a future release. The recommended approach is to use Dataset augmentation type to augment your data. See Create Dataset Augmentation Type.

While extending an entity or group of facts, ensure that you select Descriptive Flex Field (New) as the source dataset type to select the necessary columns for the augmentation. The existing approach of skipping the column selection is deprecated and won't be available from a future release.

You must ensure that any column with a primary key doesn't have null values, otherwise the extract process rejects the entire dataset or table. If there are multiple columns with primary keys, then you must ensure that none of those columns have null values. If any of them have null values, then Oracle Fusion Data Intelligence rejects the entire extraction job. If Oracle Fusion Data Intelligence rejects the extraction job, then the corresponding augmentation is also rejected.

If you've existing augmentations utilizing this feature, enable the **SME Options for Data Augmentation** in the Pipeline Features section under the Generally Available Features tab on the Enable Features page. See Enable Generally Available Features.

1. In step 1 of the Data Augmentation wizard, select **Entity Extension** in **Augmentation Type**.

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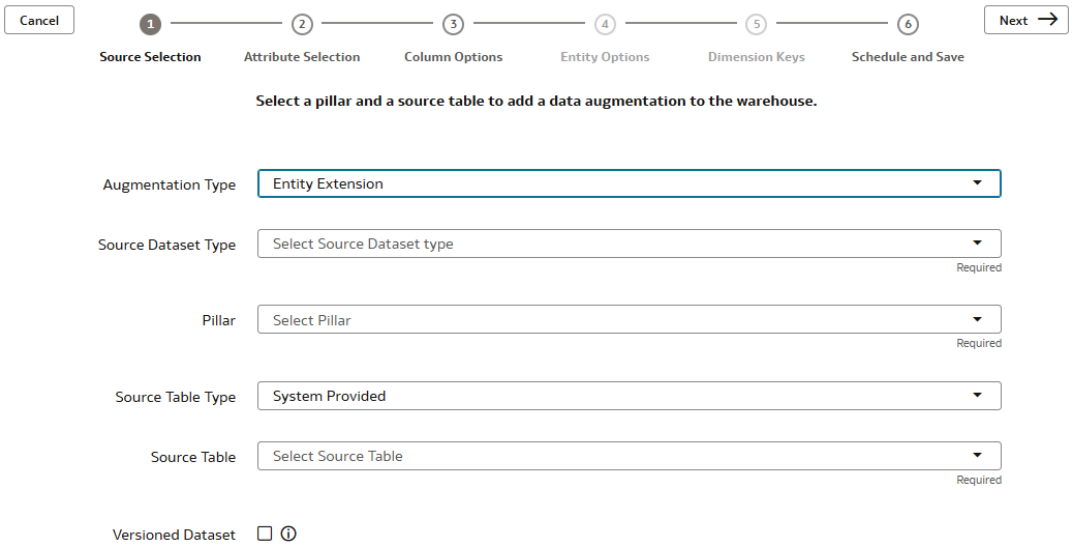

2. Select **Descriptive Flex Field (New)** in **Source Dataset Type**.
3. In **Pillar**, select a product pillar; for example, **Enterprise Resource Planning**.
4. In **Source Table Type**, specify the source table type using either of the options:
   - Select **System Provided** and then in **Source Table**, select a table from the list of view objects that support descriptive flex fields.
   - Select **Customer Provided** and then in **Source Table**, enter the name of the table that supports descriptive flex fields.
5. Optional: Select the **Versioned Dataset** checkbox to enable full load of the source table data every time and then click **Next**.
6. In step 2 of the wizard, select the checkbox for the attributes from the source table that you want in your target table, and then click **Next**.
7. In step 3 of the wizard, click **Action** icon for each of the selected attributes to specify whether the attribute is the **Primary Key**. Additionally, for date type columns (TIMESTAMP), specify whether the attribute is the **Incremental Key**, and then click **Next**.
8. In step 4 of the wizard, select the entity or group of fact tables to extend and its primary keys, and then click **Next**. For example, if you select **ARTransaction** as the entity to extend, then this process joins the prebuilt **InvoiceID** descriptive flex field using the **s_k_5000** primary join key with all the fact tables in the ARTransaction entity.
9. In step 5 of the wizard, choose the primary keys for the attributes that you had specified to be treated as dimensions.
10. In step 6 of the wizard, provide the following details and click **Finish** to save and schedule your data augmentation pipeline job:
    a. Name your augmentation pipeline job; for example, `AP Invoice Header`.
    b. Enter a suffix for the target table name using underscore in place of spaces between words and don't use special characters; for example, `AP_Invoice_Header_DFF`. The augmentation process automatically creates the target table name.

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> **Note**
>
> The table suffix is limited to a maximum of 35 characters, and you can't extend this limit.

c. Provide a description.

d. Select the functional area and one or multiple subject areas in which you want to include this augmentation pipeline job.

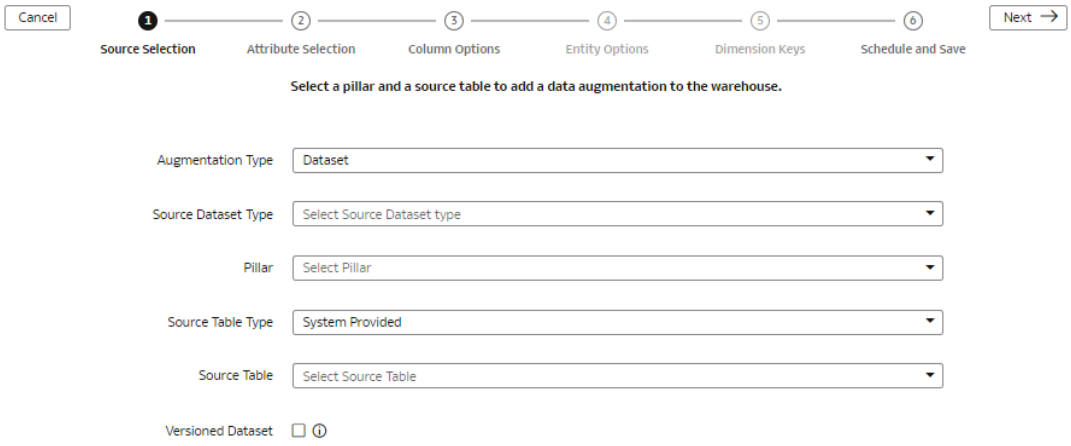
e. Specify the options to save the data augmentation pipeline job without executing it, or schedule the execution date and time, or execute it immediately.

Create Dataset Augmentation Type

You must create a dataset to be copied into a target warehouse table, as is, and then perform semantic model extension on it. In such cases, create an input dataset.

This dataset isn't associated with any other augmentations. Based on the incremental schedule, the data in this dataset gets refreshed during scheduled pipeline refresh. But unlike other augmentations, this augmentation isn't linked to other augmentations, and you can't change the attributes as dimension or measure. This dataset isn't associated with any subject area because it copies the dataset from source and creates a warehouse table. You can perform semantic model extension after the table is created. To use this dataset to build the joins or incorporate an object from the dataset into your semantic model, you must run an incremental load prior to using it because the incremental load populates the dataset.

1. In step 1 of the Data Augmentation wizard, select **Dataset** in **Augmentation Type** to add a new warehouse table.



2. Select **Supplemental Data** in **Source Dataset Type**.
3. In **Pillar**, select a product pillar; for example, **Enterprise Resource Planning**.
4. In **Source Table Type**, specify the source table type using either of the options:
   - Select **System Provided** and then in **Source Table**, select a table whose attributes you want to add into the input dataset.
   - Select **Customer Provided** and then in **Source Table**, enter the name of the table whose attributes you want to add into the input dataset

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5. Optional: Select the **Versioned Dataset** checkbox to enable full load of the source table data every time as part of the data maintenance schedule and then click **Next**.

   See Schedule Data Maintenance.

6. In step 2 of the wizard, select the checkbox for the attributes from the source table to add to the target table, and then click **Next**.
7. In step 3 of the wizard, select the settings for the selected columns, and then click **Next**.
8. In step 6 of the wizard, provide the following details and click **Finish** to save and schedule your data augmentation pipeline job:
   a. Provide a name and description for your augmentation.
   b. Enter a suffix for the target table name using underscore in place of spaces between words and don't use special characters; for example, `Customer_Class_D`. The augmentation process automatically creates the target table name.

      > **Note**
      >
      > The table suffix is limited to a maximum of 35 characters, and you can't extend this limit.

   c. Specify the options to save the data augmentation pipeline job without executing it, or schedule the execution date and time, or execute it immediately.

Perform Data Augmentations with Fusion Augmentations Source

As a functional administrator, you can extract specific data from Oracle Fusion Cloud Applications at a higher frequency for your organization's analytics needs. The Fusion Augmentations data source enables you to augment your analytics with "raw" data based on the public view objects (PVOs) of Oracle Fusion Cloud Applications at a higher frequency.

The Fusion Augmentations data source is an alias of the core Oracle Fusion Cloud Applications source, and you can only create data augmentations using this source. Since this source is dedicated for data augmentations from Oracle Fusion Cloud Applications, the capabilities available in pipeline settings are limited to data augmentation as well. For example, you can't use this source and activate any functional areas.

After extracting the data through the data augmentation, you can run the Frequent Data Refresh process on the applicable data augmentation tables. The Frequent Data Refresh process runs faster on this data than the Frequent Data Refresh on the prebuilt contents because there is no resource contention with processing of the prebuilt content and no transformations. Although this capability most benefits higher frequency refreshes, you can use this source for any data augmentations just to keep the main data pipeline less congested and perform better.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence Console, click **Enable Features** under **Application Administration**.
3. On the Enable Features page, from the **Generally Available Features** tab under **Connectors**, enable the **Fusion Augmentations** feature. See Generally Available Features.
4. On the Data Configuration page, in **Data Source**, select **Fusion Augmentations**.

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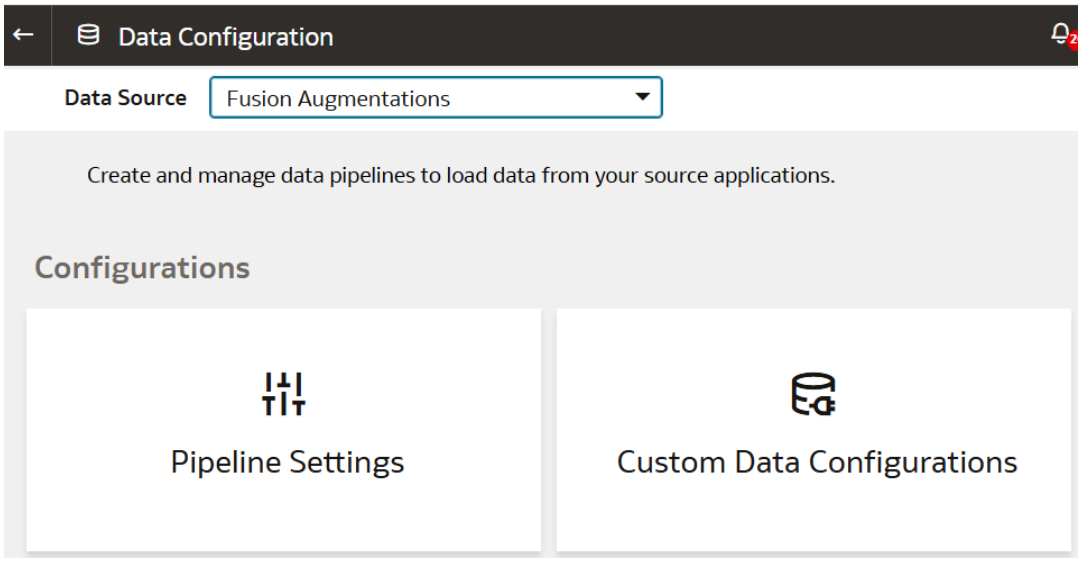

5. On the Data Configuration page, click **Data Augmentations**, and on the Data Augmentations page, create a data augmentation. See Augment Your Data.
6. Navigate to the Pipeline Settings page, and schedule frequent refresh of the warehouse tables and frequent data refreshes.

   While performing these tasks, you only see tables that are part of the data augmentation, not all the warehouse tables. See Schedule Frequent Refreshes of Warehouse Tables (Preview).
7. Track the progress of the frequent refreshes on the Request History page.

   See View Request History.

> **Note**
>
> Tables created with the Fusion Augmentations source have the “DW_FOPS” prefix.

Refresh and Reload a Data Augmentation

You can refresh and reload the data augmentation whenever you require. These actions ensure that Autonomous AI Lakehouse reflects the latest updates in the augmentations.

When you refresh the data augmentation, the system executes an incremental refresh immediately. Reload the data augmentation to repopulate the warehouse using the augmented dataset definition so the new and updated attributes for the selected data augmentation are refreshed for existing data and for future incremental refreshes.

If you're using a versioned dataset, the reload process rebuilds the warehouse with the new dataset version and becomes a data maintenance activity. See Schedule Data Maintenance.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration** and then click **Data Augmentation**.
3. On the Data Augmentation page, click the **Action** icon for the applicable data augmentation.

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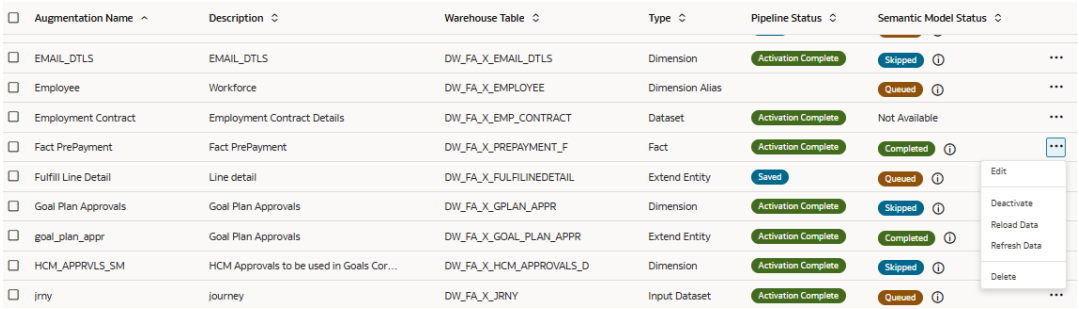
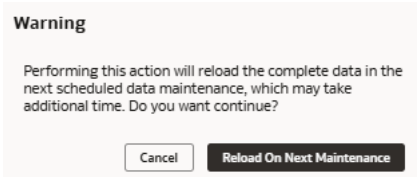


4. From the actions, click **Reload Data**, and in the Warning dialog, click **Reload On Next Maintenance**.



5. From the actions, click **Refresh Data** for an immediate incremental refresh.

Create a Dimension Alias

Dimension alias are alias names on the warehouse dimension tables. You can specify the alias names for the Dimension type augmentations and the data that's in the warehouse already as dimensions. The alias names enable you to reuse the existing warehouse tables with different names in the subject areas.

You create dimension aliases as a type of augmentation. This is useful when you want to reinstate a dimension for analysis. For example, if the Purchase Requisition has columns such as “Requested By”, “Ordered By”, and “Received By”, all of which are different types of employees, and you need to analyze for each type, then you need to join the fact table to the employee table for each type. In this case, the employee dimension is aliased as “Requested By Employee Dim”, “Ordered By Employee Dim” and “Received By Employee Dim” and joined to the fact table using the appropriate keys.

When you create the aliases, Oracle Fusion Data Intelligence doesn’t copy the data for the dimension aliases. These augmentations don’t have a pipeline status, but they are visible in the subject area.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Configurations**, click **Data Augmentation**.
4. On the Data Augmentation page, click **Create**, and select **Dimension Alias**.

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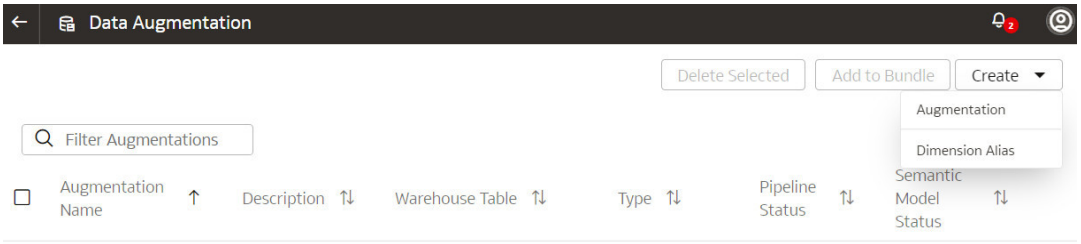
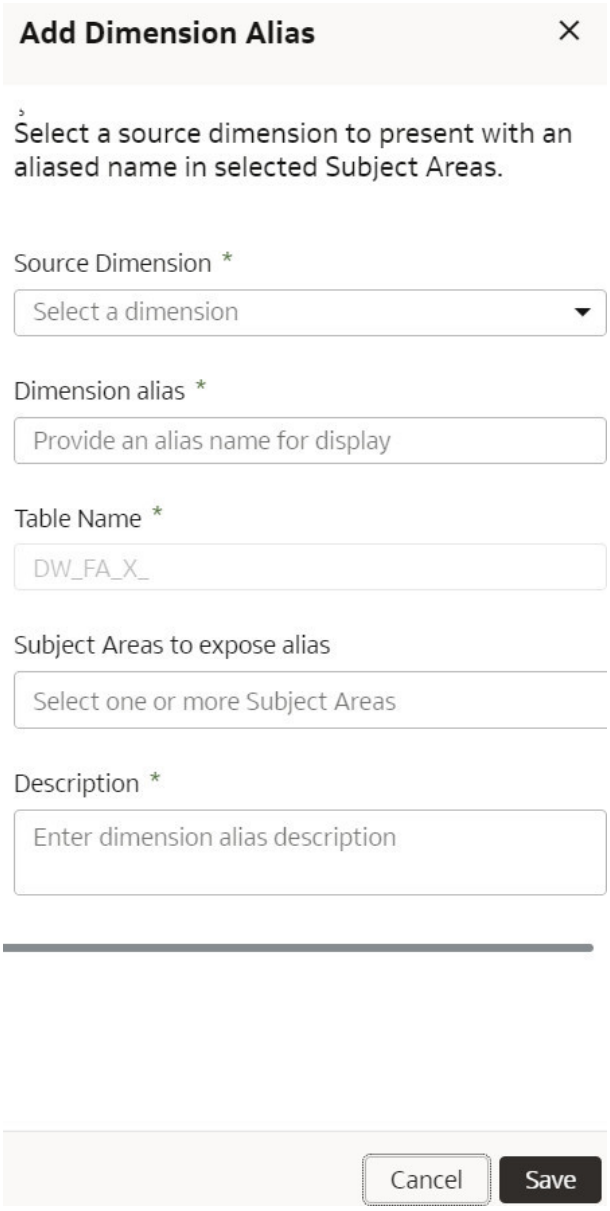


5. In the Add Dimension Alias dialog, in **Source Dimension**, select a dimension from the source tables such as Employee.



6. In **Dimension Alias**, enter a name such as Employee Dim.

   In **Table Name**, Oracle Fusion Data Intelligence displays the name such as DW_FA_X_EMPLOYEE_DIM.

7. In **Subject Areas to expose alias**, select one or more subject areas from the subject areas where the original source dimension exists.

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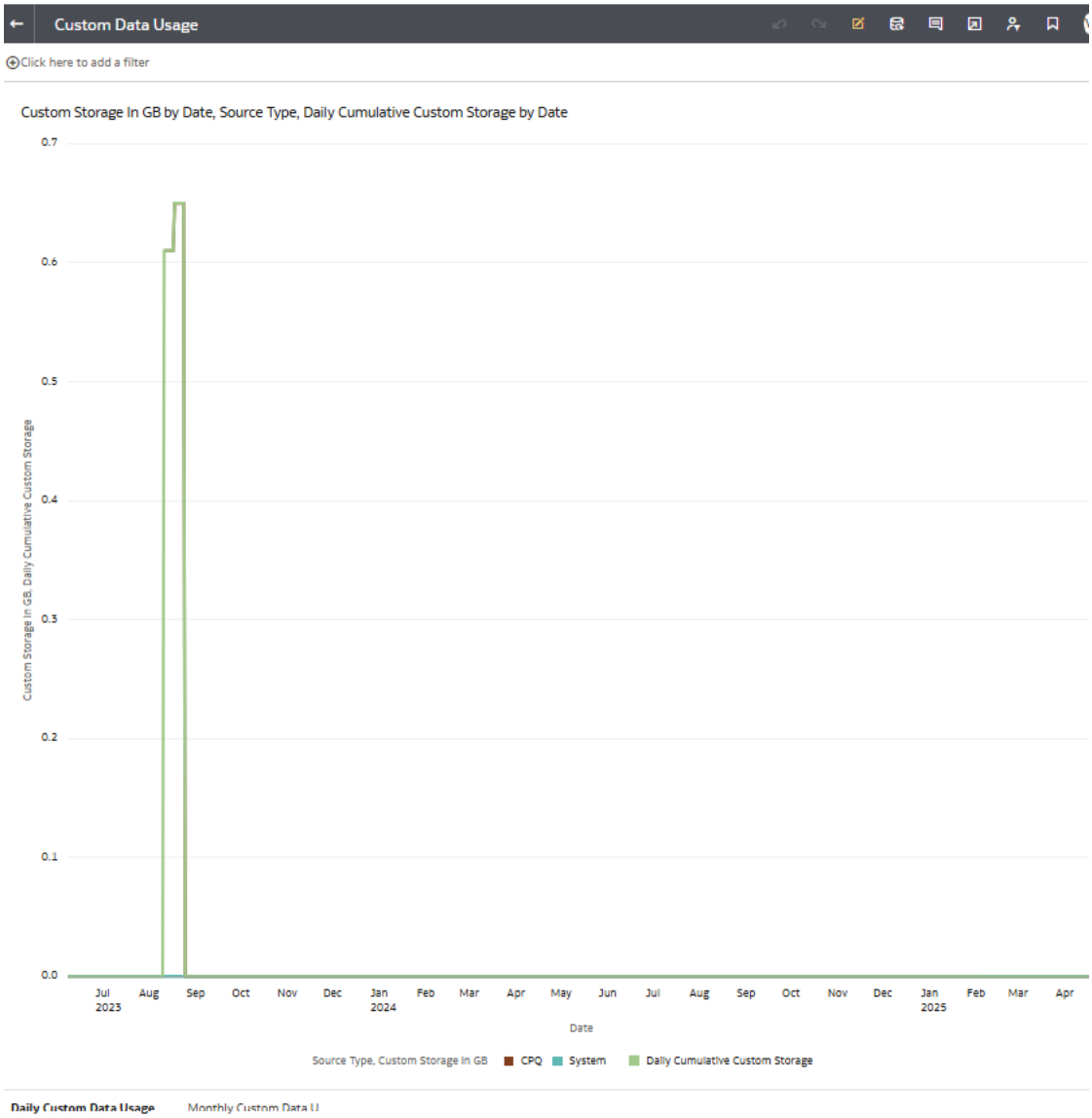
8. Add a description of the dimension alias.
9. Click **Save**.

Manage Data Connections

You can connect to a variety of data sources and remote applications to provide the background information for reports. You can blend the additional data from the various data sources with the prebuilt datasets to enhance business analysis.

Oracle Fusion Data Intelligence can connect to other pre-validated data sources such as Oracle Object Storage, cloud applications such as Google Analytics, and on-premises applications such as Oracle E-Business Suite.

You can view the usage of capacity for custom data that's loaded into Oracle Fusion Data Intelligence through the connectors in the Custom Data Usage dashboard available in the Common folder. The dashboard shows data loaded daily and monthly from each of the activated external data sources.



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Topics

- Connect With On-premises Sources
- Connect with Cloud File Storage Sources
- Connect With Cloud Sources

Connect With On-premises Sources

Connect with your on-premises applications to provide the background information for reports.

You can blend the additional data from these data sources with the prebuilt datasets to enhance business analysis.

Topics

- Set up the Remote Agent to Load Data into Fusion Data Intelligence (Preview)
- Load Data from On-premises E-Business Suite into Fusion Data Intelligence (Preview)
- Load Data from On-premises JD Edwards into Fusion Data Intelligence (Preview)
- Load Data from On-premises MySQL Database into Fusion Data Intelligence (Preview)
- Load Data from On-premises PeopleSoft into Fusion Data Intelligence (Preview)
- Load Data from SQL Server into Oracle Fusion Data Intelligence (Preview)
- Load Data from Oracle Database Using JDBC into Fusion Data Intelligence (Preview)

Set up the Remote Agent to Load Data into Fusion Data Intelligence (Preview)

As a service administrator, you can use an extract service remote agent to connect to your on-premises systems such as E-Business Suite, Peoplesoft, and JD Edwards, load data from these on-premises systems into Oracle Fusion Data Intelligence, and then use the on-premises data to create data augmentations.

After connecting to your on-premises system, the remote agent extracts the data and loads it into the autonomous data warehouse associated with your Oracle Fusion Data Intelligence instance. You can extract and load the on-premises data into Oracle Fusion Data Intelligence only once in 24 hours.

Configuring an extract service remote agent to connect to your on-premises systems and load data from these on-premises systems into Oracle Fusion Data Intelligence involves the following steps:

1. Perform Remote Agent Connection Prerequisites.
2. Configure TLS for Remote Agent Configuration (Optional).
3. Run the Remote Agent docker container and use the Remote Agent command line interface tool.
    a. For Windows users, see Run the Remote Agent Docker on Windows and Configure the Remote Agent Using the Command Line Interface Tool on Windows.
    b. For Linux users, see Run the Remote Agent Docker on Linux and Configure the Remote Agent Using the Command Line Interface Tool on Linux.
4. Create the Remote Agent Connection.

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Perform Remote Agent Connection Prerequisites

As a service administrator, you must perform setup steps before configuring an extract service remote agent to connect to your on-premises systems and load data from these on-premises systems into Oracle Fusion Data Intelligence.

1. Ensure that **Remote Agent** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.
2. Sign into Oracle Container Registry and accept the license agreement.
3. Generate an Oracle Cloud Infrastructure authentication token. See Getting an Auth Token. The system uses this value in place of `<Auth_Token>` in the command used to sign in to the docker registry.
4. Identify a host to deploy the remote agent.

   The host that you identify must meet these minimum system requirements for the basic configuration of a single source agent:

   - CPU: 4 (CORE/CPU)
   - Memory: 8 GB
   - Storage: 8 GB

   > **Note**
   >
   > Ensure that the host can connect to the applicable database through JDBC.

Configure TLS for Remote Agent Configuration (Optional)

You can configure your remote agent to use your TLS certificate instead of the default.

You can either use the default TLS certificate provided in the keystore with the remote agent or provide your own keystore and TLS certificate.

1. If you don't have a keystore, then generate one using the keytool CLI command such as:

   ```
   keytool -genkeypair -alias springboot -keyalg RSA -keysize 4096 -storetype
   PKCS12 -keystore springboot.p12 -validity 3650 -storepass password -ext
   SAN=dns:test.example.com
   ```

   Instructions on how to use the keytool CLI command can be found here.
2. To provide your own keystore and TLS certificate, complete these steps:
   a. After generating the keystore, place it in the `/faw/software/remoteagent/config` (`C:\faw\software\remoteagent\config` on Windows) directory of your local instance. Once in this directory, you must create a `startup-config.properties` file. This properties file contains the keystore information and credentials needed by the remote agent to connect to it and fetch the TLS certificate.
   b. In the `startup-config.properties` file, add the following key-value properties:

   ```
   server.ssl.enabled=true
   server.ssl.key-store=</PATH/TO/KEYSTORE_FILE>
   server.ssl.key-store-password=<KEYSTORE_PASSWORD>
   server.ssl.key-store-type=<KEYSTORE_TYPE>
   ```


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```
server.ssl.key-alias=<KEYSTORE_ALIAS>
server.ssl.key-password=<KEY_PASSWORD>
```

The values for each key pair are as follows:

- </PATH/TO/KEYSTORE_FILE> - File location of the keystore file
- <KEYSTORE_PASSWORD> - Password specified for the keystore
- <KEYSTORE_TYPE> - Type specified for the keystore, should be either JKS or PKCS12
- <KEYSTORE_ALIAS> - Alias specified for the keystore
- <KEY_PASSWORD> - Certificate password, NOT the password for the keystore

3. After specifying all the required properties in the startup-config.properties file, restart the remote agent docker. The remote agent uses your TLS certificate instead of the default.

Run the Remote Agent Docker on Windows

Run the Remote Agent docker container as part of the remote agent connection configuration for Oracle Fusion Data Intelligence.

The docker image name for release 26.R3 is `container-registry.oracle.com/fdi/remoteagent:27.5.0`. Use this name in any commands that call for `<docker_image>`.

1. Open a terminal on the host VM and run the following commands to create required directories and apply appropriate permissions.

```
icacls "C:/faw/software/remoteagent/" /grant Everyone:F /t
        icacls "C:/faw/logs/RemoteAgent/" /grant Everyone:F /t
```

> **Note**
>
> - `icacls`: This is a command-line tool used to manage file and directory access control lists (ACLs).
> - `"C:/faw/software/remoteagent/"`: This specifies the target directory where ACL changes will be applied.
> - `/grant Everyone:F`: This grants the "Everyone" group Full Control (F) permissions to the specified directory and all subdirectories and files recursively due to the "/t" switch. The user needs write permissions, hence "F" (full control was given). To use user-specific permission, replace "Everyone" with username.

2. Log in to the docker registry with the following command, replacing `<username>` with the email ID used to log into Oracle Container Registry, and `<Auth_Token>` with the value created earlier. See Perform Remote Agent Connection Prerequisites.

```
docker login container-registry.oracle.com -u <username> -p <Auth_Token>
```


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3. Create and run the docker container with the appropriate docker image name in place of <docker_image>

```
docker run -d -p 9091:9091 --name remoteagent -v /faw/software/remoteagent/
config/:/faw/software/remoteagent/config/ -v /faw/logs/RemoteAgent/:/faw/
logs/RemoteAgent <docker_image>
```

For example:

```
docker run -d -p 9091:9091 --name remoteagent -v /faw/software/remoteagent/
config/:/faw/software/remoteagent/config/ -v /faw/logs/RemoteAgent/:/faw/
logs/RemoteAgent container-registry.oracle.com/fdi/remoteagent:27.5.0
```

4. Verify that the container has started successfully using this script:

```
run '$ docker ps'
```

5. If you need to upgrade the remote agent in the Windows host, then use the following script:

```
docker run -d -p 9091:9091 --name remoteagent -v C:/faw/software/
remoteagent/config/:/faw/software/remoteagent/config/:Z
      -v C:/faw/logs/RemoteAgent/:/faw/logs/RemoteAgent <docker_image>
```

Configure the Remote Agent Using the Command Line Interface Tool on Windows

Use the Remote Agent command line interface (CLI) tool to configure the remote agent.

- Ensure that Windows Subsystem for Linux (WSL) is installed on your system.
- Administrator access is required.

1. Open WSL in Administrator Mode.
2. Run the following command to check if the jq package is already installed:

```
jq --version
```

If the output displays a version number, that means jq is installed. If you see any other output or an error, run the following commands to install jq. Use your WSL Linux user password if you're prompted for credentials.

```
sudo apt update
sudo apt install jq -y
```

3. Run the following command to verify that jq is now installed.

```
jq --version
```

You should see the version number of jq that you just installed.

4. If you don't know your WSL Linux user password:
   a. Open PowerShell and run the following command to display the list of installed WSL distributions. Note the distribution name, such as "Ubuntu": `wsl -l -v`.

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b. Run the following command, replacing <distroName> with your actual distribution name:`wsl -d <distroName> -u root`. For example, `wsl -d Ubuntu -u root`

c. In the root shell, reset your user password with the following command: `passwd <username>`, replacing `username` with your Linux username. You can find your Linux username with the following command: `ls /home`. Enter a new password when prompted.

d. Exit the root shell with the command `exit`.

e. Open your WSL terminal and use the newly created password.

5. On the machine running docker, navigate to the remote agent setup directory:

```
cd C:\faw\software\remoteagent\config\setup
```

6. Run the Remote Agent CLI script.

```
./remoteAgentCLI.sh
```

7. Type 1 in RemoteAgentCLI and press Enter.

   You can form the extract service URL based on your Oracle Fusion Data Intelligence URL by replacing `ui/oax/` with the extract service context path. For example, if your product URL is `https://myinstance.example.com/ui/oax/`, then the extract service URL would be `https://myinstance.example.com:443/extractservice`.
   The default save location for configuration details (`config.json`) is `C:\faw\software\remoteagent\config\config_json\`. You may also choose to specify a save location.

8. Optional: Type 3 in RemoteAgentCLI to generate RemoteAgent logs (remote_agent_logs.zip), which are saved by default to `C:\faw\logs\RemoteAgent`. You may also choose to specify a save location.

9. `config.json` needs to be on the same system as the one that will access the oax URL. Copy the full `config.json` file or copy the contents of the file (and save it in JSON format) from the VM to your local machine. You use it to set up the connection on the Data Configuration page in Oracle Fusion Data Intelligence.

Run the Remote Agent Docker on Linux

Run the Remote Agent docker container as part of the remote agent connection configuration for Oracle Fusion Data Intelligence.

The docker image name for release 26.R3 is `container-registry.oracle.com/fdi/remoteagent:27.5.0`. Use this name in any commands that call for `<docker_image>`.

1. Open a terminal on the host VM and run the following commands to create required directories and apply appropriate permissions:

   - `{color:#00875a}mkdir -p /faw/software/remoteagent/config{color}`
   - `chmod -R 0777 /faw/software/remoteagent/`
   - `mkdir /faw/logs/RemoteAgent/config`
   - `chmod -R 0777 /faw/logs/RemoteAgent/config`

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2. Log in to the docker registry with the following command, replacing <username> with the email ID used to log into Oracle Container Registry, and <Auth_Token> with the value created earlier. See Perform Remote Agent Connection Prerequisites.

```
docker login container-registry.oracle.com -u <username> -p <Auth_Token>
```

3. Create and run the docker container with the appropriate docker image name in place of <docker_image>

```
docker run -d -p 9091:9091 --name remoteagent -v /faw/software/remoteagent/
config/:/faw/software/remoteagent/config/ -v /faw/software/remoteagent/
autonomous-extractors/:/faw/software/remoteagent/autonomous-extractors/ -
v /faw/software/custom-extractors/:/faw/software/custom-extractors -v /faw/
logs/RemoteAgent/:/faw/logs/RemoteAgent <docker_image>{code}
```

For example:

```
docker run -d -p 9091:9091 --name remoteagent -v /faw/software/remoteagent/
config/:/faw/software/remoteagent/config/ -v /faw/software/remoteagent/
autonomous-extractors/:/faw/software/remoteagent/autonomous-extractors/ -
v /faw/software/custom-extractors/:/faw/software/custom-extractors -v /faw/
logs/RemoteAgent/:/faw/logs/RemoteAgent container-registry.oracle.com/fdi/
remoteagent:27.5.0
```

If the remote agent isn't responding, execute the script again with the *--network host* parameter enabled.

> **Note**
>
> Ensure that the logs directory in /faw/logs/RemoteAgent/ has write permissions and the config folder in /faw/software/remoteagent/config/ is present in case you need to add custom properties.

4. Verify that the container has started successfully using this script:

```
run '$ docker ps'
```

5. If you need to upgrade the remote agent in the Linux host, then use the following script:

```
Stop Remoteagent docker
sudo docker stop remoteagent

Remove Remoteagent docker
sudo docker rm remoteagent

Run the image:
sudo docker run -d -p 9091:9091 --name remoteagent -v /faw/software/
remoteagent/config/:/faw/software/remoteagent/config/:Z -v /faw/software/
remoteagent/autonomous-extractors/:/faw/software/remoteagent/autonomous-
extractors/:Z -v /faw/software/custom-extractors/:/faw/software/custom-
extractors:Z -v /faw/logs/RemoteAgent/:/faw/logs/RemoteAgent:Z
<docker_image>
```


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Configure the Remote Agent Using the Command Line Interface Tool on Linux

Use the Remote Agent command line interface (CLI) tool to configure the remote agent.

1. On the machine running docker, navigate to the remote agent setup directory:

   ```
   cd /faw/software/remoteagent/config/setup/
   ```

2. Run the Remote Agent CLI script.

   ```
   ./remoteAgentCLI.sh
   ```

3. Type 1 in RemoteAgentCLI and press Enter.

   You can form the extract service URL based on your Oracle Fusion Data Intelligence URL by replacing `ui/oax/` with the extract service context path. For example, if your product URL is `https://myinstance.example.com/ui/oax/` then the extract service URL would be `https://myinstance.example.com:443/extractservice`.
   The default save location for configuration details (`config.json`) is `/faw/software/remoteagent/config/config_json`. You may also choose to specify a save location.

4. Optional: Type 3 in RemoteAgentCLI to generate RemoteAgent logs (remote_agent_logs.zip), which are saved by default to `/faw/logs/RemoteAgent/`. You may also choose to specify a save location.

5. `config.json` needs to be on the same system as the one that will access the oax URL. Copy the full `config.json` file or copy the contents of the file (and save it in JSON format) from the VM to your local machine. You will use it to set up the connection on the Data Configuration page in Oracle Fusion Data Intelligence.

Create the Remote Agent Connection

Configure the remote agent connection on the Data Configuration page in Oracle Fusion Data Intelligence using these instructions.

1. On the Console, click Data Configuration under Application Administration.
2. On the Data Configuration page, click **Manage Connections**.
3. On the Manage Connections page, click **Create** and then click **Connection**.
4. In Create Connection, select **Configuration** in **Usage Type**, and then select **Remote Agent** as the connection type.

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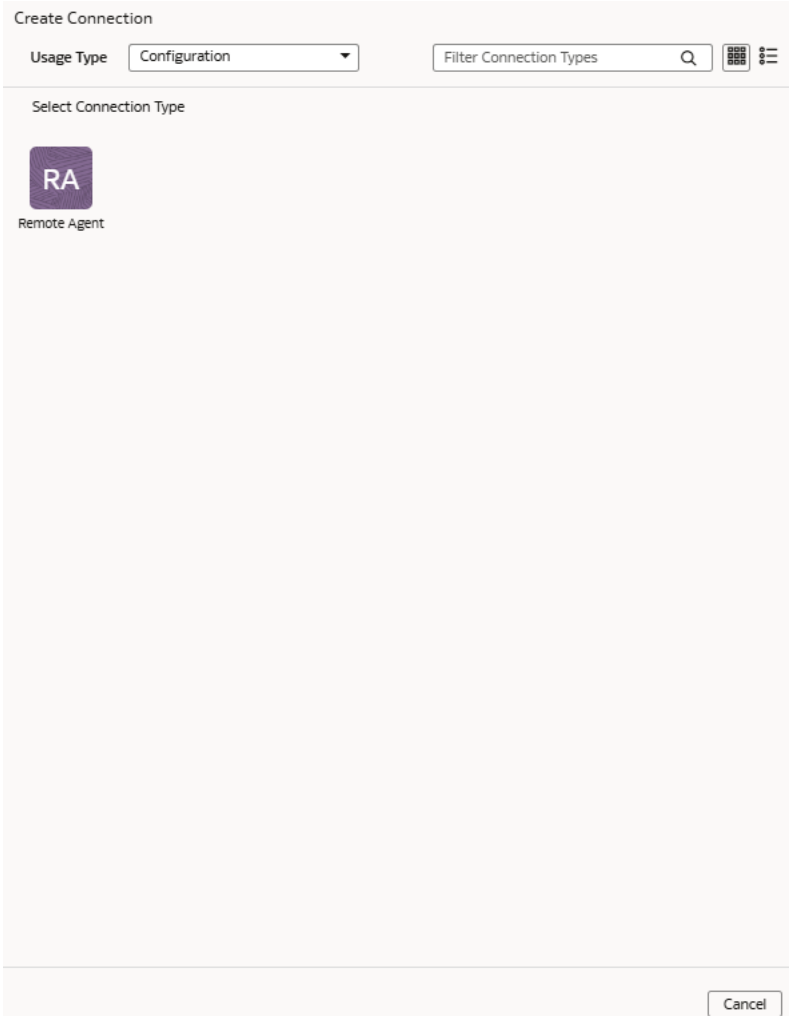

5. In the Create Connection Remote Agent dialog, in **Connection Name**, you can modify the default name and verify that **Remote** is displayed in **Connectivity Type**.

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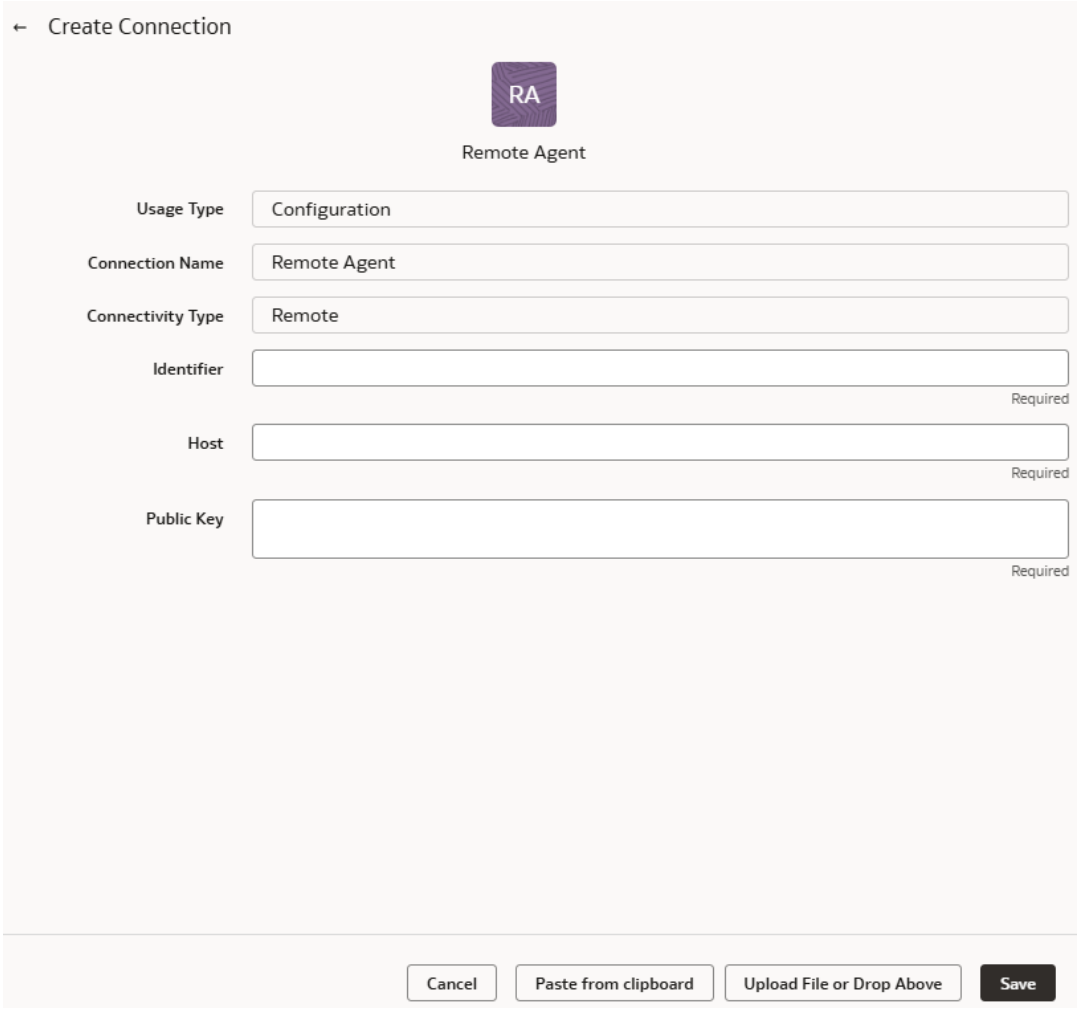

6. Populate the Create Connection page.
   a. Click and drag `config.json` into the dialog, or click **Upload File or Drop Above** and navigate to select `config.json`.
   b. To manually populate this page, open `config.json`, and enter the appropriate values for **Identifier**, **Host**, and **Public Key**.
   c. Click **Save**

> **Note**
>
> After configuring the remote agent on the Data Configuration page, wait for few minutes, refresh the remote agent page, and when you see the Agent Initialised message, you can proceed with other operations such as testing the connection to the remote agent, testing the connection to the remote source like EBusiness Suite, and refreshing the metadata. This enables you to run these jobs without timeout failures because data pipeline has a default timeout of 15 minutes.

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Load Data from On-premises E-Business Suite into Fusion Data Intelligence (Preview)

As a service administrator, you can use an extract service remote agent to connect to your on-premises Oracle E-Business Suite system.

After connecting to your on-premises system, the remote agent extracts the data and loads it into the autonomous data warehouse associated with your Oracle Fusion Data Intelligence instance. The remote agent pulls the metadata through the public extract service REST API and pushes data into object storage using the object storage REST API. You can extract and load the on-premises data into Oracle Fusion Data Intelligence only once a day. Ensure that the user credentials you provide have access to the specific tables they need to extract data from within the EBS schema, whose URL you provide while creating the connection.

Ensure that **Oracle E-Business Suite On-Prem** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. Set up the remote agent to load data from your on-premises Oracle E-Business Suite system into Oracle Fusion Data Intelligence.

   See Set up the Remote Agent to Load Data into Fusion Data Intelligence (Preview).

2. Configure the remote agent and E-Business Suite data source on the Data Configuration page in Oracle Fusion Data Intelligence using these instructions:

   a. On the **Console**, click **Data Configuration** under **Application Administration**.

   b. On the Data Configuration page, click **Manage Connections**.

   c. On the Manage Connections page, click **Create** and then click **Connection**.

   d. In Create Connection, select **Data Extraction** in **Usage Type**, and select **Oracle E-Business Suite On-Prem** as the connection type.

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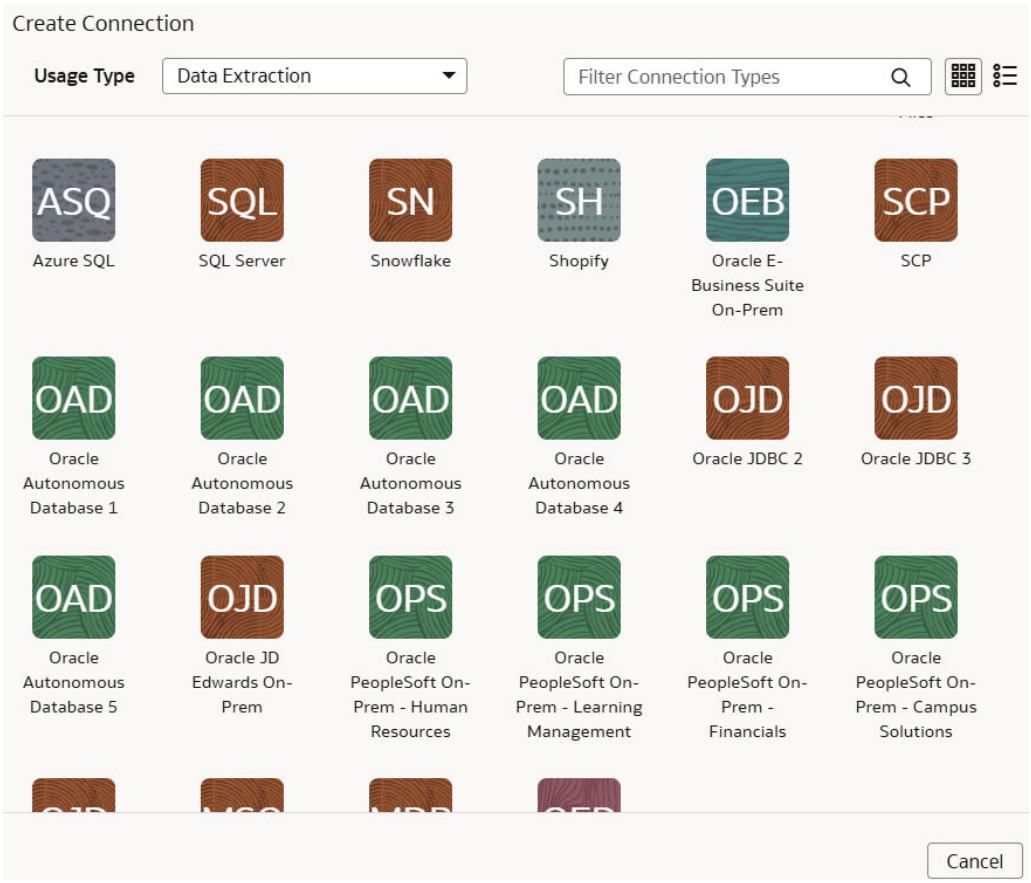

e. In Create Connection for Oracle E-Business Suite On-Prem, select **Remote** as connectivity type.

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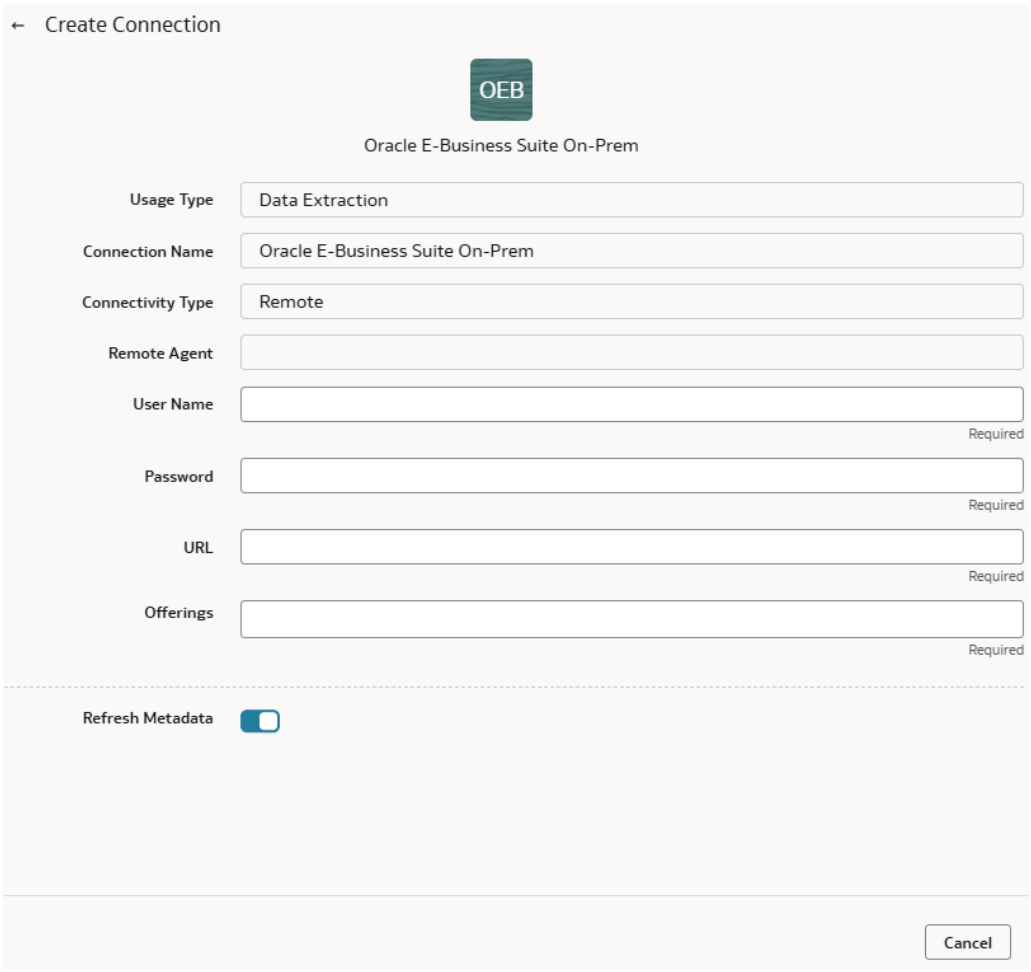

f. In the **Remote Agent** field, select the remote agent connection that you created, for example, **EBS-Remote Agent**. Provide the credentials in **User Name** and **Password**, the E-Business Suite connection using the JDBC format such as `jdbc:oracle:thin:@<HOST>:<PORT>/<DB_NAME/SID_NAME>` in **URL**, and select **Application Object Library** and **General Ledger** offerings mandatorily, and any other E-Business Suite offerings that you want to load data from in **Offerings**.

g. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection. You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for E-Business Suite On-Prem unless you perform a metadata extract.

h. Confirm that you see the Remote Agent and E-Business Suite connections on the Manage Connections page.

i. Test both the connections by selecting the **Test Connection** option in **Actions**. You can check the statuses of all these requests on the Data Configuration Request History page.

j. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

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> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

3. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the E-Business Suite data. Select the applicable E-Business Suite source tables.

   See Augment Your Data.

> **Note**
>
> You can select up to 100 columns only from the source tables.

Load Data from On-premises MySQL Database into Fusion Data Intelligence (Preview)

As a service administrator, you can use an extract service remote agent to connect to your on-premises MySQL database.

After connecting to your on-premises system, the remote agent extracts the data and loads it into the autonomous data warehouse associated with your Oracle Fusion Data Intelligence instance. The remote agent pulls the metadata through the public extract service REST API and pushes data into object storage using the object storage REST API. You can extract and load the on-premises data into Oracle Fusion Data Intelligence only once a day.
Ensure that **MySQL On-Prem** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. Set up the remote agent to load data from your on-premises MySQL database into Oracle Fusion Data Intelligence.

   See Set up the Remote Agent to Load Data into Fusion Data Intelligence (Preview).

2. Check the port number for your on-premises MySQL database and create a service request with server host and port details to enable network connectivity to the on-premises MySQL server.

3. Specify the remote agent and configure the on-premises MySQL database on the Data Configuration page in Oracle Fusion Data Intelligence by following these steps:

   a. On the **Console**, click **Data Configuration** under **Application Administration**.

   b. On the Data Configuration page, click **Manage Connections**.

   c. On the Manage Connections page, click **Create** and then click **Connection**.

   d. In Create Connection, select **Data Extraction** in **Usage Type**, and then select **MySQL On-Prem** as the connection type.

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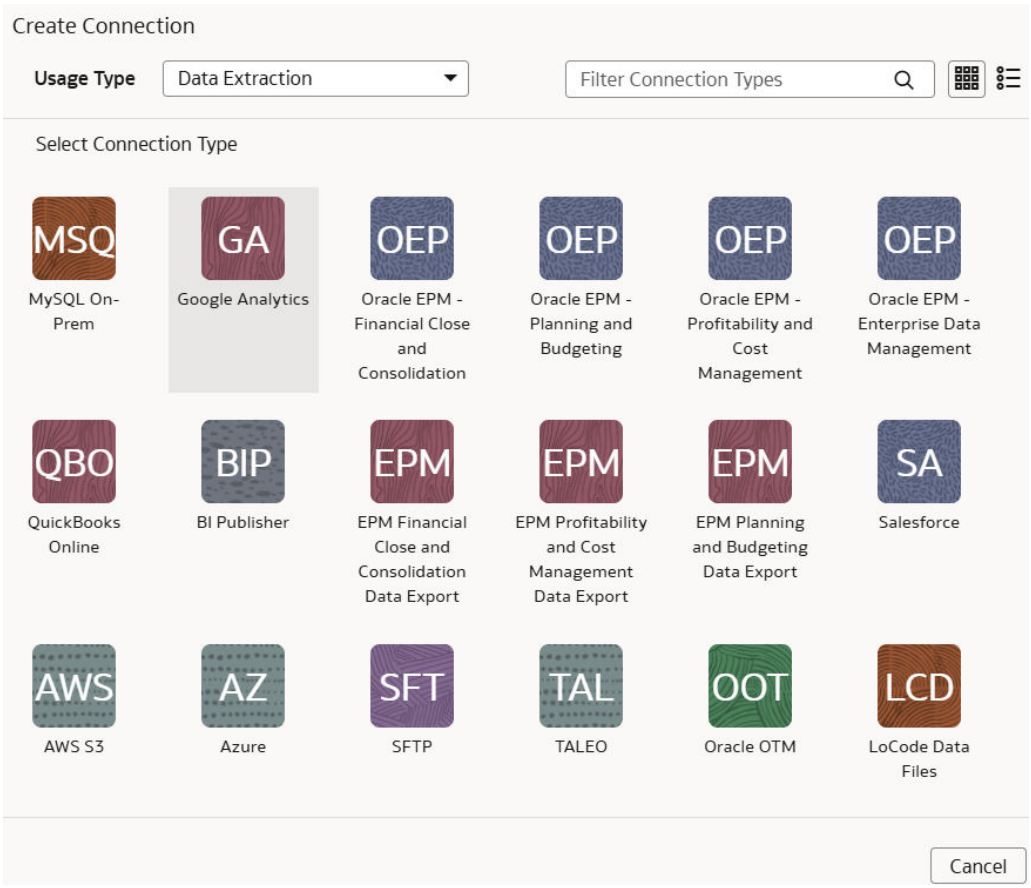

e. In **Connectivity Type**, ensure that **Remote** is automatically selected.

f. In the **Remote Agent** field, select the remote agent connection that you created, for example, **MySQL-Remote Agent** and provide these details:

- **Host Name**: Enter the host name of MySQL server such as `100.111.252.64`
- **Port Number**: Enter the port number where the server is listening such as `3306`
- **Database**: Enter the database name you need to connect to such as `airportdb`
- Credentials to access the database in **User Name** and **Password**
- **Last Update Date Column Pattern**: Enter `"%r%a%o%%"`

> **Note**
>
> If column name matches with pattern provided, then Fusion Data Intelligence marks the column name with `isLastUpdateDate = true` and uses it for the incremental extract. For example, if pattern provided is `“%mo%fie%te%“`, then the column name `modifiedDate` is marked as `isLastUpdateDate = true`.

- **Initial Extract Date Column Pattern**: Enter `"%e%art%new"`

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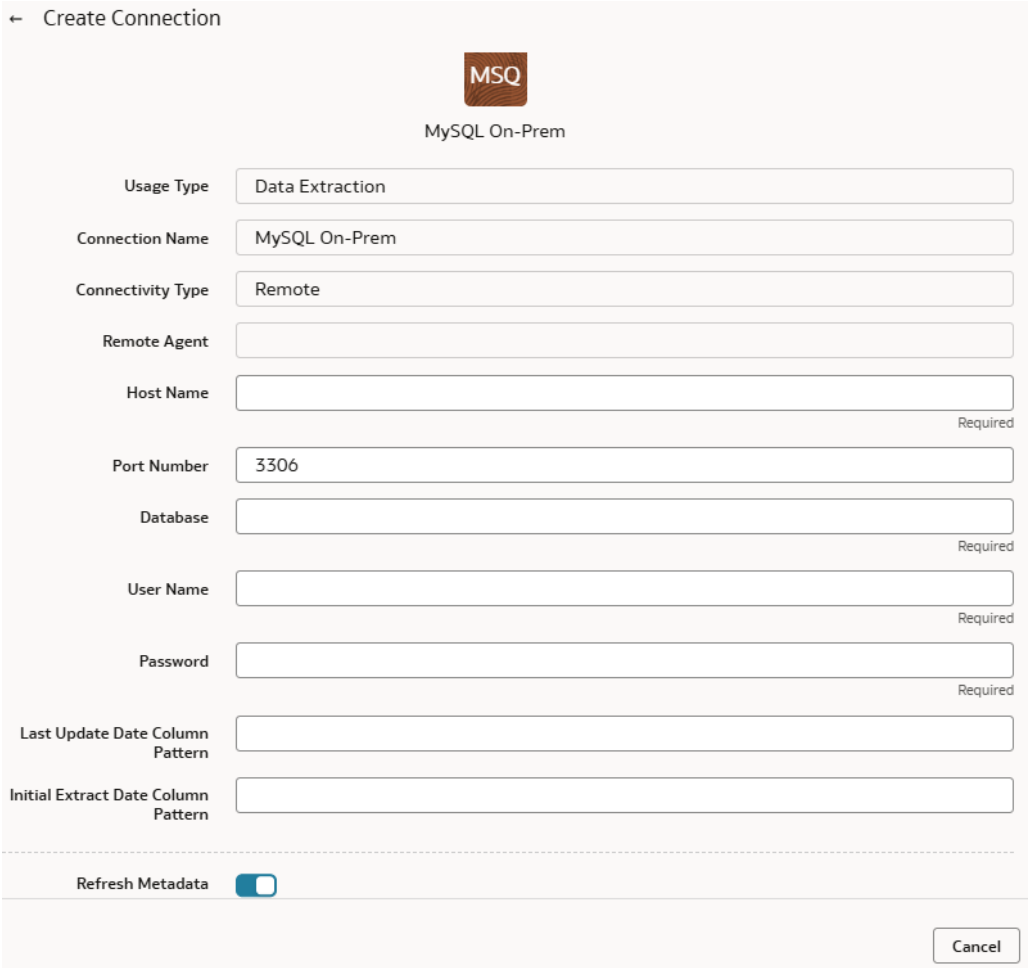
> **Note**
>
> If column name matches with pattern provided, then Fusion Data Intelligence marks the column name with `isCreationDate = true` and uses it for the initial extract date extraction. For example, if pattern provided is: `"%cr%ted%te%"`, then the column name `createdDate` is marked as `isCreationDate = true`.



g. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection. You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for on-premises MySQL database unless you perform a metadata extract.

h. Confirm that you see the Remote Agent and on-premises MySQL database connections on the Manage Connections page.

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i. Test both the connections by selecting the **Test Connection** option in **Actions**. You can check the statuses of all these requests on the Data Configuration Request History page.

j. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

4. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the on-premises MySQL database data. Select the applicable on-premises MySQL database source tables. See Augment Your Data.

Load Data from On-premises PeopleSoft into Fusion Data Intelligence (Preview)

As a service administrator, you can use an extract service remote agent to connect to your on-premises Oracle PeopleSoft system.

After connecting to your on-premises system, the remote agent extracts the data and loads it into the autonomous data warehouse associated with your Oracle Fusion Data Intelligence instance. The remote agent pulls the metadata through the public extract service REST API and pushes data into object storage using the object storage REST API. You can extract and load the on-premises data into Oracle Fusion Data Intelligence only once in 24 hours.
Ensure that **Remote Agent** and depending on the functional module you want to connect to, the applicable feature is enabled on the Enable Features page prior to creating this connection:

- **Oracle PeopleSoft On-Prem - Campus Solutions**
- **Oracle PeopleSoft On-Prem - Financials**
- **Oracle PeopleSoft On-Prem - Human Resources**
- **Oracle PeopleSoft On-Prem - Learning Management**

See Make Preview Features Available.

1. Set up the remote agent to load data from your on-premises Oracle E-Business Suite system into Oracle Fusion Data Intelligence.

   See Set up the Remote Agent to Load Data into Fusion Data Intelligence (Preview).

2. Configure the remote agent and PeopleSoft data source on the Data Configuration page in Oracle Fusion Data Intelligence using these instructions:

   a. On the **Console**, click **Data Configuration** under **Application Administration**.

   b. On the Data Configuration page, click **Manage Connections**.

   c. On the Manage Connections page, click **Create** and then click **Connection**.

   d. In Create Connection, select **Data Extraction** in **Usage Type**, and then select the connection type based on the functional module that you want to connect to. For example, to connect to the "Financials" module, select **Oracle PeopleSoft On-Prem - Financials** as the connection type.

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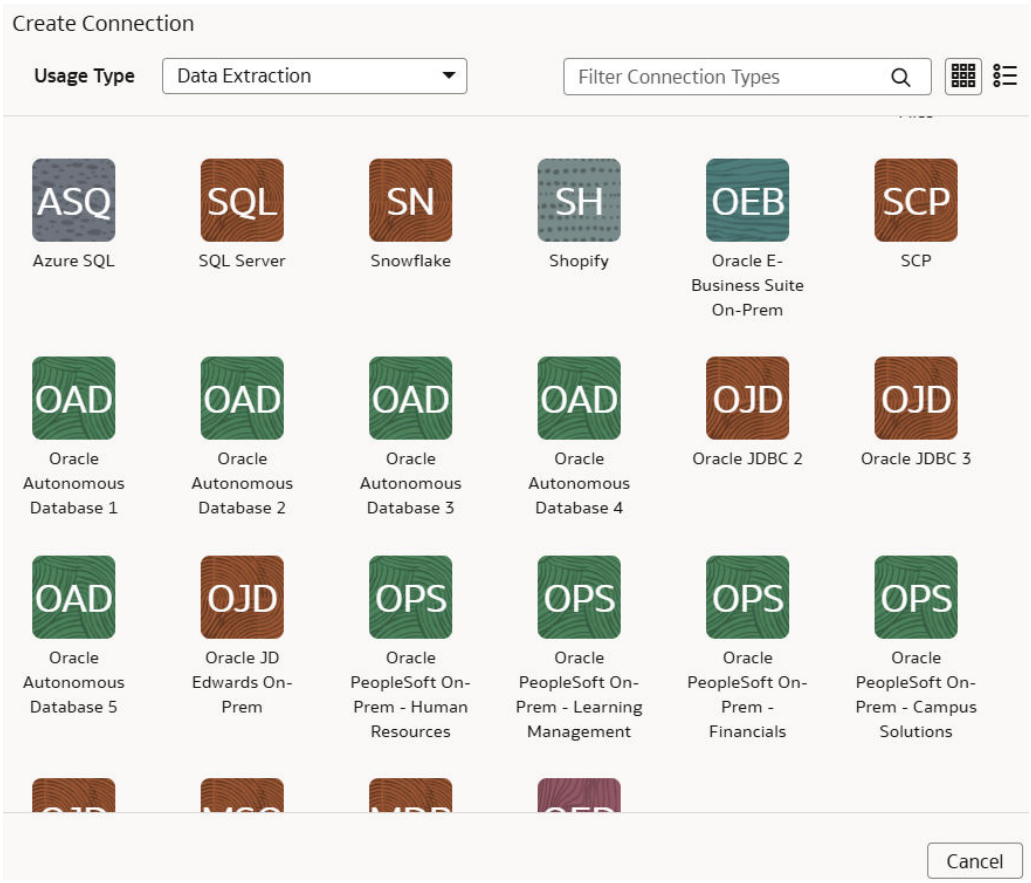

e. In Create Connection for Oracle PeopleSoft On-Prem - Financials dialog, in **Connectivity Type**, verify that **Remote** is selected automatically.

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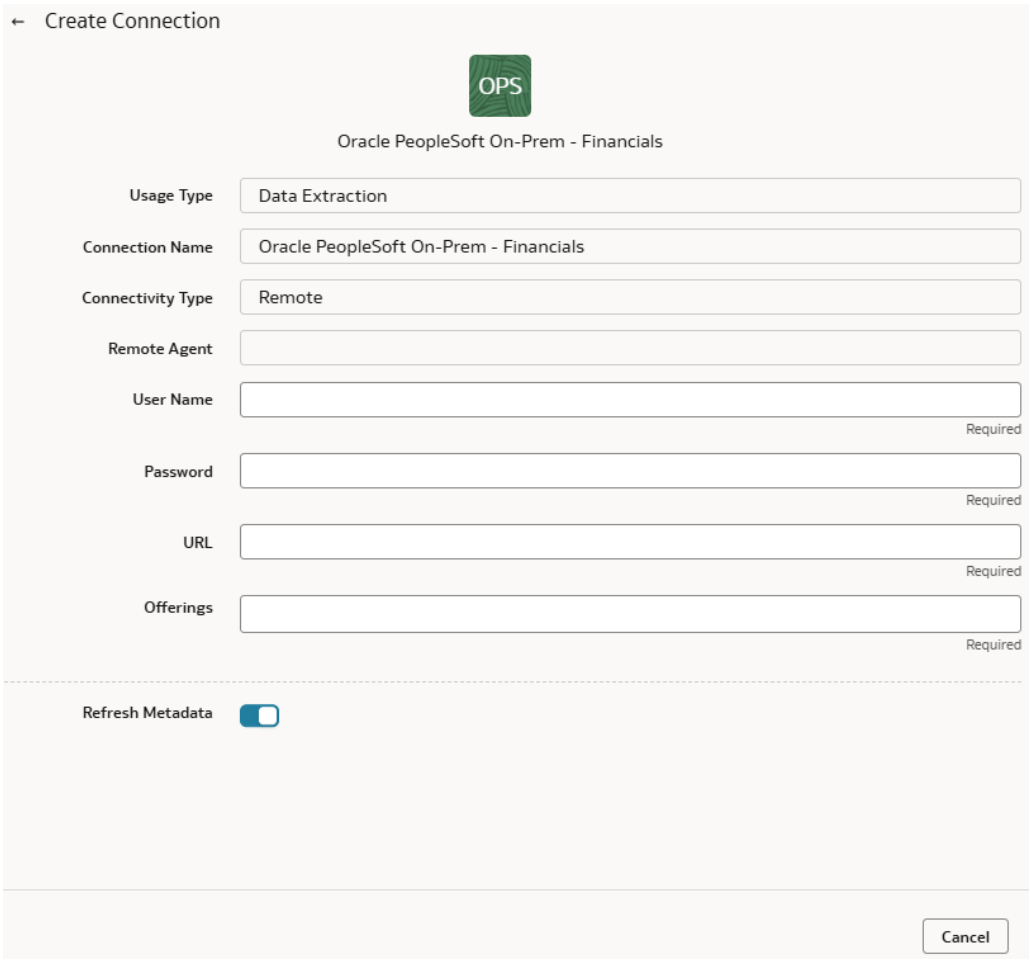

f. In **Remote Agent**, select the remote agent connection that you created earlier, for example, **Remote Agent**.

g. Provide the credentials for your PeopleSoft source in **User Name** and **Password** and the URL of your PeopleSoft source in **URL**.

h. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection. You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for PeopleSoft unless you perform a metadata extract.

i. Click **Save**.

j. On the Manage Connections page, select **Actions** for the PeopleSoft connection and then select **Test Connection**. You can check the statuses of all these requests on the Data Configuration Request History page.

k. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

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> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

3. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the PeopleSoft data. Select the applicable PeopleSoft source tables. See Augment Your Data.

Load Data from On-premises JD Edwards into Fusion Data Intelligence (Preview)

As a service administrator, you can use an extract service remote agent to connect to your on-premises JD Edwards system deployed on an Oracle database and then use the JD Edwards data to create data augmentations.

After connecting to your on-premises system, the remote agent extracts the data and loads it into the autonomous data warehouse associated with your Oracle Fusion Data Intelligence instance. The remote agent pulls the metadata through the public extract service REST API and pushes data into object storage using the object storage REST API. You can extract and load the on-premises data into Oracle Fusion Data Intelligence only once in 24 hours. Ensure that **Remote Agent** and **Oracle JD Edwards On-Prem** are enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. Set up the remote agent to load data from your on-premises Oracle JD Edwards system into Oracle Fusion Data Intelligence.

   See Set up the Remote Agent to Load Data into Fusion Data Intelligence (Preview).

2. Configure the remote agent and JD Edwards data source on the Data Configuration page in Oracle Fusion Data Intelligence using these instructions:

   a. On the **Console**, click **Data Configuration** under **Application Administration**.

   b. On the Data Configuration page, click **Manage Connections**.

   c. On the Manage Connections page, click **Create** and then click **Connection**.

   d. In Create Connection, select **Data Extraction** in **Usage Type**, and then select **Oracle JD Edwards On-Prem** as the connection type.

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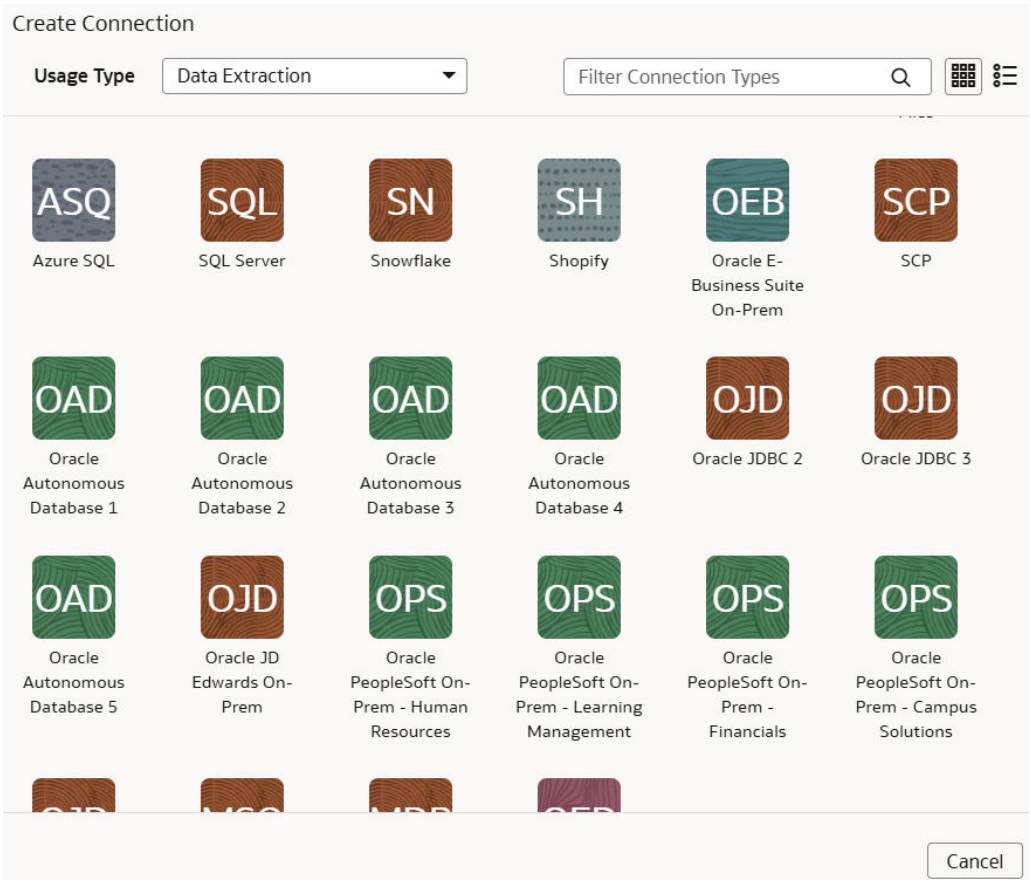

e. In Create Connection for Oracle JD Edwards On-Prem, in **Connectivity Type**, verify that **Remote** is selected automatically.

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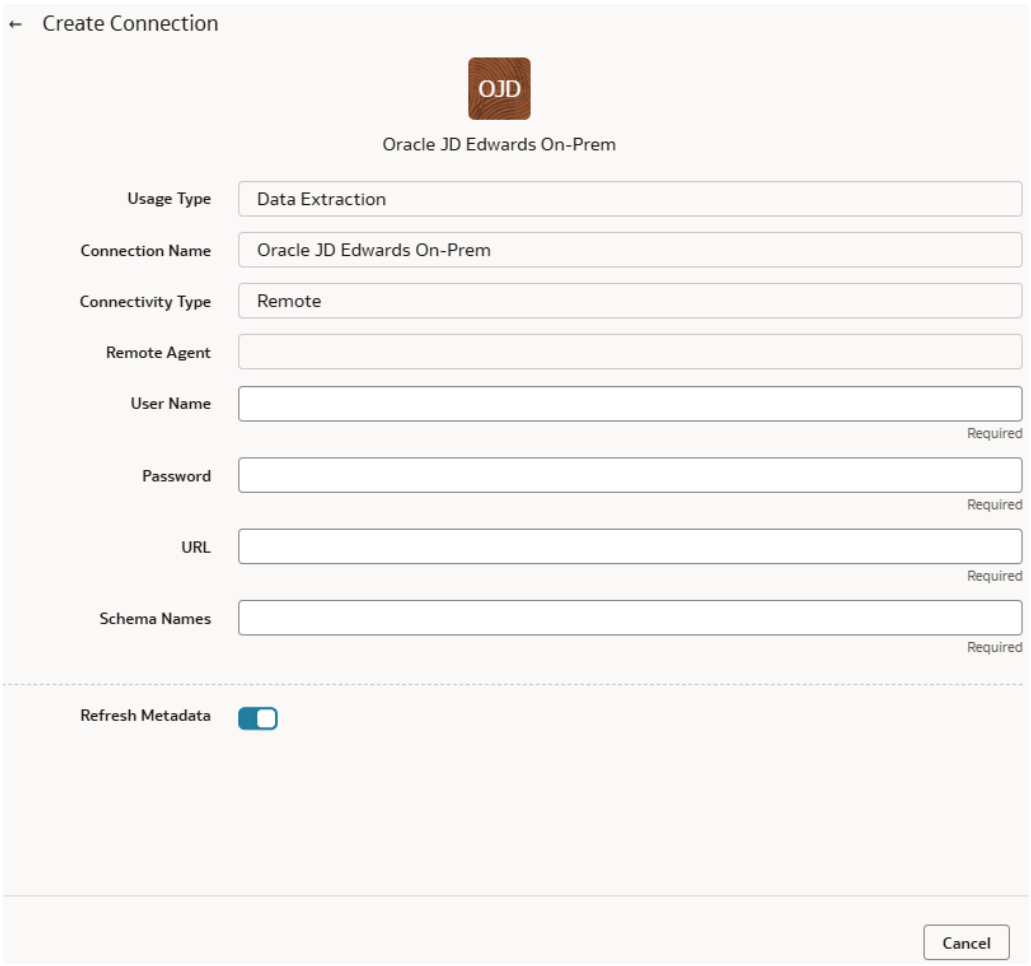

f. In **Remote Agent**, select the remote agent connection that you created earlier, for example, **Remote Agent**.

g. Provide the credentials for your JD Edwards source in **User Name** and **Password** and the URL of your JD Edwards source in **URL**.

h. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection. You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for JD Edwards unless you perform a metadata extract.

i. Confirm that you see the Remote Agent and JD Edwards connections on the Manage Connections page.

j. Test both the connections by selecting the **Test Connection** option in **Actions**. You can check the statuses of all these requests on the Data Configuration Request History page.

k. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

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> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

3. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the JD Edwards data. Select the applicable JD Edwards source tables. See Augment Your Data.

Load Data from SQL Server into Oracle Fusion Data Intelligence (Preview)

As a service administrator, you can use the Oracle Fusion Data Intelligence extract service to acquire data from SQL Server and use it to create data augmentations.

Ensure that **SQL Server** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. Set up the remote agent to load data from your SQL Server into Oracle Fusion Data Intelligence.

   See Set up the Remote Agent to Load Data into Fusion Data Intelligence (Preview).

2. In Oracle Fusion Data Intelligence, create the SQL Server data connection using these instructions:

   a. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.

   b. On the Data Configuration page, click **Manage Connections**.

   c. On the Manage Connections page, click **Create** and then click **Connection**.

   d. In Create Connection, select **Data Extraction** in **Usage Type**, and then select **SQL Server** as the connection type.

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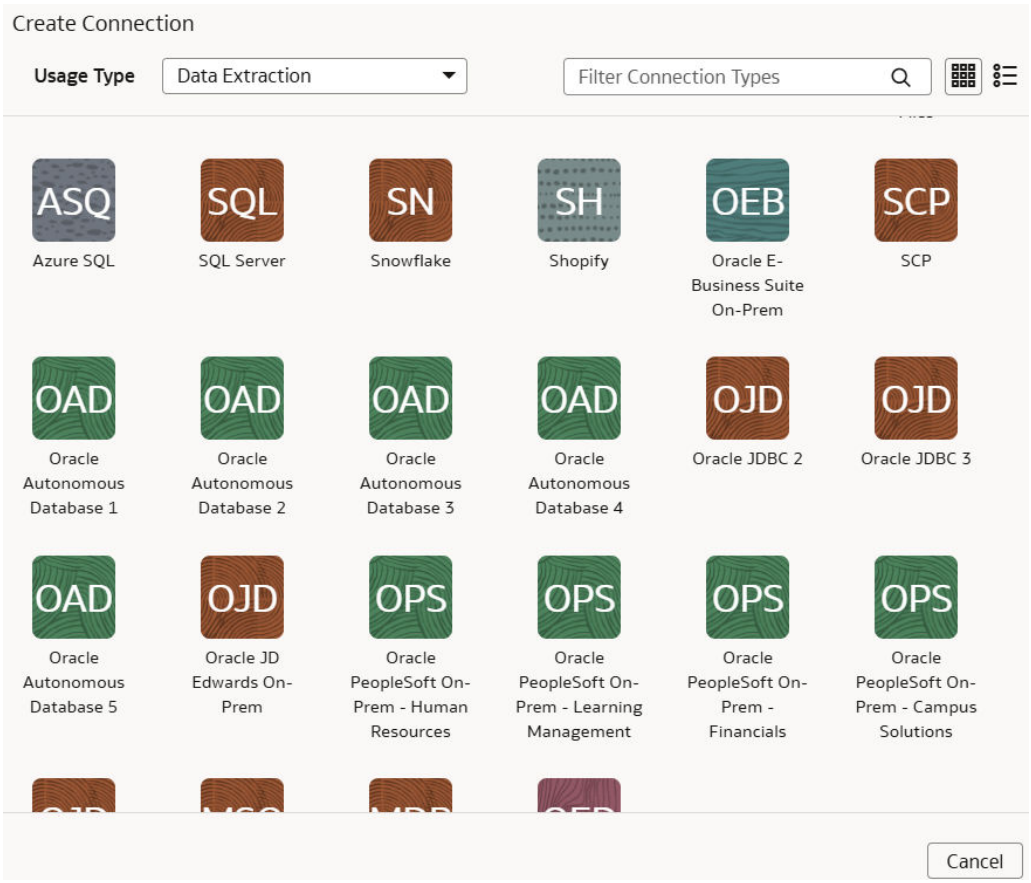

e. In the dialog for the SQL Server connection, enter these details and click **Save**:

- **Connectivity Type**: Verify that **Remote** is selected automatically.
- **Remote Agent**: Select the remote agent that you had set up to load data from your SQL Server.
- **SQL Server Name**: Enter the SQL server name.
- **Port Number**: Enter the port number on which your SQL server is available.
- **Database Name**: Enter the database name in your SQLServer instance.
- **Schema Name**: Enter the name of the schema for the dataset you want to load to run analytics on.
- **User Name** and **Password**: Enter the credentials for your SQL Server instance.
- **Initial Extract Date Column Pattern**: MM/dd/yyyy is the date format in your initial extract column; sample date is 1/23/1998.
- **Last Update Date Column Pattern**: Last update date shows when the last update was done in your SQL Server database.

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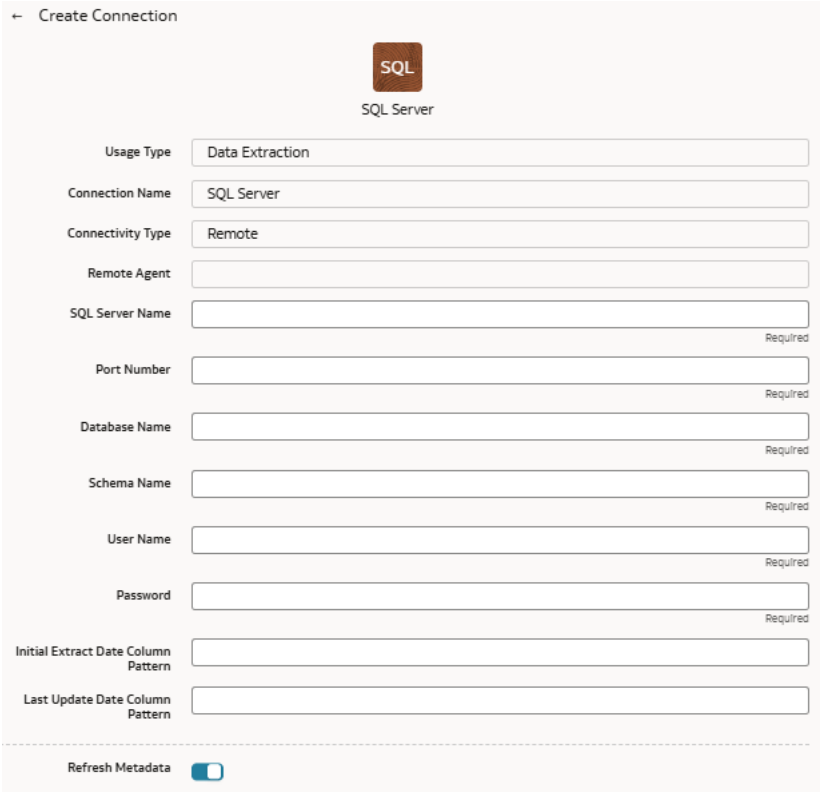

f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for SQL Server unless you perform a metadata extract.

g. Click **Save**.

3. On the Manage Connections page, select **Actions** for the SQL Server connection and then select **Test Connection**.
4. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

5. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the SQL Server data. Select the applicable SQL Server source tables. See Augment Your Data.

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Load Data from Oracle Database Using JDBC into Fusion Data Intelligence (Preview)

As a service administrator, you can use an extract service remote agent to connect to an Oracle database using JDBC and use the data to create data augmentations.

After connecting to an Oracle database using JDBC, the remote agent extracts the data and loads it into the autonomous data warehouse associated with your Oracle Fusion Data Intelligence instance. The remote agent pulls the metadata through the public extract service REST API and pushes data into object storage using the object storage REST API. You can extract and load the data from an Oracle database into Oracle Fusion Data Intelligence only once every 24 hours.
Ensure that **Remote Agent** and **Oracle JDBC** are enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. Set up the remote agent to load data from your SQL Server into Oracle Fusion Data Intelligence.

   See Set up the Remote Agent to Load Data into Fusion Data Intelligence (Preview).

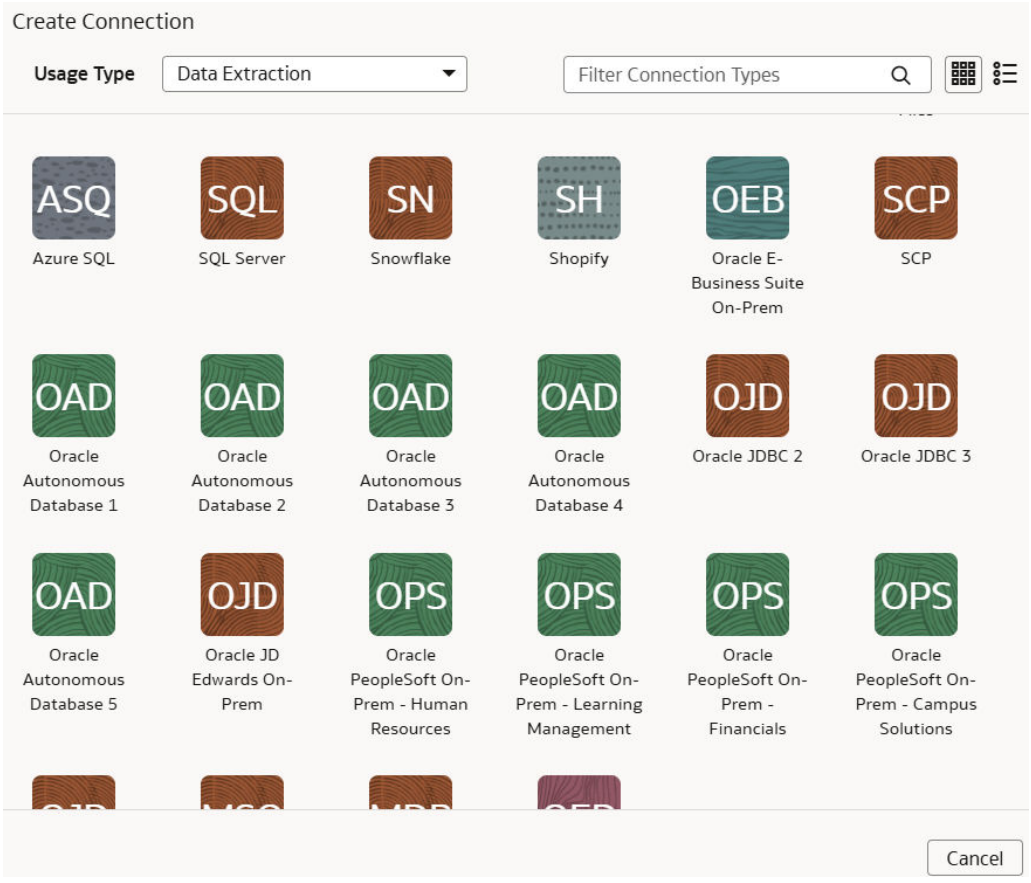
2. Configure the remote agent and Oracle database data source on the Data Configuration page in Oracle Fusion Data Intelligence using these instructions:

   a. On the **Console**, click **Data Configuration** under **Application Administration**.

   b. On the Data Configuration page, click **Manage Connections**.

   c. On the Manage Connections page, click **Create** and then click **Connection**.

   d. In Create Connection, select **Data Extraction** in **Usage Type**, and then select **Oracle JDBC** as the connection type.



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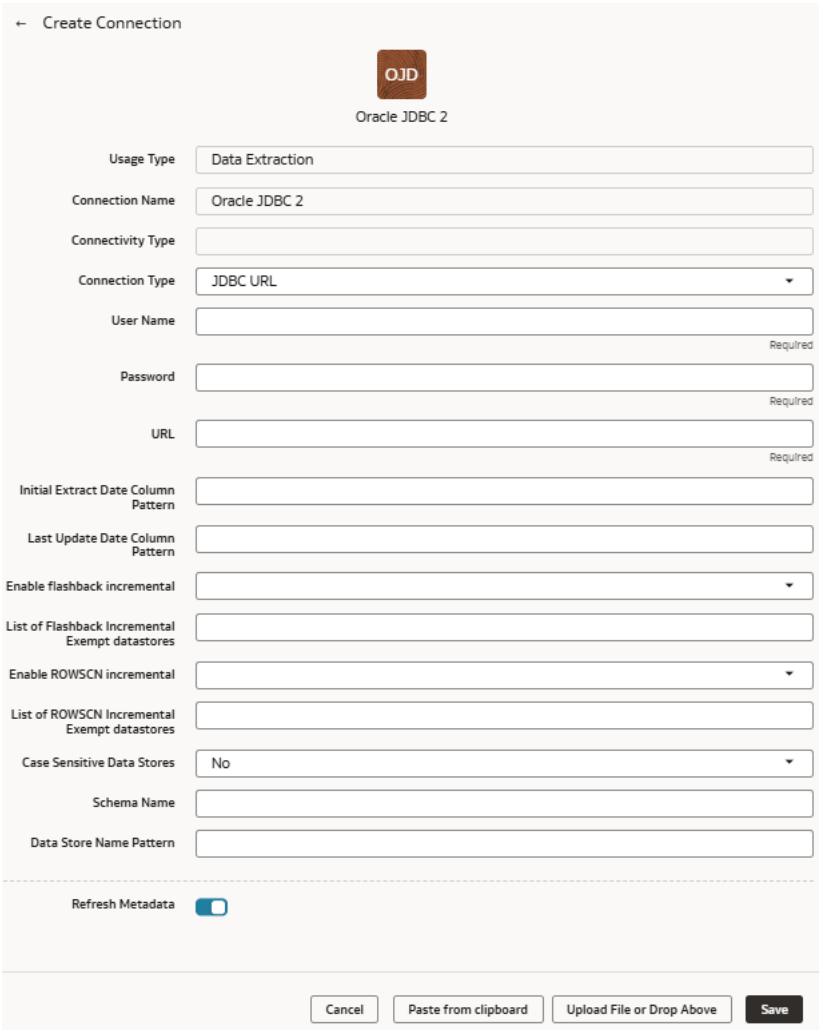
e. In Create Connection for Oracle JDBC, in **Connectivity Type**, verify that **Remote** is selected automatically.

f. In **Remote Agent**, select the remote agent connection that you created earlier, for example, **Remote Agent**.

g. In **Connection Type**, select either **JDBC URL** or **Wallet**.

- If you select **JDBC URL**, provide the credentials for the Oracle database source in **User Name** and **Password** and the URL of the Oracle database source in **URL**.



- If you select **Wallet**, provide the credentials for the Oracle database source in **User Name** and **Password**. Enter the database service name in **Service** and drag drop your wallet zip file in **Wallet**.

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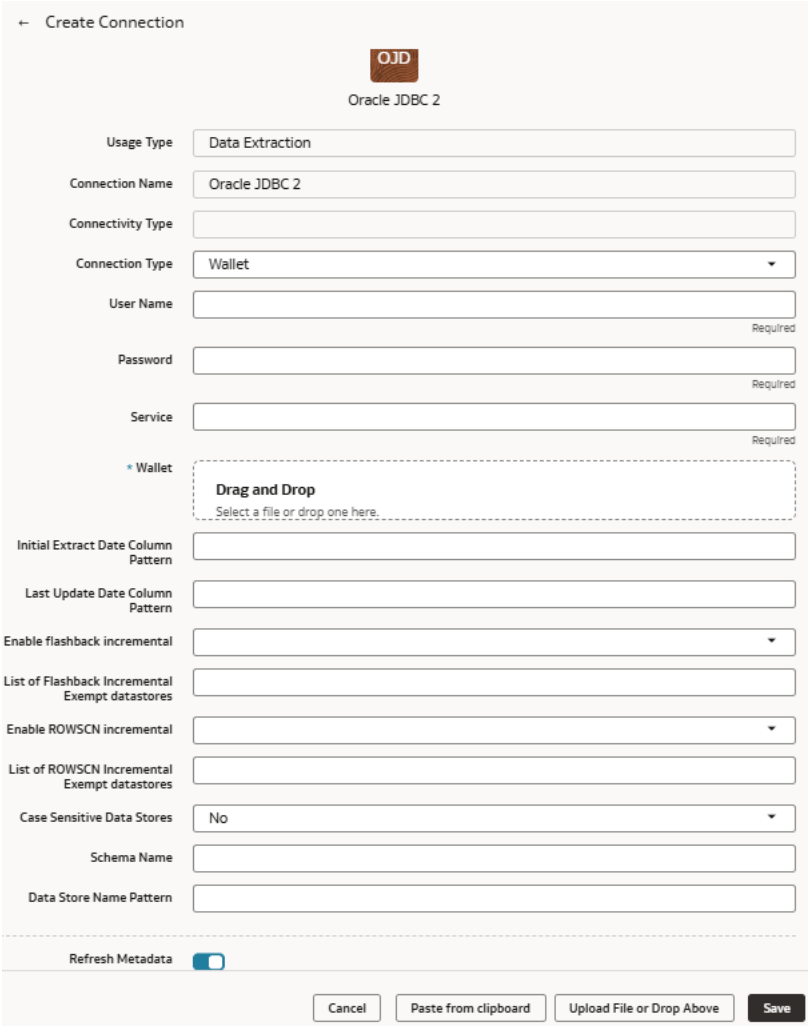

h. In **Initial Extract Date Column Pattern**, provide the initial extract date pattern that matches the pattern in your source.

i. In **Last Update Date Column Pattern**, provide the last update date pattern that matches the pattern in your source.

j. If your source has flashback support, then select **Yes** in **Enable flashback incremental**.

k. In **List of Flashback Incremental Exempt datastores**, provide a comma separated list of datastores that you want to exempt from the flashback incremental queries.

l. If your source has ROWSCN support, then select **Yes** in **Enable ROWSCN incremental**.

m. In **List of ROWSCN Incremental Exempt datastores**, specify a comma-separated list of datastores that you want to exclude from the automatic tracking of row changes based on system change numbers.

n. In **Case Sensitive Data Stores**, select Yes or No to specify whether the datastores have case sensitive data.

o. In **Schema Name**, enter the schema name to extract data from.

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p. In **Data Store Name Pattern**, specify the name pattern of the datastores that you want extracted. If you provide this value, then the connector extracts only datastores matching the pattern.

q. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection. You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for Oracle database unless you perform a metadata extract.

r. Click **Save**.

3. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

4. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Oracle database data. Select the applicable Oracle database source tables. See Augment Your Data.

Connect with Cloud File Storage Sources

Connect with your file storage-based cloud sources to provide the background information for reports.

You can blend the additional data from these data sources with the prebuilt datasets to enhance business analysis. The file-based connectors support only UTF-8 encoding for data files that you upload.

Topics

- About OpenCSV Standards
- About Date and Timestamp Formatting for CSV File-based Extractors
- Load Data from Amazon Simple Storage Service into Oracle Fusion Data Intelligence (Preview)
- Load Data from Azure Storage into Oracle Fusion Data Intelligence (Preview)
- Load Data from Oracle Object Storage Service into Fusion Data Intelligence
- Load Data from an SFTP Source into Fusion Data Intelligence (Preview)

About OpenCSV Standards

The CSV parser in the extract service for file extractors uses Opencsv. The csv files that are processed by extractservice must be compliant with the Opencsv standards.

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See Opencsv File Standards. In addition to the CSV parser, the extract service supports files that are compliant with RFC4180 specification. The RFC 4180 CSV parser enables you to ingest single-line and multi-line data within your .csv files. The RFC 4180 parser supports ingesting data records with up to 99 line breaks. For more information on the RFC 4180 specification, see Common Format and MIME Type for Comma-Separated Values (CSV) Files.

Keep in mind the following:

- While using special characters:
  - For strings without special characters, quotes are optional.
  - For strings with special characters, quotes are mandatory. For example, if a string has a comma, then you must use quotes for the string such as "Abc, 123".
  - Escapes (backslash character) are optional.
  - Backslash characters must always be escaped. For example, if there is a backslash in your data, use the following format: "Double backslash (\\ ) abc".
  - To manage quotes inside a quoted string, use a backslash inside the quotes: "Asd \" asd".
- The Opencsv parser allows you to select one of these available characters as a delimiter:
- Comma (,)
- Semi-colon (;)
- Pipe (|)
- Tab ( )

About Date and Timestamp Formatting for CSV File-based Extractors

Extractors such as Secure FTP (SFTP), Amazon Simple Storage Service (AWS S3), and Oracle Object Storage Service use CSV data files that have date and timestamp fields.

For the CSV file-based extractors, use the format examples to provide the values in the CSV Date Format, and CSV Timestamp Format fields while entering the source connection details.

> **Note**
>
> Ensure that the date and timestamp formats for the data files match the date and timestamp formats in your source; for example, if you've used MM/dd/yyyy and MM/dd/yyyy hh:mm:ss in your source, then you must specify the same formats while creating the applicable data connections.

Examples

Example	Pattern
1/23/1998	MM/dd/yyyy
1/23/1998 12:00:20	MM/dd/yyyy hh:mm:ss
12:08 PM	h:mm a
01-Jan-1998	dd-MMM-yyyy
2001-07-04T12:08:56.235-0700	yyyy-MM-dd'T'HH:mm:ss.SSSZ

The guidelines to define the format are:

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Letter	Meaning
M	Month
d	Day
y	Year
h	Hour (0-12)
H	Hour (0-23)
m	Minute
s	Second
S	Milli Second
a	AM/PM
Z	Timezone

File Layout Modes

You can organize the Oracle Object Storage, SFTP, Microsoft Azure source files in standard folders or flat files.

File Layout Types

Layout	Enable Flat File Layout	Source Layout
Standard folder	false	*Remote Host Extract Files Directory/datastore-name/data-files*
Flat file	true	*Remote Host Extract Files Directory/data-files*

Standard Folder Layout

Use the standard folder layout when each data store has its own folder under the configured base folder.

The base folder of the standard folder layout must match the folder path provided in the connection configuration.

Inside the base folder standard folder layout:

- Create one folder for each data store.
- The data store folder name must match the data store name.
- Data file names must start with the data store name. Avoid special characters, including spaces, in data store names, folder names, and file names.

Example standard folder layout:

```
<Remote Host Extract Files Directory>/
  META_DATASTORES.csv
  ACTIVITY_TYPES/
    ACTIVITY_TYPES.csv
    META_DATASTORES_ACTIVITY_TYPES_COL.csv
```

In the base folder, create the data store metadata file, META_DATASTORES.csv to list the supported data stores.

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Column Name	Required	Description
DATA_STORE_NAME	Yes	Data store name. The Data store name match the data store folder name.
DATA_STORE_LABEL	No	Description or display label for the data store.

Example META_DATASTORES.csv file:

```
DATA_STORE_NAME,DATA_STORE_LABEL

ACTIVITY_TYPES,Activity Types
```

Each data store folder must contain:

- A data file that contains the data to load into Fusion Data Intelligence.
- A column metadata file that describes the columns in the data file.

The data file must start with the data store name. For example, ACTIVITY_TYPES.csv and ACTIVITY_TYPES.xlsx

The column metadata file must use the following naming pattern:

META_DATASTORES_<*DATA_STORE_NAME*>_COL.csv

For example, META_DATASTORES_ACTIVITY_TYPES_COL.csv

Flat File Layout

Use flat file layout when the source system publishes all the files directly in one folder instead of creating one folder per data store.

Place all data files directly in the configured *Remote Host Extract Files Directory*.

Example flat file layout:

```
<Remote Host Extract Files Directory>/
  OFFICE_BLDG.csv.zip
  OFFICE_BLDG_1.csv.zip
  CTLDA.csv.zip
  INVDA.csv.zip
  META_DATASTORES.csv
```

In the flat file layout, the data store names are derived from file names.

For example:

File Name	Datastore Identified
OFFICE_BLDG.csv.zip	OFFICE_BLDG
CTLDA.csv.zip	CTLDA
INVDA.csv.zip	INVDA

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> **Note**
>
> If you have multiple flat files for the same data store, those files can be treated as data files for the same data store by using a configured flat file delimiter. If you need this behavior, create a service request (SR) on My Oracle Support.

For example, If the configured delimiter is _, then the following files are treated as files for data store

```
OFFICE_BLDG.csv.zip
OFFICE_BLDG_1.csv.zip
OFFICE_BLDG_2.csv.zip
```

Flat file layout supports two metadata extraction patterns:

- Metadata extraction with META_DATASTORES.csv
- Metadata extraction without META_DATASTORES.csv

For Metadata extraction with META_DATASTORES.csv in the root directory, META_DATASTORES.csv is used as the data store list.

- The extractor reads data store names from META_DATASTORES.csv.
- Metadata extraction is performed only for data stores listed in META_DATASTORES.csv.
- Files that don't belong to listed data stores are ignored during metadata extraction.
- If a column metadata file exists, it's used first.
- If a column metadata file doesn't exist, column metadata can be inferred from a matching data file.

For example, you have these files, if META_DATASTORES.csv contains only INCLUDED, the extractor processes INCLUDED_1.csv and ignores EXCLUDED_1.csv.

- META_DATASTORES.csv
- INCLUDED.csv
- EXCLUDED.csv

For Metadata extraction without META_DATASTORES.csv, the extractor discovers data stores from eligible data files in the root directory.

For example, you have these files:

- OFFICE_BLDG.csv.zip
- CTLDA.csv.zip
- INVDA.csv.zip

Discovered data stores are:

- OFFICE_BLDG
- CTLDA
- INVDA

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If column metadata files are provided in flat files, place them in the root directory using this naming pattern:

`META_DATASTORES_<DATA_STORE_NAME>_COLS.csv`

When the `META_DATASTORES_<DATA_STORE_NAME>_COLS.csv` file is available, it's preferred for column metadata. When it isn't available, the extractor can infer column metadata from a matching data file.

Load Data from Amazon Simple Storage Service into Oracle Fusion Data Intelligence (Preview)

As a service administrator, you can use the AWS S3 connector to load data from Amazon Simple Storage Service into Oracle Fusion Data Intelligence and use the acquired data to create data augmentations.

Ensure that **AWS S3** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. In Oracle Fusion Data Intelligence, create the AWS S3 data connection using these instructions:
    a. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
    b. On the Data Configuration page, click **Manage Connections**.
    c. On the Manage Connections page, click **Create** and then click **Connection**.
    d. In Create Connection, select **Data Extraction** in **Usage Type**, and then select **AWS S3** as the connection type.

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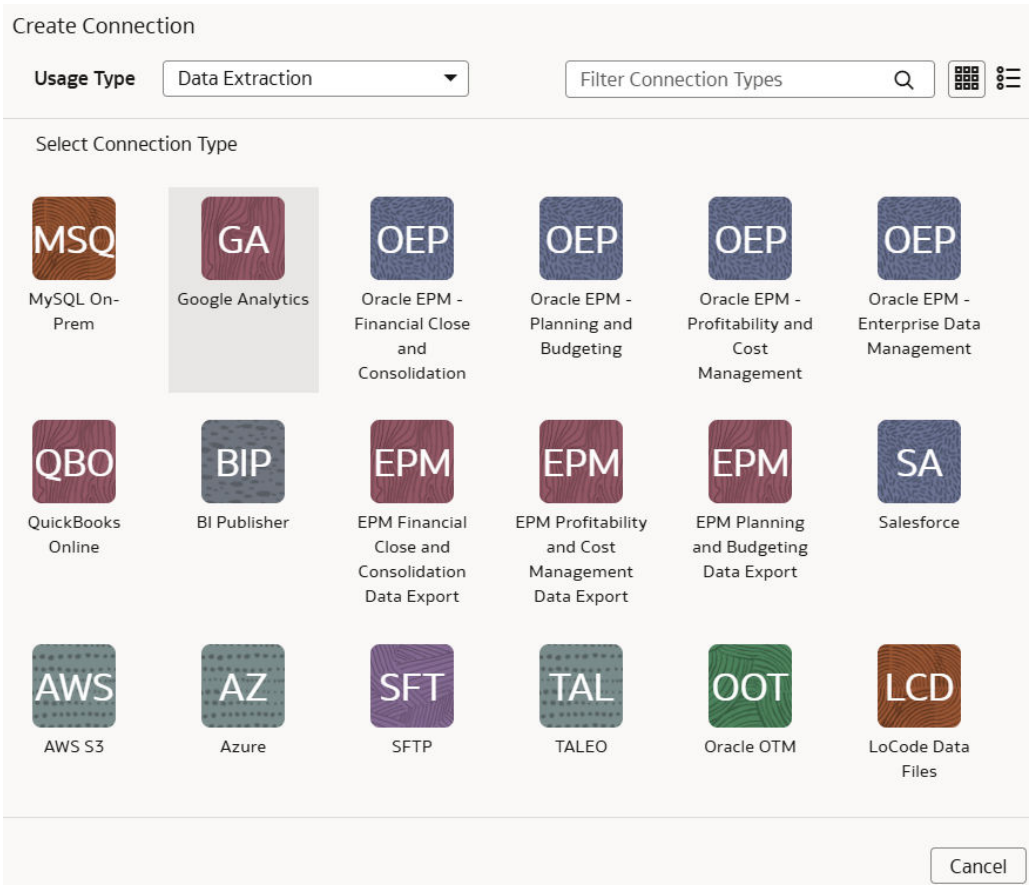

e. In the dialog for the AWS S3 connection, provide applicable details of your Amazon Simple Storage Service.

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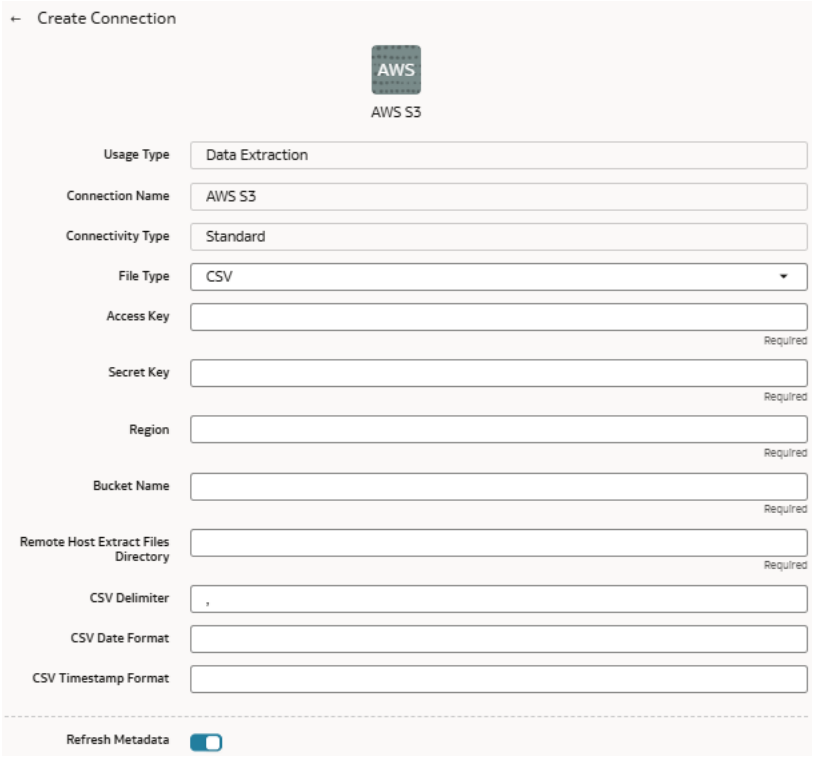


f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

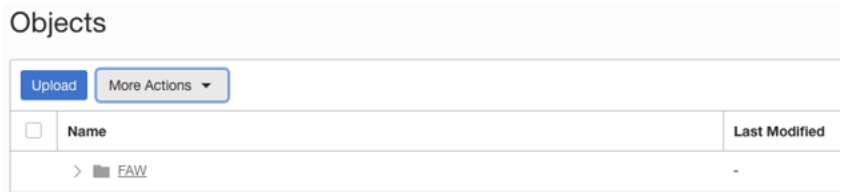
You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for Amazon Simple Storage Service unless you perform a metadata extract.

g. Click **Save**.

2. In Oracle Object Storage Service:

a. Create the folder structure in the Bucket using these guidelines:



- The base folder in the bucket must match with the details provided in the connection.
- Inside the base folder, ensure to place each file in its own folder.
- Ensure that the Prefix of Data_Store_Name (same as Folder name) and Files in the target folder match exactly.

See the "To create a folder or subfolder" section in Using the Console.

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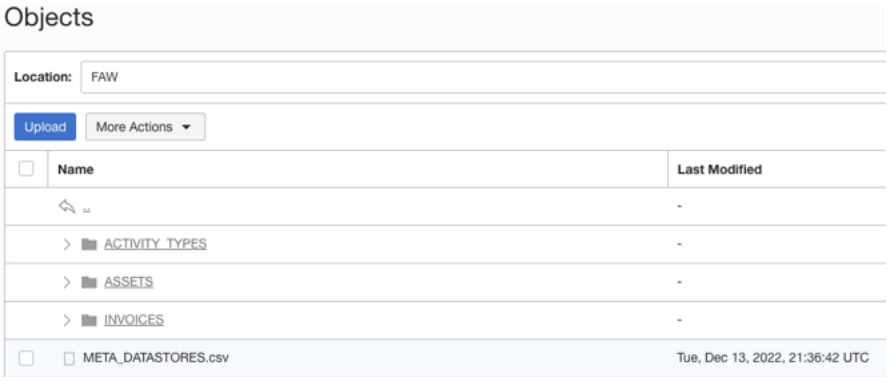
b. Inside the base folder, create the metadata file for the Data Store List. This file lists the supported data stores. Each data store is a folder that has the actual file used in data augmentation, for example, ASSETS. Ensure that the file name and folder name match and there aren't any special characters (including space) in the datastore, folder or file names.



c. Create the metadata file for each data file under the data store folder using these guidelines:

The META_DATASTORES.csv must have these columns:

- DATA_STORE_NAME - A mandatory column to identify the data store name.
- DATA_STORE_LABEL - A non-mandatory column that identifies the description of the data store.

> **Note**
>
> If you add new datastores to an existing source connection, make sure that META_DATASTORES.csv contains the full list of datastores, including the older existing datastores.

Each folder must have:

- A data file that has the actual data that gets loaded into Fusion Data Intelligence. This file must have a prefix with the DATA STORE NAME.
- A metadata file for the list of columns contains all the column information on the data. This file must have a Prefix with META_DATASTORES_<DATA_STORE_NAME>_COL.
  - For the columns in this metadata, ensure the following:
  - If column name is ABC, then metadata can be ABC or "ABC" - the double quotes are ignored.
  - If column name is "ABC", then metadata must be ""ABC"" – the first double quotes are ignored.

Example

In the image, the folder name is ACTIVITY_TYPES. Hence, the data store name is ACTIVITY_TYPES. You can confirm this from the META_DATASTORES.csv file. In this example, the file is named ACTIVITY_TYPES.xlsx or ACTIVITY_TYPES.csv. The

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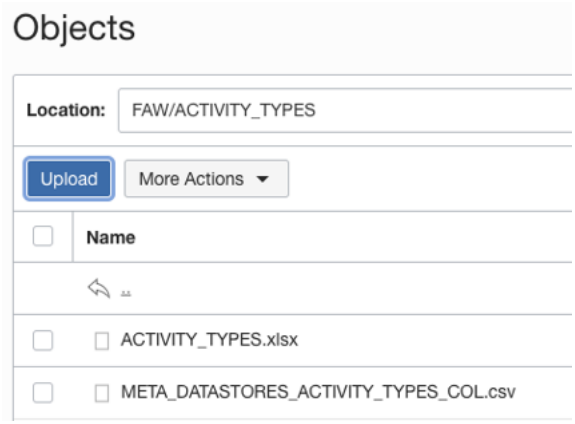
metadata file must be META_DATASTORES_ACTIVITY_TYPES_COL.csv.



The META_DATASTORES_ACTIVITY_TYPES_COL.csv has these columns:

- DATA_STORE_NAME - This is a mandatory column.
- COLUMN_NAME - This is a mandatory column.
- COLUMN_LABEL - This is a non-mandatory column.
- DATA_TYPE – This is a mandatory column.
- WIDTH – This column identifies the string length.
- PRECISION - This column value must be Numeric data type.
- SCALE - This column value must be Numeric data type.
- KEY_SEQUENCE - This is a mandatory column that identifies the Primary Key definition. If you're using the composite primary key, then use column order numbers as values.

3. On the Manage Connections page, select **Actions** for the AWS S3 connection and then select **Test Connection**.
4. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

5. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Amazon Simple Storage Service data. Select the applicable Amazon Simple Storage Service source tables. See Augment Your Data.

Load Data from Oracle Object Storage Service into Fusion Data Intelligence

As a service administrator, you can use the Fusion Data Intelligence extract service to acquire data from Oracle Object Storage Service and use it to create data augmentations.

The recommended approach is to create one augmentation from one source table after acquiring data from Oracle Object Storage Service. After completion of augmentation, Fusion Data Intelligence renames the source table in this case and if you create more than one

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augmentation from the same source, all other augmentations may fail with a message that the source file wasn't found.

1. Store the following details in a text file to use while creating the connection to Oracle Object Storage Service in Fusion Data Intelligence:
    a. In Oracle Object Storage Service, create the Remote Host Extract Files directory as the base folder in which you must place all your data files. Note down the name of this directory. See the "To create a folder or subfolder" section in Using the Console.
    b. Obtain the URL of the Oracle Object Storage Service by signing into the Oracle Cloud Infrastructure Console and navigating to the bucket to get the details of the region, namespace, and bucket name. For example, the URL must be in the `https://objectstorage.<region>.oraclecloud.com/n/<namespace>/b/<name of the bucket>` format. See the "To view bucket details" section in Using the Console.
    c. Obtain a user's OCID by navigating in the Oracle Cloud Infrastructure Console to **Identity & Security**, and then **Users**. On the Users page, search for a user who has access to the bucket used in the connector and copy the **OCID**. Obtain the tenancy ID by clicking your profile icon and then **Tenancy** in the Oracle Cloud Infrastructure Console. Under Tenancy information, copy the **OCID**. See Where to Get the Tenancy's OCID and User's OCID.
    d. Obtain the fingerprint for a user from the Oracle Cloud Infrastructure Console. Navigate to **API Keys** under **Resources** on the user page, and then click **Add API Keys**. In the Add API Keys dialog, ensure that **Generate API Key Pair** is selected. Download the private and public keys using the **Download Private Key** and **Download Public Key** options. You must copy the entire text of the private key along with the comments before and after the actual key. These comments could be as simple as: "----------Begin RSA Private Key --------" and "----------End of RSA Private Key----------". Don't copy only the alphanumeric key without the header and footer comments. In the Add API Keys dialog, select **Choose Public Key File** to upload your file, or **Paste Public Key**, if you prefer to paste it into a text box and then click **Add**. Copy the fingerprint that you see after you upload the public key in the Console. It looks something like this:`12:34:56:78:90:ab:cd:ef:12:34:56:78:90:ab:cd:ef`.
2. In Fusion Data Intelligence, create the Oracle Object Storage connection using these instructions:
    a. In Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
    b. On the Data Configuration page, click **Manage Connections**.
    c. On the Manage Connections page, click **Create** and then click **Connection**.
    d. In Create Connection, select **Data Extraction** in **Usage Type**, and then select **Oracle Object Storage Service** as the connection type.

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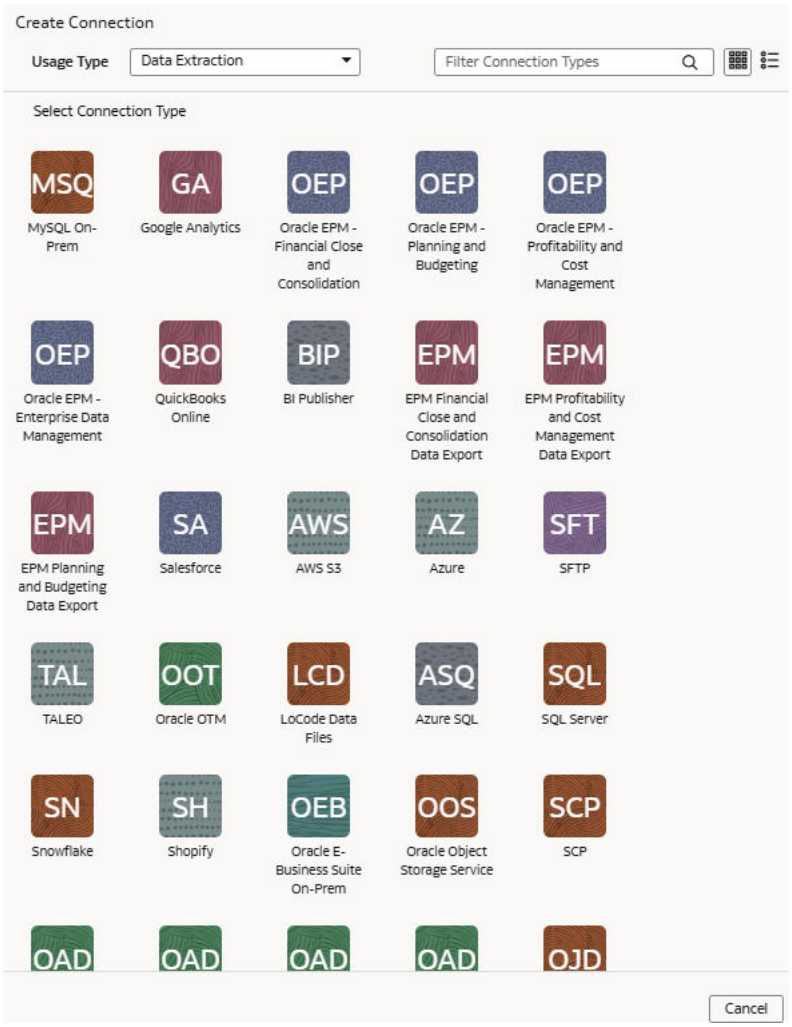

e. In the dialog for the Oracle Object Storage Service connection, enter these details:

- **File Type**: csv
- **Remote Host Extract Files Directory**: Name of the base folder in which you must place all your data files in Oracle Object Storage Service
- **URL**: URL of the Oracle Object Storage Service that you noted down in a text file
- **User ID**: OCID of a user that has access to the applicable bucket in Oracle Object Storage Service
- **Finger Print**: The fingerprint that you saw and copied after you uploaded the public key in the Console. It looks something like this: `12:34:56:78:90:ab:cd:ef:12:34:56:78:90:ab:cd:ef`
- **Tenant ID**: Tenancy in the Oracle Infrastructure Cloud Console that you noted down in the text file
- **Private Key**: Paste the private key contents that you previously downloaded
- **CSV Delimiter**: Delimiter for the data files
- Date format for the data files must match the date format in your Oracle Object Storage Service source; for example, if you've used MM/dd/yyyy (01/23/1998) in your source, then you must specify the same format in **CSV Date Format**. See About Date and Timestamp Formatting for CSV File-based Extractors.

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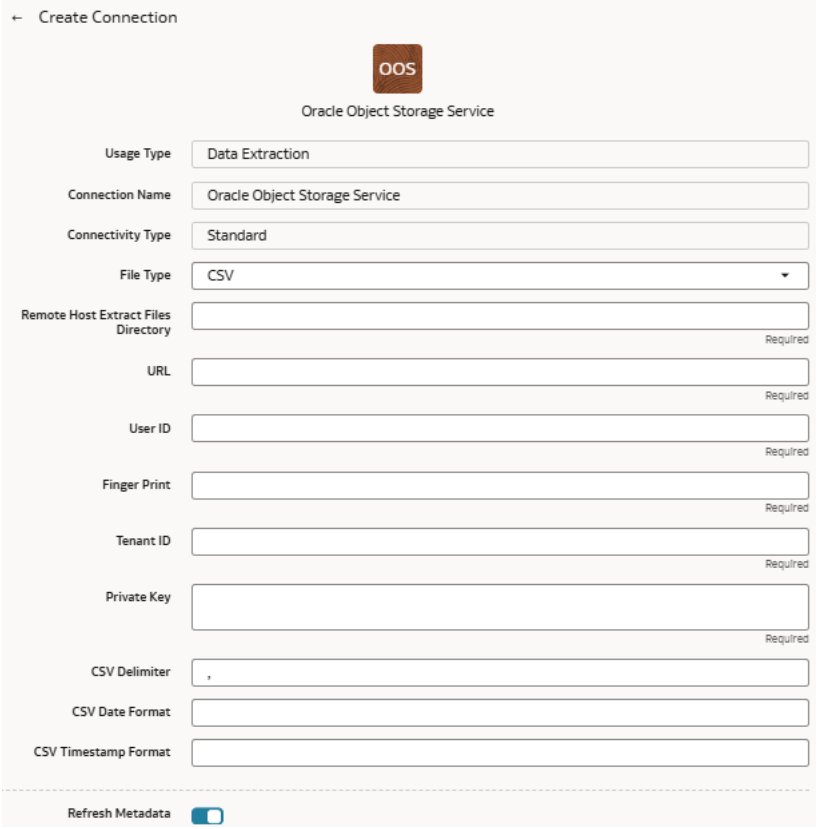
- Timestamp format for the data files must match the timestamp format in your Oracle Object Storage Service source; for example, if you've used MM/dd/yyyy hh:mm:ss (01/23/1998 12:00:20) in your source, then you must specify the same format in **CSV Timestamp Format**



f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

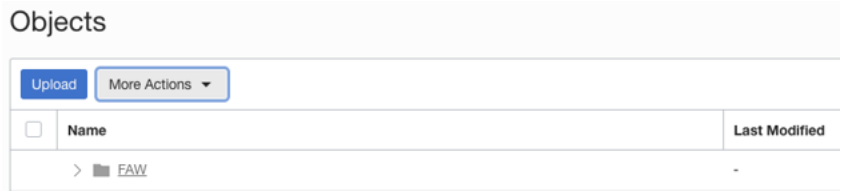
You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for the Oracle Object Storage Service unless you perform a metadata extract.

g. Click **Save**.

3. In Oracle Object Storage Service:

a. Create the folder structure in the Bucket using these guidelines:



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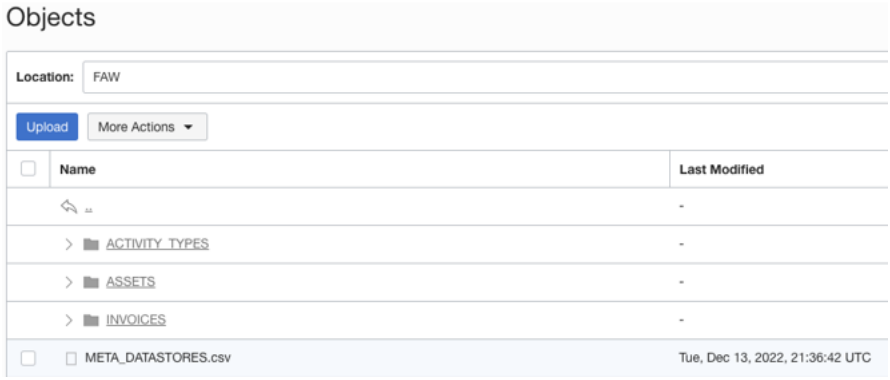
- The base folder in the bucket must match with the details provided in the connection.
- Inside the base folder, ensure to place each file in its own folder.
- Ensure that the Prefix of Data_Store_Name (same as Folder name) and Files in the target folder match exactly.

See the "To create a folder or subfolder" section in Using the Console.

b. Inside the base folder, create the metadata file for the Data Store List. This file lists the supported data stores. Each data store is a folder that has the actual file used in data augmentation, for example, ASSETS. Ensure that the file name and folder name match and there aren't any special characters (including space) in the datastore, folder or file names.



c. Create the metadata file for each data file under the data store folder using these guidelines:

The META_DATASTORES.csv must have these columns:

- DATA_STORE_NAME - A mandatory column to identify the data store name.
- DATA_STORE_LABEL - A non-mandatory column that identifies the description of the data store.

> **Note**
>
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  - For the columns in this metadata, ensure the following:
  - If column name is ABC, then metadata can be ABC or “ABC” - the double quotes are ignored.
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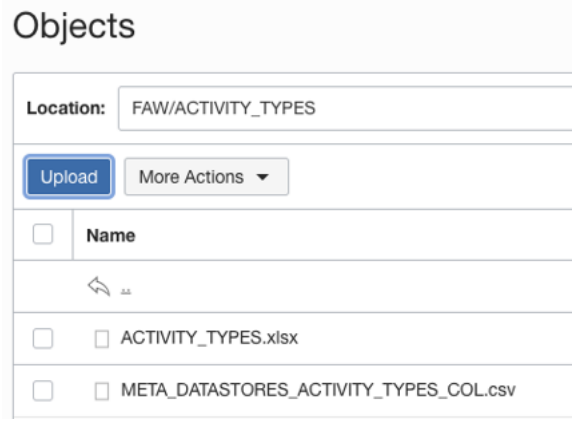
Example

In the image, the folder name is ACTIVITY_TYPES. Hence, the data store name is ACTIVITY_TYPES. You can confirm this from the META_DATASTORES.csv file. In this example, the file is named ACTIVITY_TYPES.xlsx or ACTIVITY_TYPES.csv. The metadata file must be META_DATASTORES_ACTIVITY_TYPES_COL.csv.



The META_DATASTORES_ACTIVITY_TYPES_COL.csv has these columns:

- DATA_STORE_NAME - This is a mandatory column.
- COLUMN_NAME - This is a mandatory column.
- COLUMN_LABEL - This is a non-mandatory column.
- DATA_TYPE – This is a mandatory column.
- WIDTH – This column identifies the string length.
- PRECISION - This column value must be Numeric data type.
- SCALE - This column value must be Numeric data type.
- KEY_SEQUENCE - This is a mandatory column that identifies the Primary Key definition. If you're using the composite primary key, then use column order numbers as values.

4. In Fusion Data Intelligence, on the Manage Connections page, select **Actions** for the Oracle Object Storage Service connection and then select **Test Connection**.
5. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

6. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the data from the Oracle Object Storage Service. Select the applicable source tables from the Oracle Object Storage Service data. See Augment Your Data.

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Load Data from an SFTP Source into Fusion Data Intelligence (Preview)

As a service administrator, you can use the Fusion Data Intelligence extract service to acquire data from a secure FTP source (SFTP) and use it to create data augmentations.

Ensure that **SFTP** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. Check the port number for your secure FTP database and create a service request to get the port opened.

   > **Note**
   >
   > You must provide the IP address of the SFTP server, which should be a public IP and can't be host name and a fully qualified domain name (FQDN) or a class A private IP.

2. In Fusion Data Intelligence, create the SFTP data connection using these instructions:
   a. In Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type**, and then select **SFTP** as the connection type.
   e. In the dialog for the SFTP connection, provide applicable values in **Remote Host**, **User Name**, **Private Key**, **Remote Host Extract Files Directory**, **File Type**, **CSV Delimiter**, **CSV Date Format**, and **CSV Timestamp Format**. Ensure that the value in **Remote Host Extract Files Directory** begins with a leading "/" to avoid issues. In **Lock Metadata**, specify whether you want to turn off the metadata extracts after first refresh if metadata isn't going to change. This option is useful if the flag to derive metadata from data files using the metadata utility is turned on in your source. In **Remote Host**, ensure that you specify an SFTP Server that supports FIPS Compliant key exchange algorithms.

      Ensure the following:

      - The table name and file name in your SFTP source needs to be the same.
      - The private key you provide is in the valid OpenSSH format and the minimum number of bits in the key should be 2048.
      - Date format for the data files must match the date format in your SFTP source; for example, if you've used MM/dd/yyyy (01/23/1998) in your source, then you must specify the same format in **CSV Date Format**. See About Date and Timestamp Formatting for CSV File-based Extractors.
      - Timestamp format for the data files must match the timestamp format in your SFTP source; for example, if you've used MM/dd/yyyy hh:mm:ss (01/23/1998 12:00:20) in your source, then you must specify the same format in **CSV Timestamp Format**.

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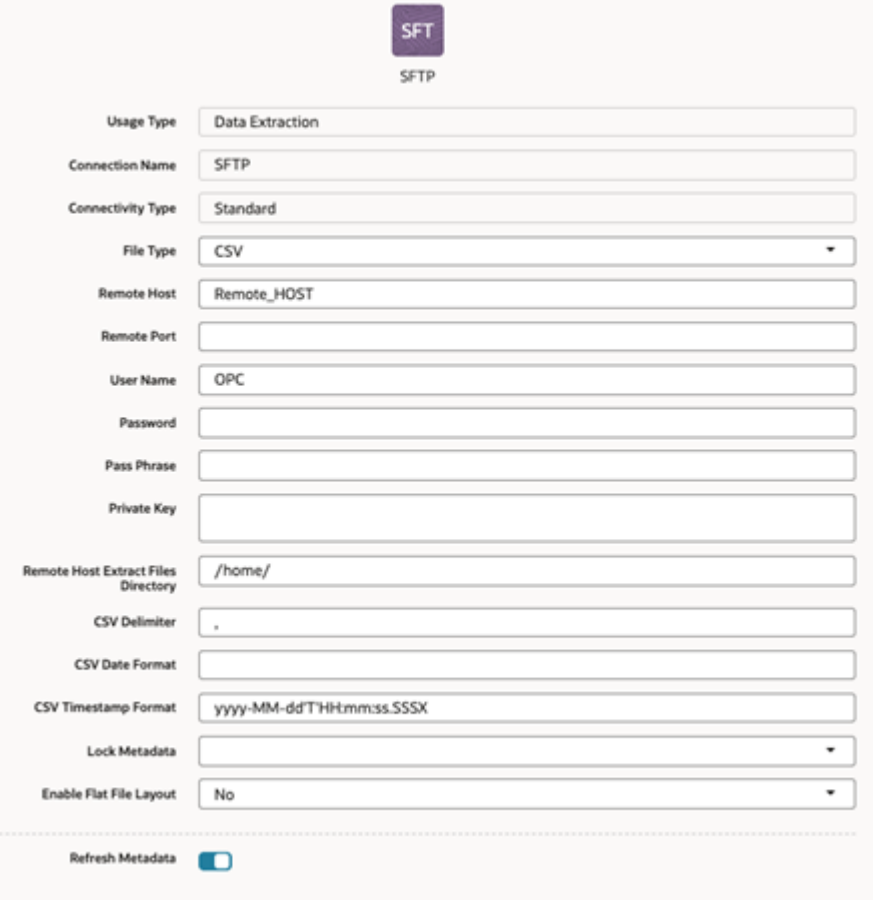

f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for SFTP unless you perform a metadata extract.

g. Click **Save**.

3. Specify the file layout mode in your SFTP source.

   You can organize the source files in standard folders or flat files.

Layout	Enable Flat File Layout	Source Layout
Standard folder	false	*Remote Host Extract Files Directory/datastore-name/data-files*
Flat file	true	*Remote Host Extract Files Directory/data-files*

   In the **Enable Flat File Layout** drop-down:

   - For standard folder layout, select **false** when each data store has its own folder.

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- For flat file layout, select **true** when all data store files are placed directly in the configured root directory.

4. On the Manage Connections page, select **Actions** for the SFTP connection and then select **Test Connection**.
5. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

6. After the connections are successfully established, navigate to the Data Augmentation tile on the Data Configuration page, select the connection in **Data Source**, and create a data augmentation using the SFTP data. Select the applicable secure FTP source tables. See Augment Your Data.

Load Data from Azure Storage into Oracle Fusion Data Intelligence (Preview)

As a service administrator, you can use the Oracle Fusion Data Intelligence extract service to acquire data from Azure Storage and use it to create data augmentations.

Ensure that **Azure Storage** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. In Oracle Fusion Data Intelligence, create the Azure Storage data connection using these instructions:
   a. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type**, and then select **Azure Storage** as the connection type.
   e. In the dialog for the Azure Storage connection, enter these Azure Storage instance details, and click **Save**:
      - **File Type**: Select CSV.
      - **Azure Blob Connection String**: Enter your storage account's connection string.
      - **Container**: Specify the Azure container.
      - **Remote Host Extract Files Directory**: Name of the base folder in which you must place all your data files in Azure Storage.
      - **CSV Delimiter**: Delimiter for the data files.
      - **CSV Date Format**: Date format for the data files must match the date format in your Azure Storage source; for example, if you've used MM/dd/yyyy (01/23/1998) in your source, then you must specify the same format. See About Date and Timestamp Formatting for CSV File-based Extractors

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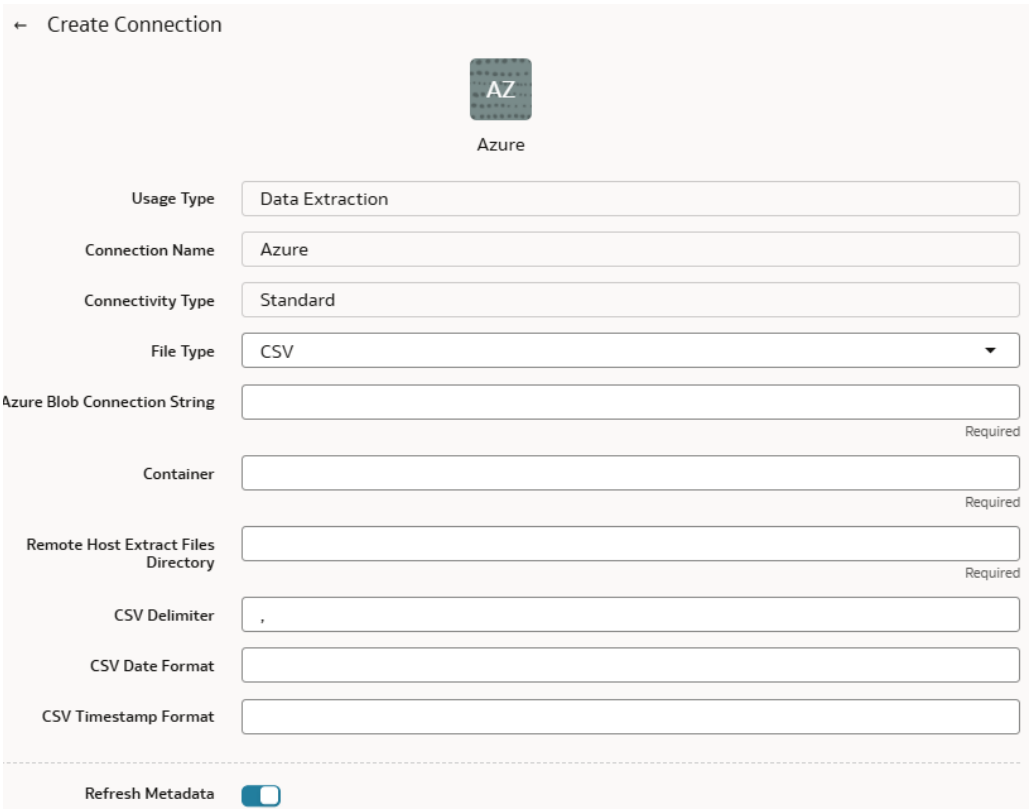


f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

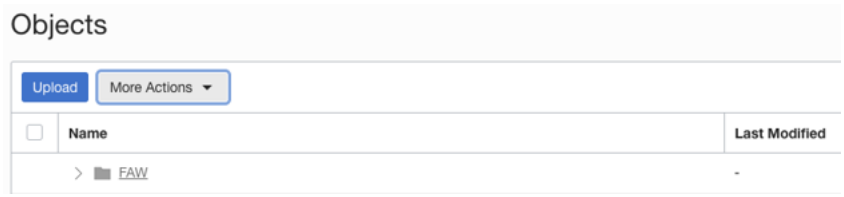
   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for Azure Storage unless you perform a metadata extract.

g. Click **Save**.

2. In Oracle Object Storage Service:

   a. Create the folder structure in the Bucket using these guidelines:



   - The base folder in the bucket must match with the details provided in the connection.
   - Inside the base folder, ensure to place each file in its own folder.
   - Ensure that the Prefix of Data_Store_Name (same as Folder name) and Files in the target folder match exactly.

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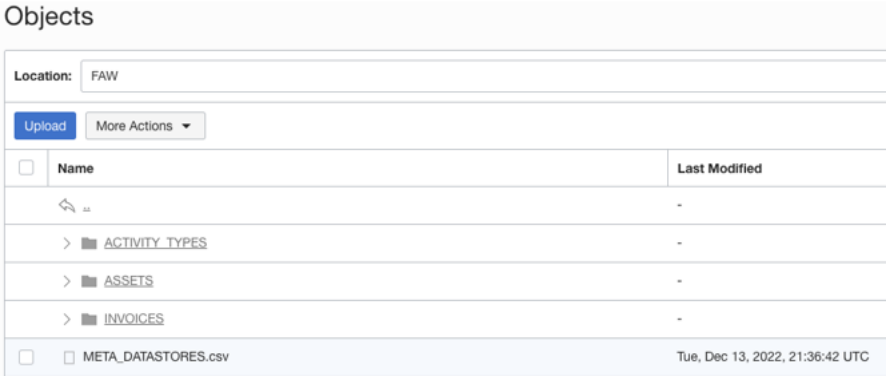
See the "To create a folder or subfolder" section in Using the Console.

b. Inside the base folder, create the metadata file for the Data Store List. This file lists the supported data stores. Each data store is a folder that has the actual file used in data augmentation, for example, ASSETS. Ensure that the file name and folder name match and there aren't any special characters (including space) in the datastore, folder or file names.



c. Create the metadata file for each data file under the data store folder using these guidelines:

The META_DATASTORES.csv must have these columns:

- DATA_STORE_NAME - A mandatory column to identify the data store name.
- DATA_STORE_LABEL - A non-mandatory column that identifies the description of the data store.

> **Note**
>
> If you add new datastores to an existing source connection, make sure that META_DATASTORES.csv contains the full list of datastores, including the older existing datastores.

Each folder must have:

- A data file that has the actual data that gets loaded into Fusion Data Intelligence. This file must have a prefix with the DATA STORE NAME.
- A metadata file for the list of columns contains all the column information on the data. This file must have a Prefix with META_DATASTORES_<DATA_STORE_NAME>_COL.
  - For the columns in this metadata, ensure the following:
  - If column name is ABC, then metadata can be ABC or “ABC” - the double quotes are ignored.
  - If column name is “ABC”, then metadata must be ““ABC”” – the first double quotes are ignored.

Example

In the image, the folder name is ACTIVITY_TYPES. Hence, the data store name is ACTIVITY_TYPES. You can confirm this from the META_DATASTORES.csv file. In this example, the file is named ACTIVITY_TYPES.xlsx or ACTIVITY_TYPES.csv. The

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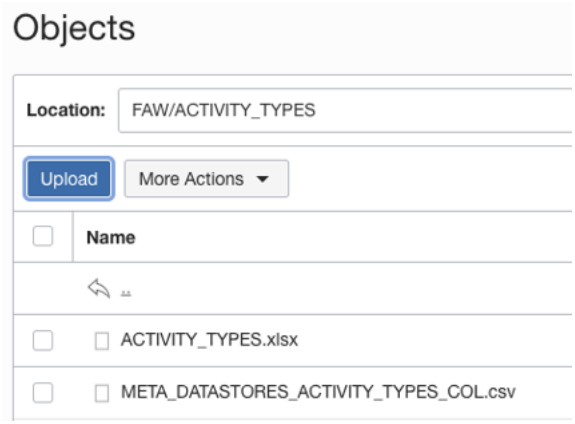
metadata file must be META_DATASTORES_ACTIVITY_TYPES_COL.csv.



The META_DATASTORES_ACTIVITY_TYPES_COL.csv has these columns:

- DATA_STORE_NAME - This is a mandatory column.
- COLUMN_NAME - This is a mandatory column.
- COLUMN_LABEL - This is a non-mandatory column.
- DATA_TYPE – This is a mandatory column.
- WIDTH – This column identifies the string length.
- PRECISION - This column value must be Numeric data type.
- SCALE - This column value must be Numeric data type.
- KEY_SEQUENCE - This is a mandatory column that identifies the Primary Key definition. If you're using the composite primary key, then use column order numbers as values.

3. On the Manage Connections page, select **Actions** for the Azure Storage connection and then select **Test Connection**.
4. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

5. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Azure Storage data. Select the applicable Azure Storage source tables. See Augment Your Data.

Connect With Cloud Sources

Connect with your cloud applications to provide the background information for reports.

You can blend the additional data from these data sources with the prebuilt datasets to enhance business analysis. To know about the date and timestamp formatting for the CSV file-based extractors, see About Date and Timestamp Formatting for CSV File-based Extractors.

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Topics

- Load Data from Azure SQL into Oracle Fusion Data Intelligence (Preview)
- Load Data from Oracle Autonomous Database into Oracle Fusion Data Intelligence (Preview)
- Load Data from Oracle Enterprise Performance Management into Fusion Data Intelligence (Preview)
- Load Data from EPM Export Data Instance into Fusion Data Intelligence (Preview)
- Load Data from Google Analytics into Oracle Fusion Data Intelligence
- Connect with Your Oracle Eloqua Data Source (Preview)
- Load Data from Salesforce into Fusion Data Intelligence
- Load Data from Oracle Analytics Publisher into Fusion Data Intelligence
- Load Data from Shopify into Fusion Data Intelligence
- Load Data from Snowflake into Oracle Fusion Data Intelligence (Preview)
- Load Data from Taleo into Fusion Data Intelligence (Preview)
- Load Data from Oracle Transportation Management Cloud Service into Oracle Fusion Data Intelligence (Preview)
- Load Data from Fusion Supply Chain Planning into Oracle Fusion Data Intelligence (Preview)
- Load Data from QuickBooks Online into Oracle Fusion Data Intelligence (Preview)
- Load Data from MongoDB into Fusion Data Intelligence (Preview)
- Load Data from MySQL Cloud Database into Fusion Data Intelligence (Preview)
- Load Data from Oracle Enterprise Data Management Cloud into Fusion Data Intelligence (Preview)

Load Data from Azure SQL into Oracle Fusion Data Intelligence (Preview)

As a service administrator, you can use the Oracle Fusion Data Intelligence extract service to acquire data from Azure SQL and use it to create data augmentations.

Ensure that **Azure SQL** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. In Oracle Fusion Data Intelligence, create the Azure SQL data connection using these instructions:
    a. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
    b. On the Data Configuration page, click **Manage Connections**.
    c. On the Manage Connections page, click **Create** and then click **Connection**.
    d. In Create Connection, select **Data Extraction** in **Usage Type** and then select **Azure SQL** as the connection type.

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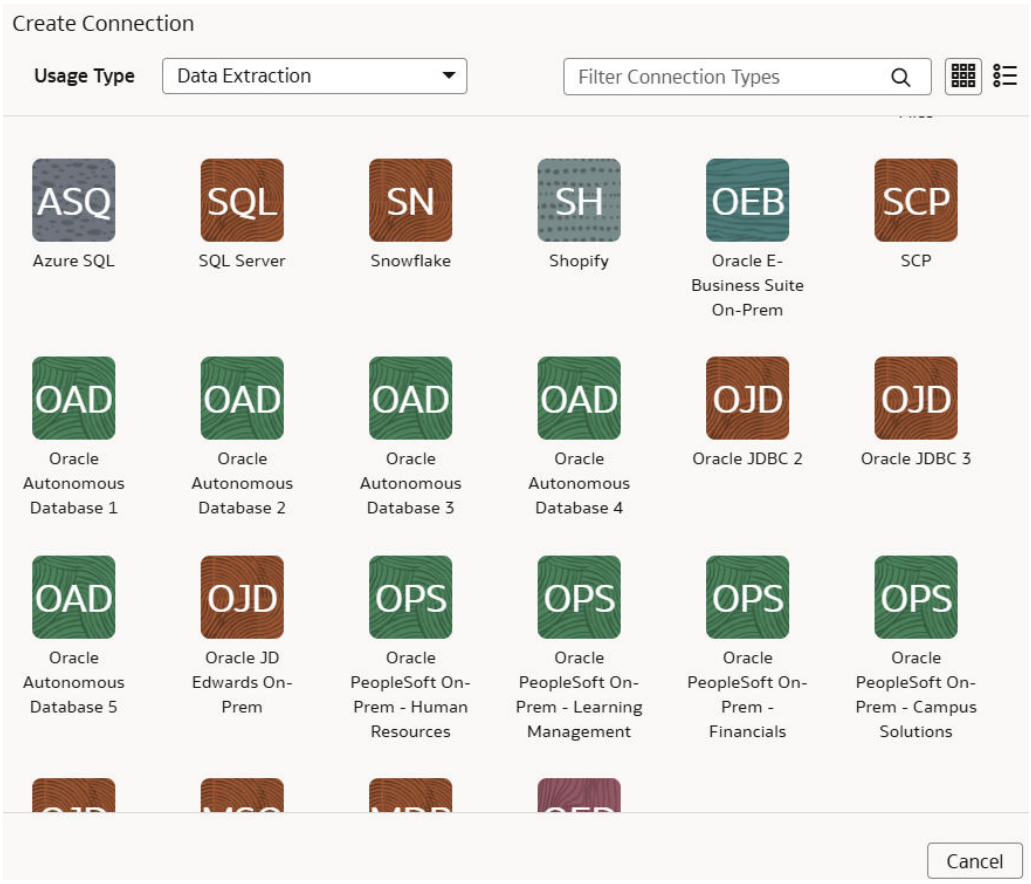
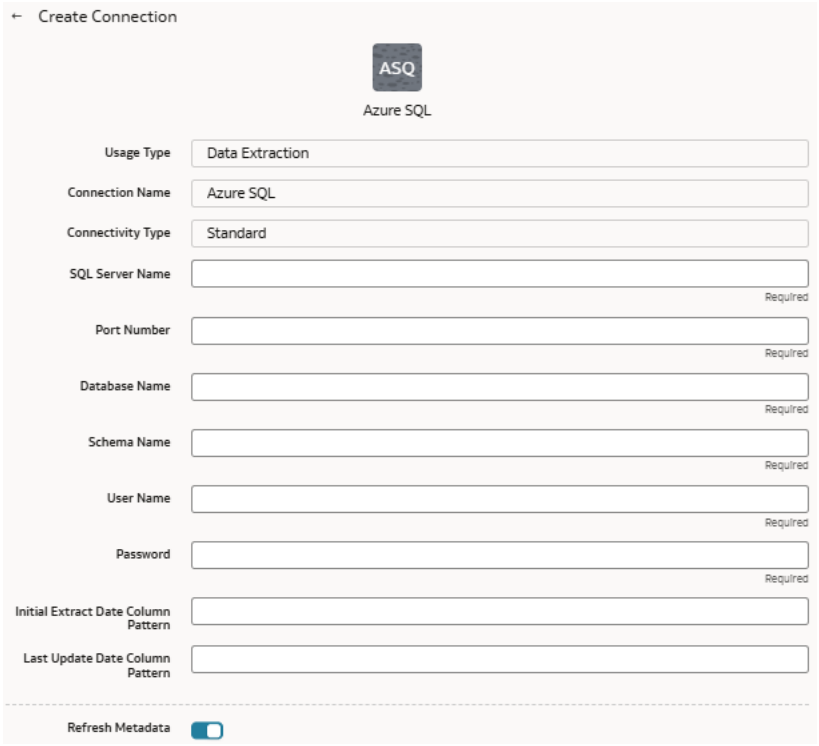


e. In the dialog for the Azure SQL connection, enter your Azure SQL instance details, and click **Save**.



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f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can’t create augmentations for Azure SQL unless you perform a metadata extract.

2. On the Manage Connections page, select **Actions** for the Azure SQL connection and then select **Test Connection**.
3. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

4. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Azure SQL data. Select the applicable Azure SQL source tables. See Augment Your Data.

Connect with Your Oracle Eloqua Data Source (Preview)

If you’ve subscribed for Oracle Fusion CX Analytics and want to load data from your Oracle Eloqua data source into Fusion Data Intelligence, then create a connection using the *Eloqua* connection type.

The Oracle Eloqua data that you load into Fusion Data Intelligence enables you to augment the data in your warehouse and create varied customer experience-related analytics. Ensure that **Oracle Eloqua** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

The Oracle Eloqua data source connector supports the use Oracle Cloud Infrastructure Vault to store your Oracle Eloqua data source connection secrets. When you create a connector for your Oracle Eloqua data source, you can choose to use Oracle Cloud Infrastructure Vault (Customer Vault option) to store your sensitive connection secrets such as passwords. You must add the OCI Identity and Access Management (IAM) policy in the root compartment of your tenancy to allow Fusion Data Intelligence to retrieve the Eloqua connection password from the specified OCI Vault.

1. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
2. On the Data Configuration page, select **Oracle Eloqua** in **Data Source**, then click **Manage Connections** under **Configurations**.

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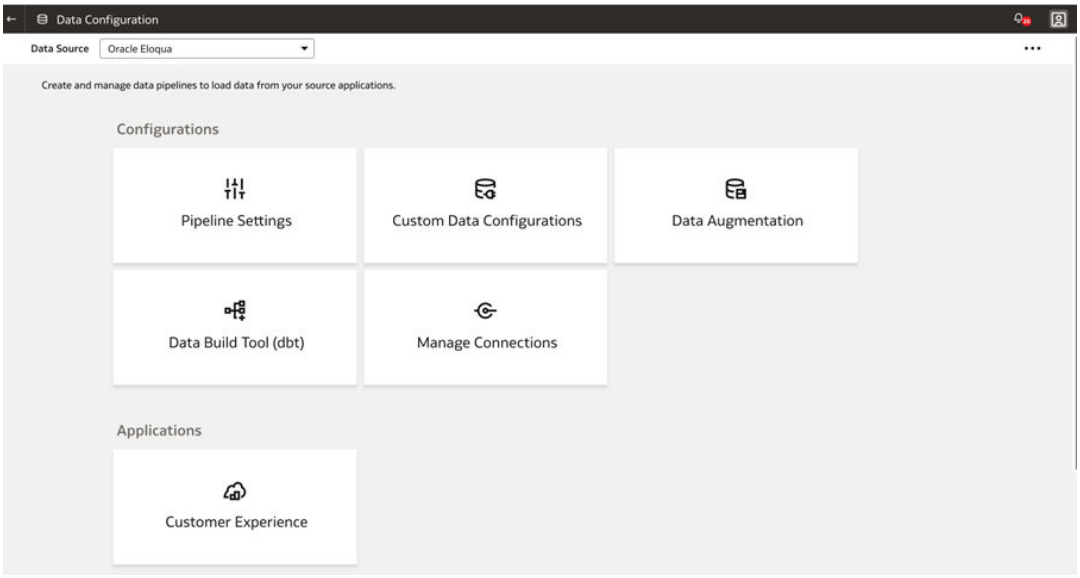

3. On the Manage Connections page, click **Create** and then click **Connection**.
4. In Create Connection, select **Data Extraction** in **Usage Type**, verify that **Connectivity Type** and **Connection Name** are populated automatically.
5. If you want to store your password for Oracle Eloqua data source connection in Oracle Cloud Infrastructure Vault (OCI Vault) in your tenancy, make sure you have selected the **Customer Vault** option for Store Secrets.

   To allow Oracle Fusion Data Intelligence to retrieve the Eloqua connection password from the specified OCI Vault, you must add the following Identity and Access Management (IAM) policy in the root compartment of your tenancy.

   ```
   allow any-user to {SECRET_BUNDLE_READ, SECRET_READ} in tenancy where all {
     request.principal.type in ('fawextsvc'),
     target.secret.id in ('SECRET_OCID')
   }
   ```

   Replace *SECRET_OCID* with the password secret OCID (Oracle Cloud Identifier) string that points directly to the Oracle Eloqua connection password stored inside the OCI Vault or Secret Management service.

   For example,

   ```
   allow any-user to {SECRET_BUNDLE_READ, SECRET_READ} in tenancy where all {
   request.principal.type in ('fawextsvc'),
   target.secret.id in
   ('ocid1.vaultsecret.oc1.iad.amaaaaaa4us7r3yahhfbawhyxkyomxnl')
    }
   ```

6. Provide the details to connect with the Oracle Eloqua source.
   - **User Name** - Enter the username as "CompanyName\UserName", where "CompanyName" is the name of your company in the Eloqua instance and "UserName" is the username in the Eloqua instance.
   - **Customer Tenancy OCID** – Enter your tenancy OCID (Oracle Cloud Identifier) that identifies your root cloud account

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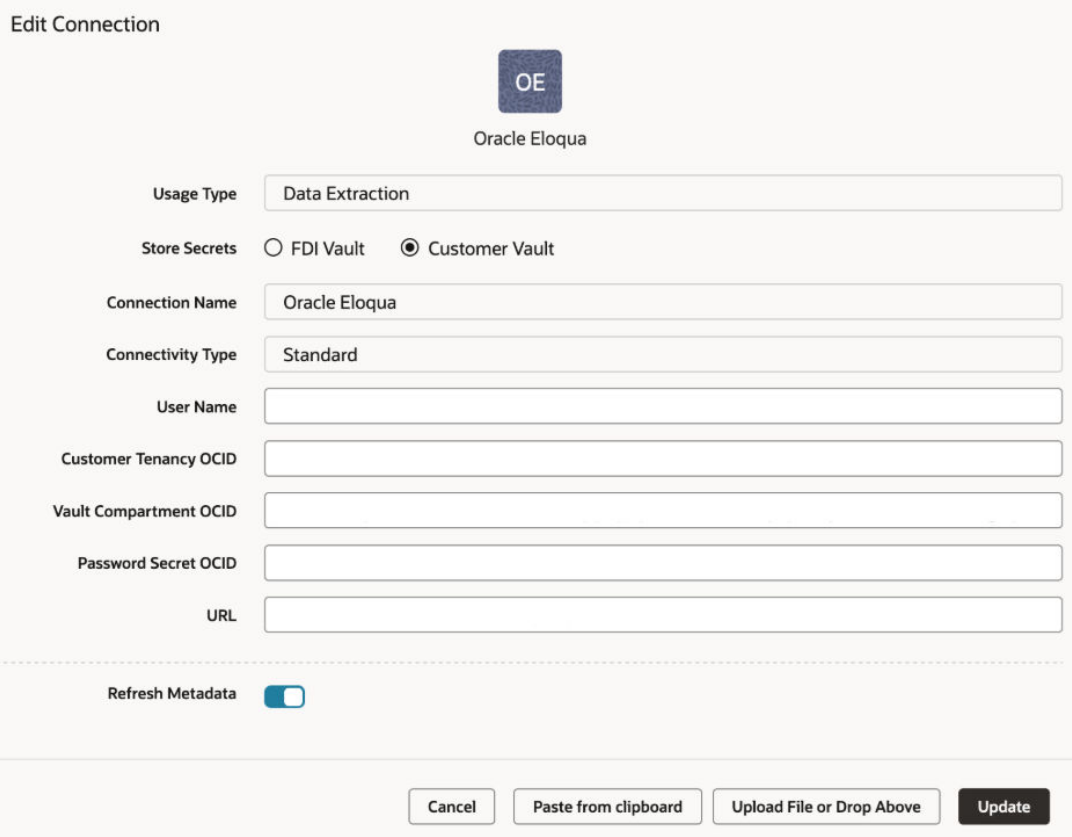
- **Vault Tenancy OCID** – Enter your vault tenancy OCID where your OCI Vault resides.
- **Password Secret OCID** – Enter your password secret OCID (Oracle Cloud Identifier) string that points directly to a secure password stored inside the OCI Vault or Secret Management service.
- **URL** - enter the URL for your Eloqua server in this sample format: https://<your eloqua server>/api/odata.



7. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for Eloqua unless you perform a metadata extract.

8. Click **Save**.
9. On the Manage Connections page, select **Actions** for the Eloqua connection and then select **Test Connection**.
10. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

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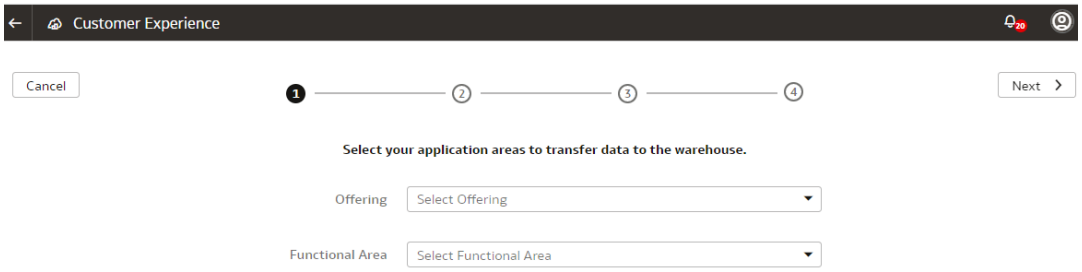
> **Note**
>
> Ensure that you delete the data augmentations and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

11. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Eloqua data. Select the applicable Eloqua source tables. See Augment Your Data.

Load Data from Your Oracle Eloqua Data Source (Preview)

Create a data pipeline for the Marketing Campaign Analytics functional area to load data from your Oracle Eloqua source into Oracle Fusion Data Intelligence.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence, **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click your service. For example, under Applications, click **Customer Experience**.
4. On the Customer Experience page, click **Create**.
5. In the wizard, select **Customer Experience Marketing Analytics** in **Offering** and **Marketing Campaign Analytics** in **Functional Area** to transfer the data to the warehouse, and then click **Next**.



6. Review the parameters and click one of the options:
   - **Cancel**: To cancel the data pipeline for the functional area.
   - **Save**: To save the data pipeline for the functional area but not activate it.
   - **Activate**: To schedule when to run the data pipeline for the functional area. See Activate a Data Pipeline for a Functional Area.

Load Data from Oracle Enterprise Data Management Cloud into Fusion Data Intelligence (Preview)

As a service administrator, you can use the Fusion Data Intelligence extract service to acquire data from the Enterprise Data Management Cloud instance and use it to create data augmentations.

The extracts created in the Enterprise Data Management Cloud service need to be public, hence you must promote your private extracts to the public. Review the documentation and

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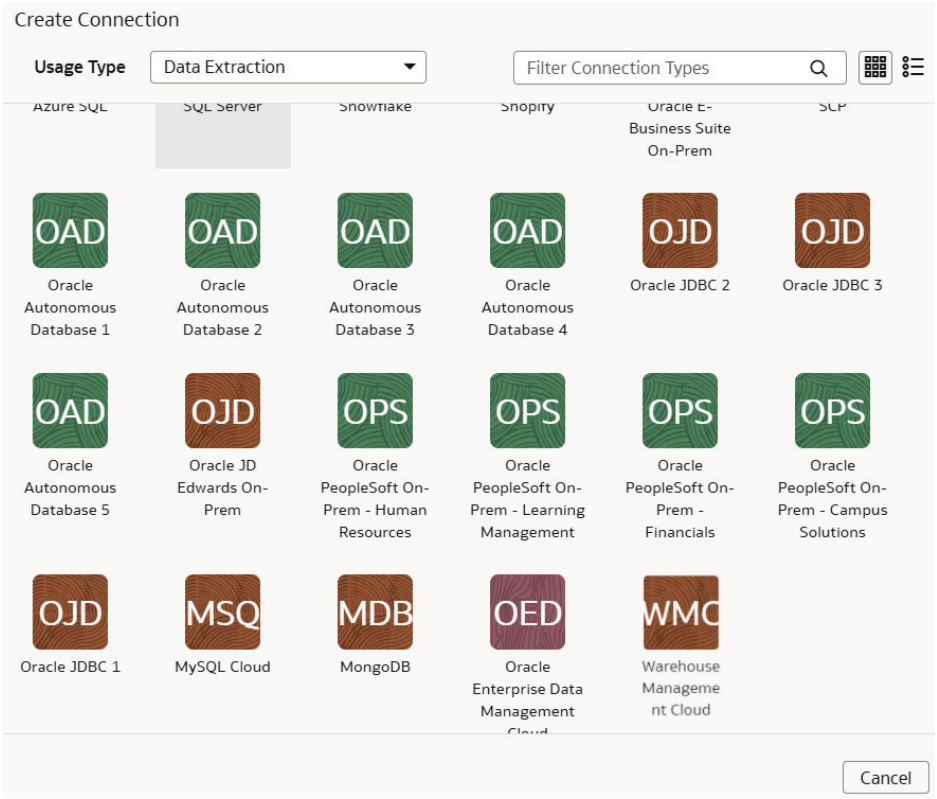
error messages for the metadata refresh failures for the private extract. This connector supports only the CSV data format.

Ensure that **Oracle Enterprise Data Management Cloud** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. In Fusion Data Intelligence, create the Enterprise Data Management Cloud data connection using these instructions:
   a. In Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select **Oracle Enterprise Data Management Cloud** as the connection type.



   e. In the dialog for the Enterprise Data Management Cloud connection, enter the host name of the Oracle Enterprise Data Management server in **Host Name**, credentials to access the Enterprise Data Management Cloud instance in **User Name** and **Password**. In **Extract Configuration**, enter the list of extracts using only “comma” as the delimiter. The configuration extract must be a single line JSON without formatting for the quotation marks (" instead of \"), for example:

```
[{"applicationName": "Account Reconciliation", "dimensionName":
"Profiles","extractName": "Profiles"}]
```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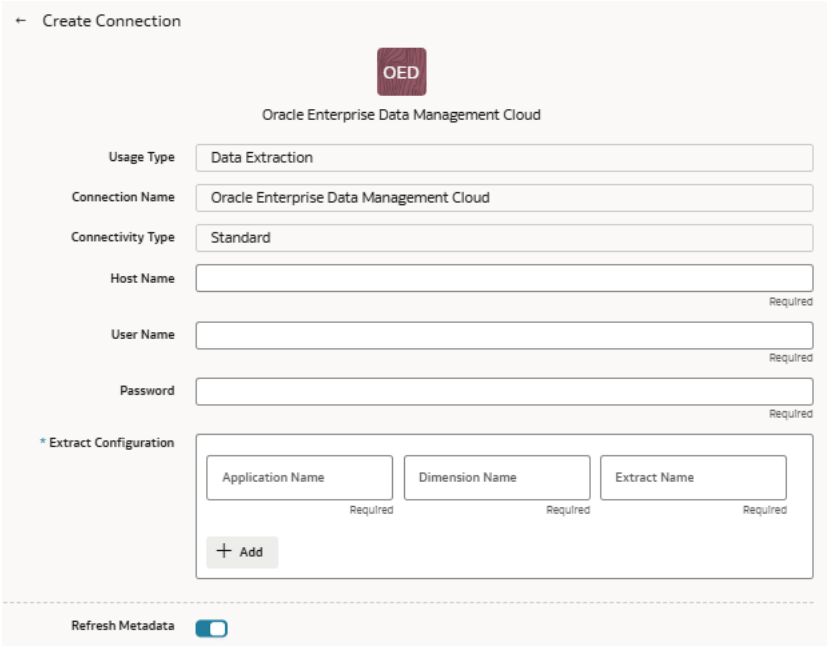

f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for Enterprise Data Management Cloud unless you perform a metadata extract.

g. Click **Save**.

2. On the Manage Connections page, select **Actions** for the Enterprise Data Management Cloud connection and then select **Test Connection**.
3. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

4. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Enterprise Data Management Cloud data. Select the applicable Enterprise Data Management Cloud source tables. See Augment Your Data.

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Connect to Oracle Fusion Cloud Enterprise Performance Management (EPM) (Preview)

Oracle Fusion Data Intelligence supports direct data extraction from Oracle Fusion Cloud Enterprise Performance Management (EPM). This enables Planning and Financial Consolidation teams to leverage the unified analytics across ERP and EPM data without manual file movements.

Topics:

- About Fusion Data Intelligence EPM Integrator
- Prerequisites for Fusion Data Intelligence EPM Integrator Configuration
- Enable Fusion Data Intelligence EPM Integrator
- Create a Oracle Fusion Data Intelligence EPM Integrator Connection
- Update a Fusion Data Intelligence EPM Integrator Connection
- Define EPM Data Extracts in the Oracle Fusion Data Intelligence EPM Integrator
- Recommendations and Tips for Using EPM Integrator
- Frequently Asked Questions for Loading Data from Oracle Enterprise Performance Management

About Fusion Data Intelligence EPM Integrator

Fusion Data Intelligence EPM Integrator enables seamless data flow between Oracle Cloud EPM Planning(PBCS), Oracle Cloud EPM Financial Consolidation and Close (FCCS), Oracle Cloud EPM Profitability and Cost Management (PCMCS), Oracle Cloud EPM Tax Reporting (TRCS), and Fusion Data Intelligence.

Use these Fusion Data Intelligence EPM Integrator connectors:

- Oracle EPM FCCS Integrator
- Oracle EPM Planning Integrator
- Oracle Cloud EPM Profitability and Cost Management Integrator
- Oracle Cloud EPM Tax Reporting Integrator

In a future release, you won't be able to enable and disable features related to these old EPM connectors:

- EPM Financial Close and Consolidation Data Export
- EPM Planning and Budgeting Data Export
- EPM Profitability and Cost Management Data Export

Use the Fusion Data Intelligence EPM Integrators to:

- Extract budget, forecast, or scenario data from EPM Planning applications
- Pull consolidated results from FCCS applications into Fusion Data Intelligence
- Bring dimensions from EPM applications into Fusion Data Intelligence
- Enable side-by-side reporting of actuals vs plan or forecast
- Automate refreshes for month-end or quarterly reporting

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- Leverage EPM dimension hierarchies for reporting

Limitations of Fusion Data Intelligence EPM Integrator:

- Supports one EPM instance as a source per Fusion Data Intelligence EPM Integrator connection.
  When you have multiple EPM sources, you can enable the available Fusion Data Intelligence Integrators and connect one Fusion Data Intelligence to one EPM environment.
- No support for data transformation.

Prerequisites for Fusion Data Intelligence EPM Integrator Configuration

In the Fusion Data Intelligence EPM instance, perform the prerequisite steps for the EPM Integrator configuration.

You must create a source application in Data Exchange and specify the source cubes. The Fusion Data Intelligence EPM Integrator uses the period mapping for incremental load.

1. Set up the source applications in the EPM instance.
   a. Log in to the EPM system and navigate to **Data Exchange**.
   b. From the **Actions** menu, navigate to **Applications**, and then click the **+** (Add) icon to create applications.
   c. Specify the application details.
      - **Category** - Select **EPM Local**.
      - **Application** - Select the application name.
      - **Cubes** - Select the necessary Cube (Don't select All Input Cubes)
      - **Prefix** - Enter FDI.

   Repeat the above steps for all the cubes in the application. You must create a single source application for each cube.
2. Create the category mapping in the Data Exchange application.
   a. In the EPM System, navigate and select **Data Exchange**.
   b. From the Actions menu, navigate to Category Mapping.
   c. Click the **+** icon and create a category mapping under Global Mapping.

      Notice that the Category name and the Target Category is FDI_EXPORT_CAT.
   d. Click **Save**.
3. Validate that the period mapping is available in the EPM System.
   a. In the EPM System, navigate and select **Data Exchange**.
   b. From the **Actions** menu, navigate to **Period Mapping** and make sure that data is available for the current, future, and historical years.

Enable Fusion Data Intelligence EPM Integrator

As a service administrator, you need to enable the feature in Fusion Data Intelligence before using the EPM integrator.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Enable Features** under **Application Administration**.

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3. On the Enable Features page, under the Preview Features tab, search for the Fusion Data Intelligence EPM Integrator you need to use and enable the feature.

Create a Oracle Fusion Data Intelligence EPM Integrator Connection

As a service administrator, you need to create the connection in Oracle Fusion Data Intelligence before using the EPM integrator.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click **Manage Connections**
4. On the Manage Connections page, click **Create** and then click **Connection**.
   a. In Usage Type, select **Data Extraction**.
   b. Search for and select the applicable EPM Integrator.
   c. Enter the connection details:
      - **Hostname** - Enter the URL of your EPM instance. For example, https://epm-<instance>.epm.us-ashburn-1.ocs.oraclecloud.com/
      - **Username**
      - **Password**

      > **Note**
      >
      > The user must have administrator privileges in EPM. Single sign-on and MFA should be disabled for the user.

   d. Configure the connection options:
      - **Initialize Connection** - Keep this option enabled when creating the connection for the first time.
        This option automatically creates the target applications in the EPM Data Exchange of the source EPM application. Disable this option when reinitialization isn't required. Reinitialization clears the data extract jobs defined in Oracle Fusion Data Intelligence .
      - **Reset Cubes List** – Keep this option blank when creating the connection for the first time.
        Use this option with **Initialize Connection**. If **Reset Cubes List** is blank and **Initialize Connection** is enabled, all cubes are reinitialized. Specify one or more cube names if you want to reinitialize only specific cubes.
      - **Refresh Metadata**- Keep this option enabled when creating the connection for the first time.
        This option creates or updates the data stores for dimensions from the EPM cubes. If changes are made in EPM, run Refresh Metadata again to synchronize metadata from EPM to Oracle Fusion Data Intelligence.

   e. Save the connection details.
5. Confirm that the connection initialization and refresh metadata is successful.
6. Click **Pipeline Setting** and configure the Initial Extract Date and Data Refresh Schedule.

   The initial extraction is required to proceed, but isn't used in the Oracle Fusion Data Intelligence EPM integrator.

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Update a Fusion Data Intelligence EPM Integrator Connection

Follow the guidelines while updating the connection details or credentials.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click **Manage Connections**.
4. Edit the connection.
5. Disable **Initialize Connection**, and then update the connection details or credentials.

Define EPM Data Extracts in the Oracle Fusion Data Intelligence EPM Integrator

When you configure data extract for the first time, start with a small dataset from the EPM application. Apply filters on each dimension and restrict each to a single member. This enables faster iterations for testing and helps quickly confirm prerequisites and overall setup before scaling up to larger extracts.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, change the **Data Source** to Oracle EPM FCCS Integrator for FCCS or Oracle EPM Planning Integrator for PBCS.
4. Click **Data Applications**.
5. At the top right of the page, click **Create** and then **EPM Application** to create an EPM application.
6. Click **Create Extract** to create an extract.
7. Provide the following information:
    - Name: Name of the Extract. This name is used for the database object.
    - Label: Label for the Extract. (This field allows special characters.)
    - EPM Application: Select the application from the list.
    - Cube: Select the necessary cube from the list.
    - Target Application: Select the Target Application. Note: Ensure that you select the correct Target Application against the cube.
    - Job Type: Facts and Dimensions.
    - Number of Periods: Select the required value.
        - No Incremental: Use this option when you need to truncate and reload (Full reload) data from EPM.
        - Value: The number of prior periods to load in addition to the current period. The system uses this value to delete the data for particular months in Oracle Fusion Data Intelligence and re-extract the data for those months from the EPM.
            * For example, if you choose 0, then the current month's data is deleted and re-extracted.
            * For example, if you choose 2, the current and two prior months' data are deleted and re-extracted in every incremental run.

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- Data extract options:
  - All Data: Extracts stored values and dynamically calculated values for both the Dense and Sparse dimensions. This option uses the MDX Query Export method.
  - Stored and Dynamic Calculated Data: Extracts for stored members and dynamic calculated members for the Dense dimension only, and not the Sparse dimensions. This option uses the DATAEXPORT command method.
  - Stored Data Only: Extracts stored data only. Dynamically calculated values are excluded in this type of extract. This option uses the DATAEXPORT command method.
  - Level 0 Data: Extracts entire members at the bottom of the dimension (raw data stored in a database) and enables you to apply filters and select columns to include in the output file. This extract option also allows you to export non-numeric data if the target application is an EPM data file. The Level 0 Data option uses the MAXL Export method to extract data. This method can be used only by the Service Administrator. The application is read-only when the extract step is executing.

    > **Note**
    >
    > The All Data option can cause EPM performance issues.

- Supported data extract options for the EPM Integrator:
  - ASO Cube: All Data, Level 0 Data
  - BSO Cube: Stored Data only, Stored and dynamically calculated Data, Level 0 Data
  - Hybrid Cube :All Data, Stored and Dynamic Calculated Data, Stored Data Only, Level 0 Data

8. Complete the filter definition for all the dimensions in the extract configurations.
   - You can select a filter for each row (dimension). Choosing filters for all dimensions is recommended.
   - You can search for any Member and use EPM member functions. For more information on EPM member functions, see Member Relationships.
   - You can also search for a member and add it to the filter.
9. Apply filters for all dimensions.
   - You can create multiple smaller jobs to extract data using split dimensions. By default, Year is always selected as a split dimension.
   - You can select one more additional dimension as a split dimension.
   - To improve performance, use multiple jobs to extract large sets of data.
   - Review your EPM design and carefully choose the split dimension value based on your EPM cube design.
10. Click **Save**.

    You can create multiple extract definitions and include or exclude specific items. Excluded extract configurations are saved and won't be executed. You can exclude and include any extract configurations:

    - You can create multiple extract configurations and keep them as draft items to help you manage your SDLC process for the extract configurations.

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- You can move any failed extract configurations to the excluded state so that you can deploy the application.

11. Click **Save and Exit** to save the configuration.

    If you click Cancel, unsaved extract definitions and changes are lost.

12. In the data Configuration page, click **Publish**.

After the application is published, data extracted from EPM is available in the Oracle Fusion Data Intelligence database. Each extract configuration is an individual table.

- You can connect OAX_USER and query all the tables created by the Oracle Fusion Data Intelligence EPM Integrators.
- The naming convention for Oracle EPM PBCS Integrator is `DW_EPI_X_EPM_PBCS_INT_<Extract Name>`.
- The naming convention for the Oracle FCCS Integrator is `DW_EFI_X_EPM_FCCS_INT_<Extract Name>`.

Recommendations and Tips for Using EPM Integrator

When using EPM Integrators, review the recommendations and tips to ensure that your works as expected.

- Ensure you complete the prerequisites before logging in and defining the extract configurations.
- When you make changes in the EPM Integrator, refresh the metadata before you access the integrator user interface.
- Before you start using the Fusion Data Intelligence EPM Integrator, review the EPM cubes and understand the data you need to extract. This ensures you apply the correct filters in each extract configuration.
- Fusion Data Intelligence EPM Integrator only supports accessing one connection per support EPM module. For example, one PBCS, one FDDS, on TRCS, and one PCMCS instance.
- When you configure your data extract for the first time, start with a small dataset from the EPM application. Apply filters on each dimension and restrict each to a single member. This allows for faster iterations for testing and helps quickly confirm prerequisites and overall setup before you scale up to larger extracts.
- Fusion Data Intelligence EPM Integrator doesn't support any transformations at the EPM Level. The integrator should be used to extract the data from EPM into Fusion Data Intelligence ADW. Once the data is loaded, you can use various options to do further transformations. Use Data Augmentation Scripts (DAS) to transform data loaded to Fusion Data Intelligence.
- Add filters for all the dimensions in the EPM Integrator. The system doesn't restrict you from creating data configurations without filters. However, if you don't add filters, the jobs in EPM may take a long time to complete, or they may get stuck or fail within the EPM System.
- Exercise caution when using the All Data option in the data extract options. The All Data option can cause long-running jobs and you should avoid this scenario whenever possible.
- Avoid creating a single large extract configuration that encompasses all the data from the cube. The system supports multiple Data Extract configurations. You should assess the EPM system and develop numerous data extractions based on your reporting requirements.

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- Use the Incremental value setting only when you want to load current period or prior periods only, where the current period is the system's actual current period. After the first full load as per the filters, it will only clear and reload current and prior periods, not the future periods. Set loads to No Incremental for any data extract that requires future years and periods.
- Fusion Data Intelligence EPM Integrator manages all the jobs. You shouldn't cancel, modify, or tamper with jobs created by the EPM Integrator.
- Create new dedicated source applications for Fusion Data Intelligence EPM Integrator and don't use an existing one.
- The Source and Target data exchange applications are intended for use only by the FDI EPM Integrator; they shouldn't be updated or utilized by other processes.
- If there are any failed EPM jobs, the logs will be available in the EPM system, and you can analyze them to identify and resolve potential failures. Once the necessary changes are done, you can republish in the Fusion Data Intelligence EPM Integrator.
- While managing an existing connection, disable **Initialize Connection**. Only enable this feature when a there's a change in the EPM source configuration a configuration change (for example, a dimension is added, removed, or renamed).

Frequently Asked Questions for Loading Data from Oracle Enterprise Performance Management

Here are answers to common questions asked by administrators of Fusion Data Intelligence EPM Integrators.

Can I change my data extract after it has been set up?

Yes, you can edit and republish data extract.

Can I see the extract status?

Yes, you can view the data extract status in the EPM and Fusion Data Intelligence systems.

What if I don't see updated members (like new cost centers)?

Request a metadata refresh.

What should I avoid?

Avoid using **All Data** unless absolutely required; it can negatively impact performance.

Why am I not seeing data in target tables in Oracle Autonomous Data Warehouse?

- Identify the scenario, version, years, and period in the source application with the expected subset of the data.
- Verify the filters on the dimensions.
- Apply filters on all the dimensions.

How do I change the log levels in EPM data exchange?

The default logging in the EPM Development Environment is Log 4. In some cases, to debug the issues, we need to change the log level to Log 5. Perform these steps to change the logging:

1. Log in to EPM
2. Navigate to Data Exchange.

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3. Click on **Action**, then **System Settings**.

How do I update credentials for the EPM application in the connection?

1. In Fusion Data Intelligence console, navigate to Data Configuration, then select **Manage Connections**, and then click **Edit Connection**.
2. Update the username and/or password.
3. Disable **Initialize Connection** and **Refresh Metadata**.

When you've completed the steps, test the connection and monitor the request history for activity.

Why am I getting an error while publishing data extract job with Incremental period selected?

- Error: Failed to save datastore.
- Error Details: Incremental extract requires at least one Period filter value to be selected from the valid dimension
- Data extract jobs with Number of Period = “No Incremental” works well but the extract job fails if I select any value (0 – 12).
- The Global Period Mapping in EPM Data Exchange needs review.
- Confirm the first entry in the Global Period Mapping has the Year and Period values (e.g. Target Year = FY20, Target Period – Month = Jan)

How to Solve It?

- If the first entry is not a Year and Period value (e.g. “No Year” and “BegBalance”)
- Create an entry for a Year and Period that is prior to the initial date within the EPM application. This will ensure there is no impact on the other integrations in the EPM Data Exchange.
- Example entry: Target Year = FY01, Target Period – Month = Jan
- In Fusion Data Intelligence, refresh metadata and retry publishing the incremental data extract job.

Why am I not seeing dimension tables in bulk data augmentation?

Clear the browser cache or use private/incognito browser session for bulk data augmentation.

Load Data from Oracle Enterprise Performance Management into Fusion Data Intelligence (Preview)

As a service administrator, you can use the Oracle Fusion Data Intelligence extract service to acquire data from the Enterprise Performance Management (EPM) SaaS instance and use it to create data augmentations for various Enterprise Resource Planning and Supply Chain Management use cases.

> **Note**
>
> This connector will be deprecated soon. Oracle recommends that you use the Fusion Data Intelligence EPM Integrator connector.

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You can connect to these functional modules of EPM:

- Financial Close and Consolidation (FCCS)
- Planning and Budgeting (PBCS)
- Profitability and Cost Management (PCMCS)

If you've pivot table in your source, then the metadata extract supports pivot table metadata extraction for the EPM connectors. You can only manually extract the incremental data because, for incremental extraction, you must update the results file in EPM before starting the next extraction for the updated data. Update the results file by running the integration using Data Exchange and then access the new results file from the EPM connector in Oracle Fusion Data Intelligence. Ensure that you enter all the fields in accordance with your EPM nomenclature and specifics. For example, if you have defined Period in your EPM job as {June-23}, then include exactly the same in the Create Connection for the EPM source dialog.

> **Note**
>
> The EPM connectors display the default datatype and size; you must edit these values as applicable while creating data augmentations.

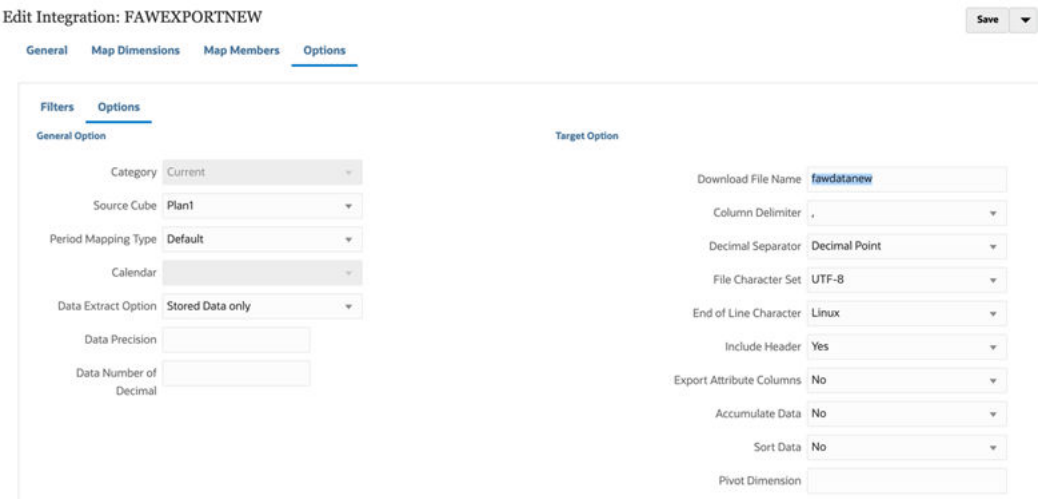
Depending on the functional module you want to connect to, ensure that the applicable feature is enabled on the Enable Features page prior to creating this connection:

- **Oracle EPM - Financial Close and Consolidation**
- **Oracle EPM - Planning and Budgeting**
- **Oracle EPM - Profitability and Cost Management**

See Make Preview Features Available.

Ensure that the user that you mention in the **Username** field while creating the connection has administrator access and can sign in to run the jobs from EPM.

1. In EPM, create an integration, write out the results into a file whose name you provide in **Download File Name**, and then specify that same file name in List of Data Files while creating the connection to EPM in Oracle Fusion Data Intelligence to extract the data.



2. In EPM, when exporting data, use one of the following modes:

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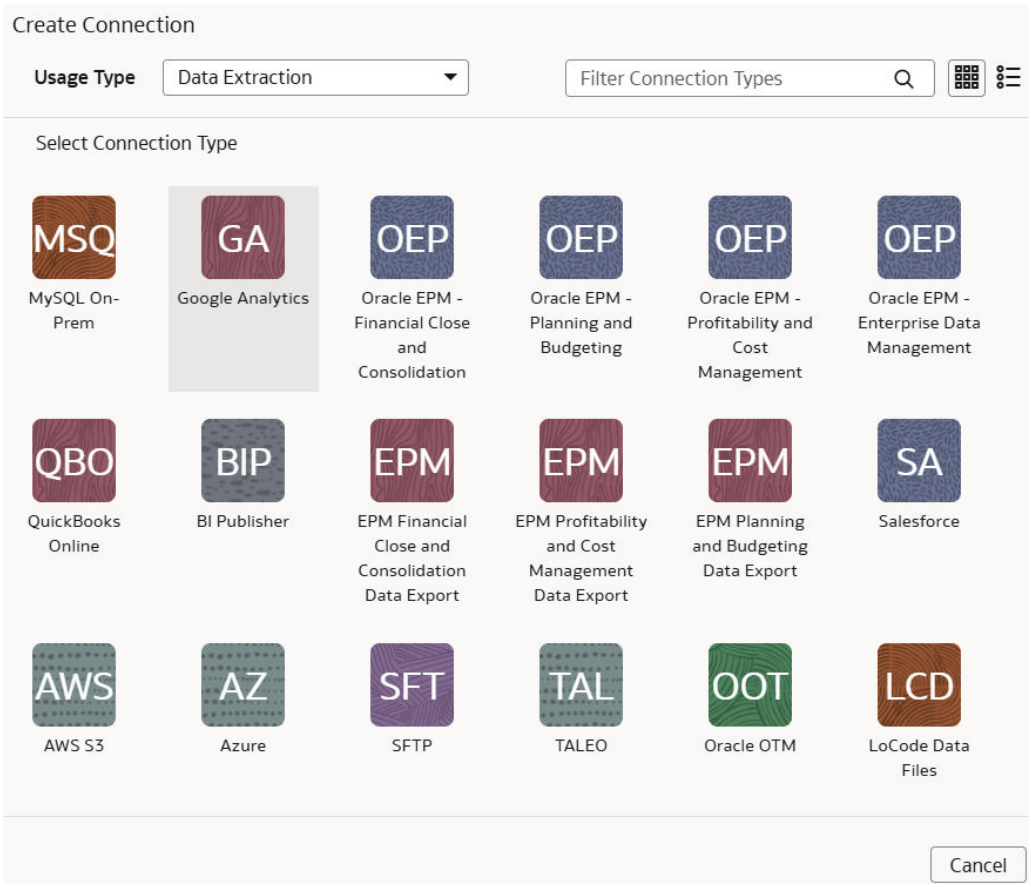
- Standard mode: This built-in workflow process helps manage the data flow process in and out of EPM. For Standard mode, you specify the period when you run the integration.
- Quick mode: This process by-passes most of the steps in the workflow and provides a significant improvement in the extract process. When using quick mode, you specify the period in the integration definition filter, and this may include a substitution variable. When using the API, the same rules apply, except that when you need to specify a period, you can't use a substitution variable to pull from EssBase, but will need to include the period or year on extract.

See Exporting Data.

3. In Oracle Fusion Data Intelligence, create the EPM data connection using these instructions:
   a. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select the connection type based on the functional module that you want to connect to. For example, to connect to the "Financial Close and Consolidation (FCCS)" module, select **Oracle EPM - Financial Close and Consolidation** as the connection type.



   e. In the dialog for the Oracle EPM connection, provide these details in **Source Connection** and then click **Save and Next**:

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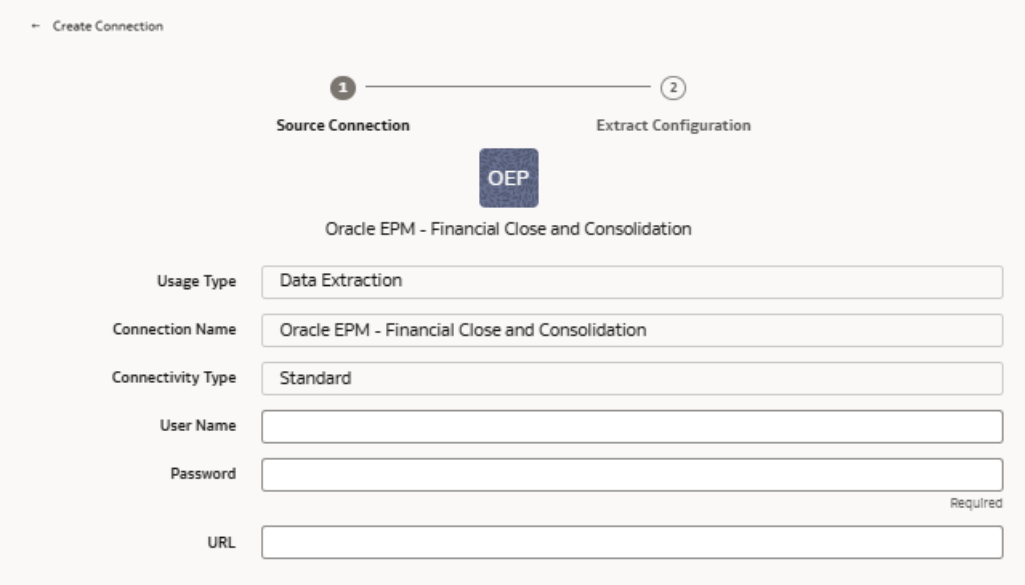
> **Note**
>
> Some properties are defined on the **Extract Configuration** tab. These properties are visible, but read-only on the **Source Connection** tab.

- **User Name** and **Password**: Enter the credentials for your EPM source. Prefix the user name with the domain of your EPM source, such as `domain.username`.
- **URL**: Enter the specific URL of your EPM source using the `https://<DOMAIN_NAME>region.ocs.oraclecloud.com` format. For example, `https://epm7-test-a123456.epm.us6.oraclecloud.com`. Ensure to use the `https://` protocol to avoid a timeout error.



f. In the Extract Configuration page of the Oracle EPM connection dialog, provide these details and click **Save**:

- Select **Integration Job** from the **Job Mode** dropdown, then provide the **Job Name** and **Period Name** details in the **Extract Configuration** section.
  - **Job Name**: Provide the EPM job name such as "Job 1" and period name such as "Quarter 1" corresponding to the given job name to extract data for specific periods. This enables you to run multiple EPM jobs. To ensure a healthy connection, you should first run the desired EPM integration jobs in the EPM user interface. Then enter the successfully-run and valid EPM integration job names in this field. If you've multiple job names, ensure that they are comma separated. For example, FAWEPMTestingV2, FAWEXPORT,FAW Job Testing.
  - **Period Name**: Provide the period names for the corresponding job names. Ensure that multiple period names are comma separated. You may leave this blank, in which case the connector uses the global point of view. Few examples of period names are:
    * `{Jan-22},{Oct-22}`
    * `{Nov-22}{Dec-22},{Jan-23}{Feb-23}`
    * `{Jan#FY20}{Mar#FY20},{Apr#FY20}{May#FY20}`

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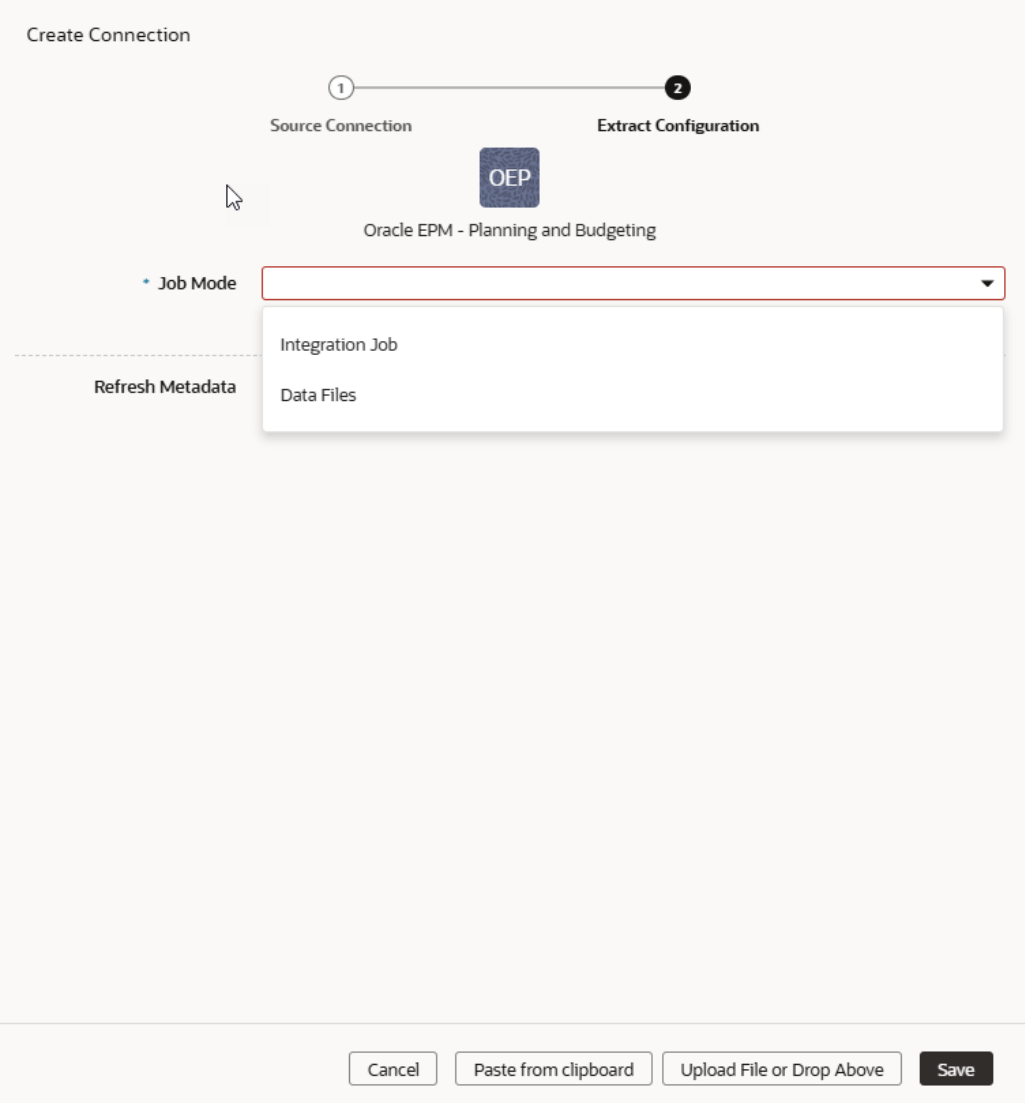
- Alternatively, select **Data Files** from the **Job Mode** dropdown, then provide the
  - **List of Data Files**: Specify the file name that you had entered in **Download File Name** while creating an integration in EPM.



g. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for EPM unless you perform a metadata extract.

h. Click **Save**.

4. On the Manage Connections page, select **Actions** for the EPM connection and then select **Test Connection**.

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5. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

6. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the EPM data. Select the applicable EPM source tables. See Augment Your Data.

Load Data from EPM Export Data Instance into Fusion Data Intelligence (Preview)

As a service administrator, you can use the Fusion Data Intelligence extract service to acquire data from EPM Export Data instance and use it to create data augmentations.

> **Note**
>
> This connector will be deprecated soon. Oracle recommends that you use the Fusion Data Intelligence EPM Integrator connector.

You can connect to these functional modules of EPM:

- Financial Close and Consolidation (FCCS)
- Planning and Budgeting (PBCS)
- Profitability and Cost Management (PCMCS)

If you've pivot table in your source, then the metadata extract supports pivot table metadata extraction for the EPM connectors. You can only manually extract the incremental data because, for incremental extraction, you must update the results file in EPM before starting the next extraction for the updated data. Update the results file by running the integration using Data Exchange and then access the new results file from the EPM connector in Fusion Data Intelligence. Ensure that you enter all the fields in accordance with your EPM nomenclature and specifics. For example, if you have defined Period in your EPM job as {June-23}, then include exactly the same in the Create Connection for the EPM source dialog.

> **Note**
>
> The EPM connectors display the default datatype and size; you must edit these values as applicable while creating data augmentations.

Depending on the functional module you want to connect to, ensure that the applicable feature is enabled on the Enable Features page prior to creating this connection:

- **EPM Financial Close and Consolidation Data Export**
- **EPM Planning and Budgeting Data Export**
- **EPM Profitability and Cost Management Data Export**

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See Make Preview Features Available.

1. From your EPM instance, collect the application name and job names to provide in the source connection configuration tab on the connection dialog in Fusion Data Intelligence using these instructions:
   a. On the main dashboard page of the EPM instance, select **Application** and then **Overview**.
   b. On the Overview page, note down the Application Name to use in the connection properties.
   c. To fetch the job names, on the right side of the Overview page, select the Actions drop down and then select **Export Data**.
   d. In the Export Data dialog, the job names appear as a list. Each job name is a separate job with a unique job name. You may see one or no job name(s).
2. In EPM, when exporting data, use one of the following modes:
   - Standard mode: This built-in workflow process helps manage the data flow process in and out of EPM. For Standard mode, you specify the period when you run the integration.
   - Quick mode: This process by-passes most of the steps in the workflow and provides a significant improvement in the extract process. When using quick mode, you specify the period in the integration definition filter, and this may include a substitution variable. When using the API, the same rules apply, except that when you need to specify a period, you can’t use a substitution variable to pull from EssBase, but will need to include the period or year on extract.

   See Exporting Data.
3. In Fusion Data Intelligence, create the data connection to the EPM Export Data instance using these instructions:
   a. In Fusion Data Intelligence **Console**, click **Data Configuration** under Application Administration.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select the connection type based on the functional module that you want to connect to. For example, to connect to the "Financial Close and Consolidation (FCCS)" module, select **EPM Financial Close and Consolidation Data Export** as the connection type.

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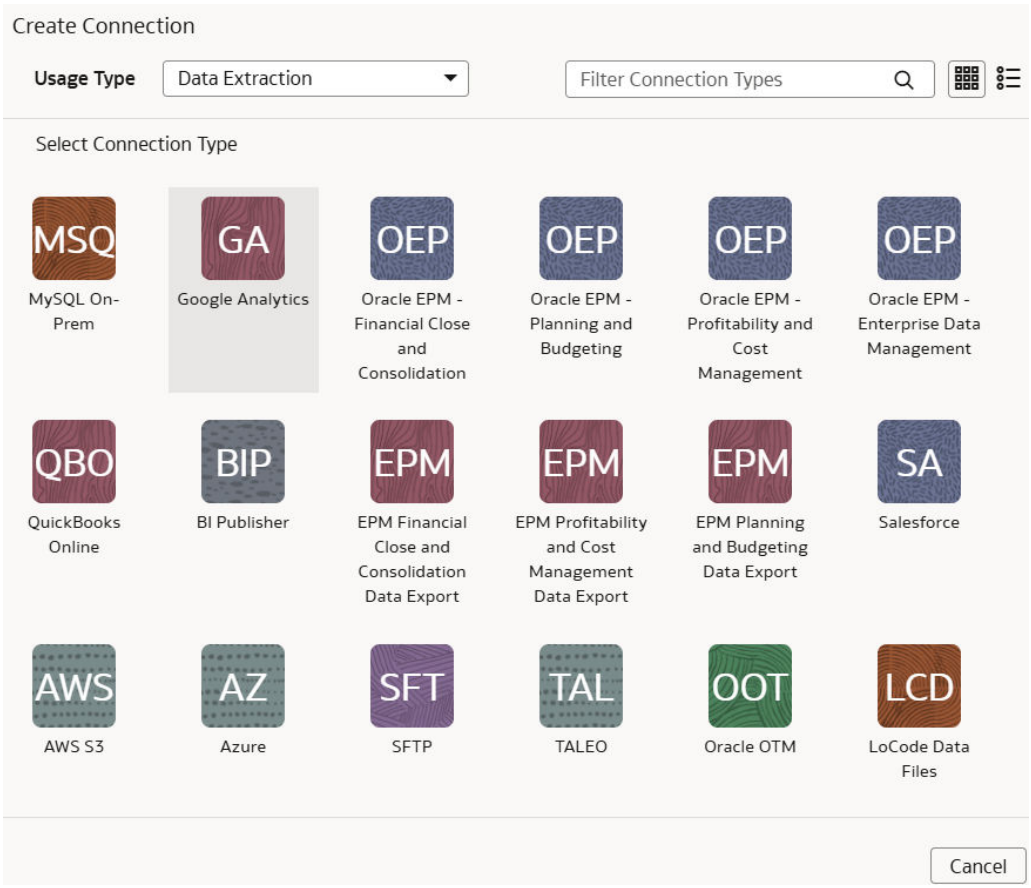

e. In Create Connection for the EPM source, enter these details and click **Save**:

- **URL**: Enter the specific URL of your EPM source ensuring to use `https`. For example, `https://epm7-test-a123456.epm.us6.oraclecloud.com`. If you provide `http://epm7-test-a123456.epm.us6.oraclecloud.com` or `epm7-test-a123456.epm.us6.oraclecloud.com`, then the system rejects it.
- **User Name** and **Password**: Enter the credentials for your EPM source. Prefix the user name with the domain of your EPM source, such as `domain.username`.
- **EPM Application Name**: Specify the file name that you had entered in **Download File Name** while creating the EPM data exchange job in EPM.
- **Comma Separated Job Names**: Provide the EPM data exchange job names. If you've multiple job names, then ensure that they are comma separated. For example, `FAWEPMTestingV2, FAWEXPORT,FAW Job Testing`.
- **Extract Configuration**: Provide the EPM data exchange job name in **Job Name** and select **Dimension Export** if you want to extract the hierarchy (dimensional data) from your EPM Export Data instance.

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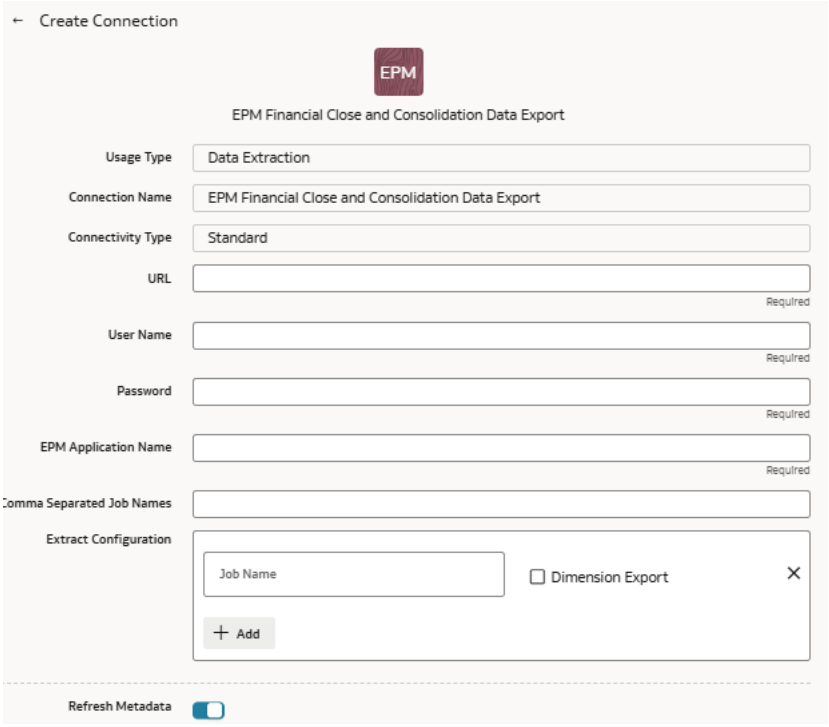

f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for EPM unless you perform a metadata extract.

g. Click **Save**.

4. On the Manage Connections page, select **Actions** for the EPM connection and then select **Test Connection**.
5. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

6. AAfter the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the EPM data. Select the applicable EPM source tables. See Augment Your Data.

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Load Data from Google Analytics into Oracle Fusion Data Intelligence

As a service administrator, you can use the Oracle Fusion Data Intelligence extract service to acquire data from the Google Analytics SaaS instance and use it to create data augmentations for various Enterprise Resource Planning and Supply Chain Management use cases.

Before connecting with the Google Analytics source, note these:

- Oracle Fusion Data Intelligence supports Google Analytics extractor for GA4 properties and doesn't support the previous version – Google Universal Analytics (UA) properties.
- DataStores are the list of GA4 properties.
- DataStore columns are the list of Dimensions and Metrics for a GA4 property.
- DataExtract runs the report based on user selection for a GA4 property as DataStore and Dimensions and Metrics as DataStore columns.
- MetaExtract fetches metadata for all the available GA4 properties (DataStores) and its Dimensions and Metrics (DataStoreColumns).
- This connector supports limited number of Google Analytics metrics. See Dimensions Metrics Explorer to know what's available.

1. In Google Cloud (Analytics) Project, create a service account and download the `credentials.json` file.

   See https://cloud.google.com/docs/authentication/production.

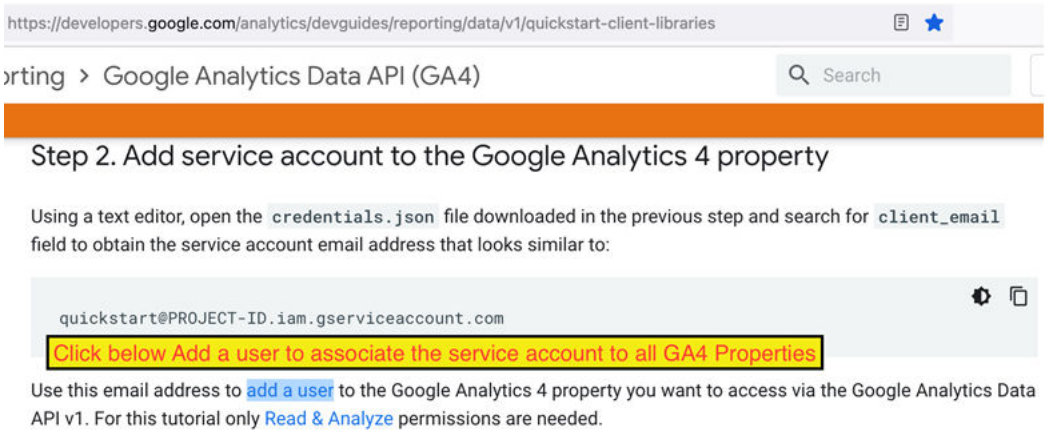
2. Add the service account to the Google Analytics 4 property.

   See https://developers.google.com/analytics/devguides/reporting/data/v1/quickstart-client-libraries.

3. Enable Google Analytics APIs using these instructions:

   a. Using a text editor, open the `credentials.json` file that you had downloaded and search for the `client_email` field to obtain the service account email address.

   b. Use this email address to add a user to the Google Analytics 4 property you want to access through the Google Analytics Data API v1.



4. Ensure that the Google Analytics Admin API, Google Analytics Data API are available for your Google Analytics instance.

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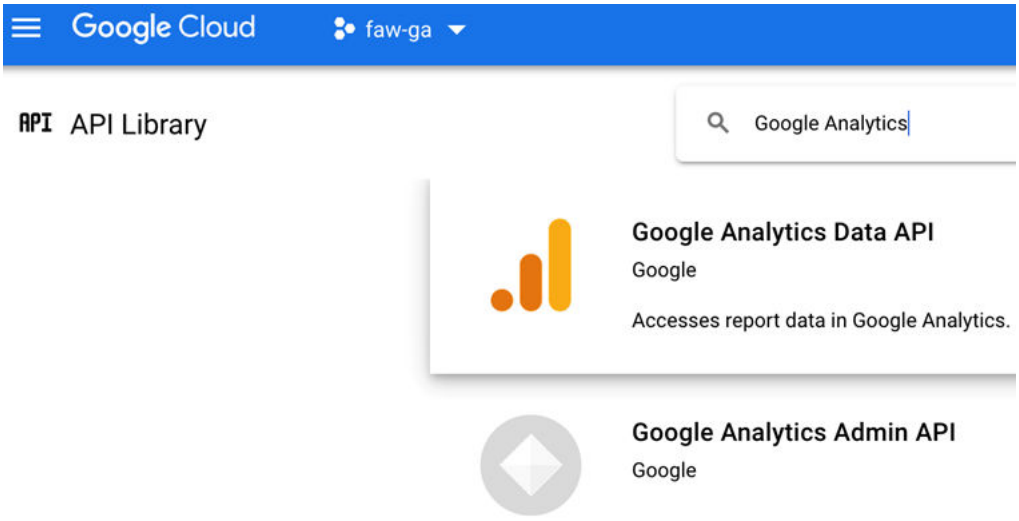
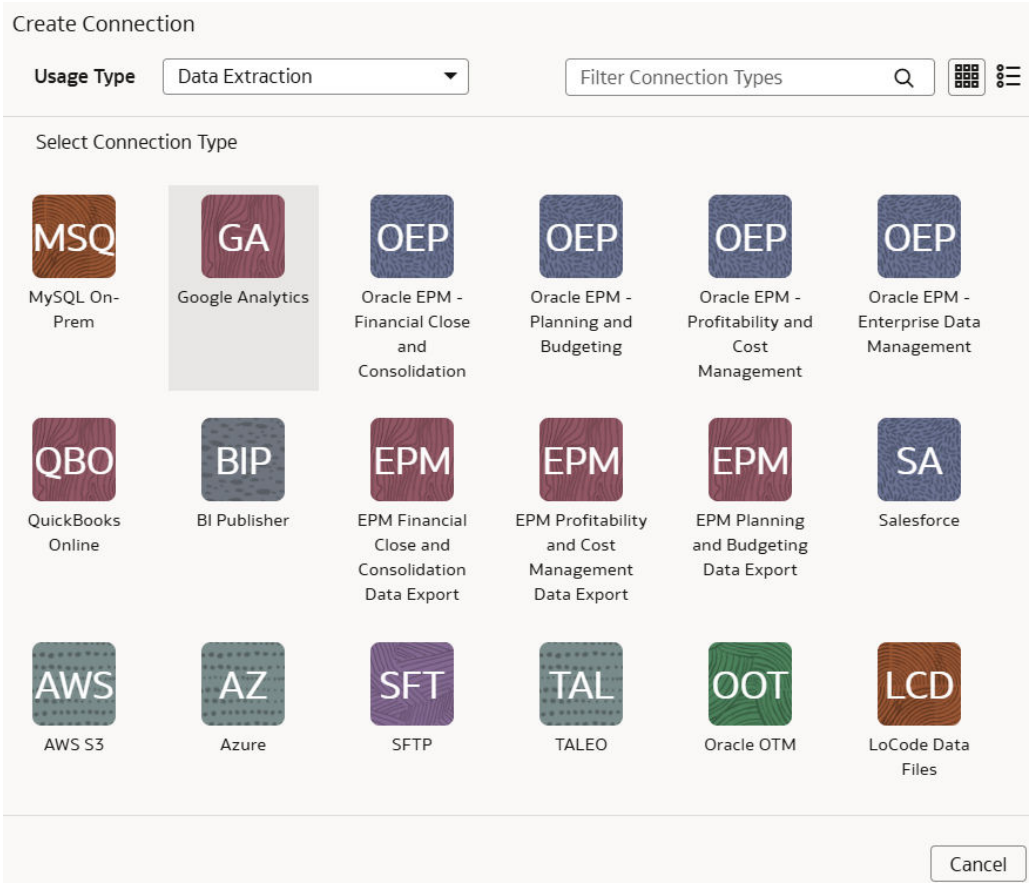


5. In Oracle Fusion Data Intelligence, create the Google Analytics data connection using these instructions:
   a. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select **Google Analytics** as the connection type.



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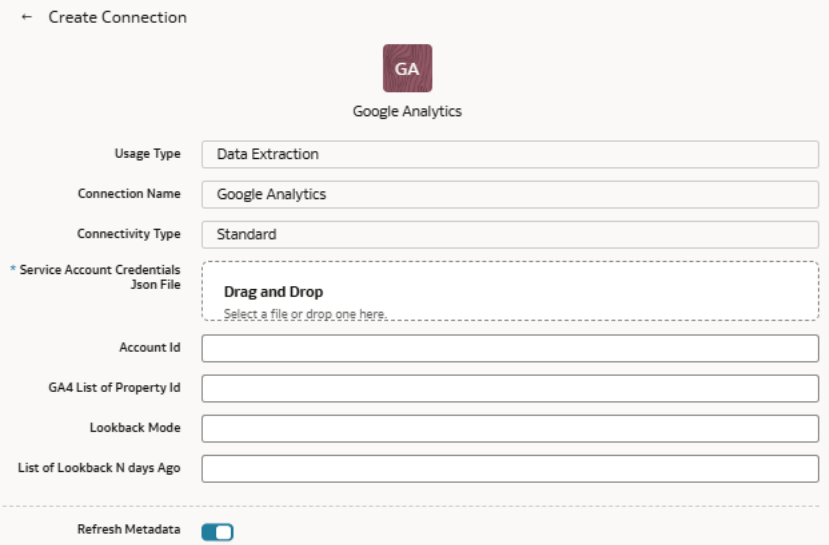
e. In the dialog for the Google Analytics connection, select **Standard** as the connectivity type and enter these details:

- **Service Account Credentials Json File**: The Google Cloud Service Account `credentials.json` file that you had downloaded.
- **Account ID**: Google Analytics account ID.
- **GA4 List of Property ID**: The GA4 List of Property ID with commas to separate each ID.
- **Lookback Mode**: Select either Full or Committed.
- **List of Lookback N days Ago**: Comma separated list of days (integer) values such as 7,21.



Note these:

- For the Lookback mode, if you don't provide a value, then the Lookback mode isn't supported. The Full option requires one day value, if you provide multiple values, then the process uses the first value. You can provide multiple values for the Committed option.
- For List Data Stores, the REST API returns a list of GA4 Property IDs either using the Account ID (if provided) or just the source configured or provided list of property.
- For List columns, the REST API returns a list of column metadata for the given GA4 Property ID.

f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

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> **Note**
>
> You can't create augmentations for Google Analytics unless you perform a metadata extract.
> Metadata extract:
>
> - Retrieves metadata columns for each GA4 Property ID provided in the source configuration.
> - Prefixes the GA property columns with `Dimension_` or`Metric_` that Oracle Fusion Data Intelligence later uses while extracting data to differentiate Dimension and Metric column type.
> - Leaves the payload `dataStores` array empty.

g. Click **Save**.

6. On the Manage Connections page, select **Actions** for the Google Analytics connection and then select **Test Connection**.

> **Note**
>
> REST API signature is same across sources. Test connection invokes GA Common Metadata API. This returns the default version values and no calls are made to the source.

7. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

8. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Google Analytics data. Select the applicable Google Analytics source tables. Ensure that you specify "Dimension_transactionId" in the source tables as the primary key and use it to join each of the data augmentation tables. You can select a maximum number of nine dimensions for each data augmentation. See Augment Your Data.

   When you enable data extraction, you can schedule to run when you choose to do so. For data extraction, note these:

   a. Provide date ranges to run the report and fetch data.

   b. Regular data extract uses the initial or last ExtractDate as *StartDate* and job RunDate as *EndDate*.

   c. Lookback mode includes additional date ranges along with the regular extract date range which fetches additional dataset but in a single runReport call.

      - The Full option has a single date range; StartDate=ExtractDate - NdaysAgo, EndDate=RunDate.

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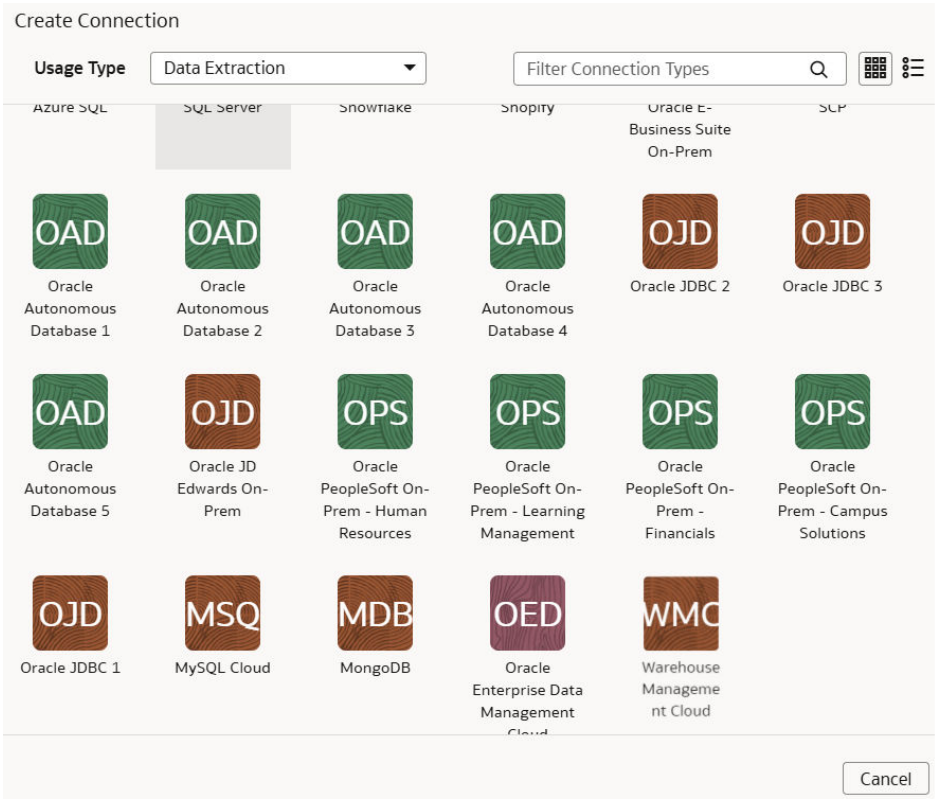
- The Commited option can have multiple date ranges. For each configured GA_LIST_OF_N_DAYS_AGO, StartDate=ExtractDate - NdaysAgo, EndDate=RunDate - NdaysAgo.

Load Data from MongoDB into Fusion Data Intelligence (Preview)

As a service administrator, you can use the Fusion Data Intelligence extract service to acquire data from the Mongo database and use it to create data augmentations.

Ensure that **MongoDB** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. Check the port number for your Mongo database and create a service request with server host and port details to enable network connectivity to the Mongo database server.
2. In Fusion Data Intelligence, create the Mongo database connection using these instructions:
   a. In Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select **MongoDB** as the connection type.



   e. In the dialog for the Mongo database connection, provide these details:
      - **Connection Protocol**: Enter the connection protocol such as `mongodb+srv` or `mongodb`

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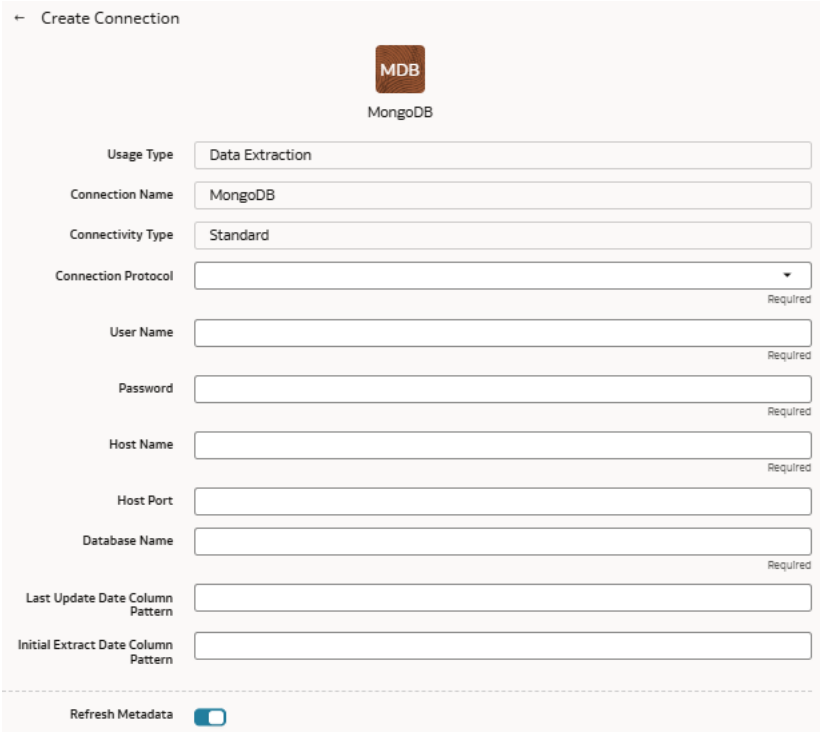
- Credentials to access the database in **User Name** and **Password**
- **Host Name**: Enter the host name of the Mongo database such as `cluster0.example4.mongodb.net`
- **Host Port**: Enter the port number where Mobgo database is listening such as `27017`
- **Database Name**: Enter a name such as `Analytics`
- **Last Update Date Column Pattern**: Enter pattern such as `"%mo%fie%te%"`

> **Note**
>
> If column name matches with pattern provided, then Fusion Data Intelligence marks the column name with `isLastUpdateDate = true` and uses it for the incremental extract. For example, if pattern provided is `"%mo%fie%te%"`, then the column name `modifiedDate` is marked as `isLastUpdateDate = true`.

- **Initial Extract Date Column Pattern**: Enter pattern such as `"%cr%ted%te%"`

> **Note**
>
> If column name matches with pattern provided, then Fusion Data Intelligence marks the column name with `isCreationDate = true` and uses it for the initial extract date extraction. For example, if pattern provided is: `"%cr%ted%te%"`, then the column name `createdDate` is marked as `isCreationDate = true`.



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f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can’t create augmentations for Mongo database unless you perform a metadata extract.

g. Click **Save**.

3. On the Manage Connections page, select **Actions** for the Mongo database connection and then select **Test Connection**.
4. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

5. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Mongo database data. Select the applicable Mongo database source tables. See Augment Your Data.

Load Data from MySQL Cloud Database into Fusion Data Intelligence (Preview)

As a service administrator, you can use the Fusion Data Intelligence extract service to acquire data from the MySQL Cloud database and use it to create data augmentations.

Ensure that **MySQL Cloud** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. Check the port number for your MySQL Cloud database and create a service request with server host and port details to enable network connectivity to the MySQL server.
2. In Fusion Data Intelligence, create the MySQL Cloud database connection using these instructions:
   a. In Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select **MySQL Cloud** as the connection type.

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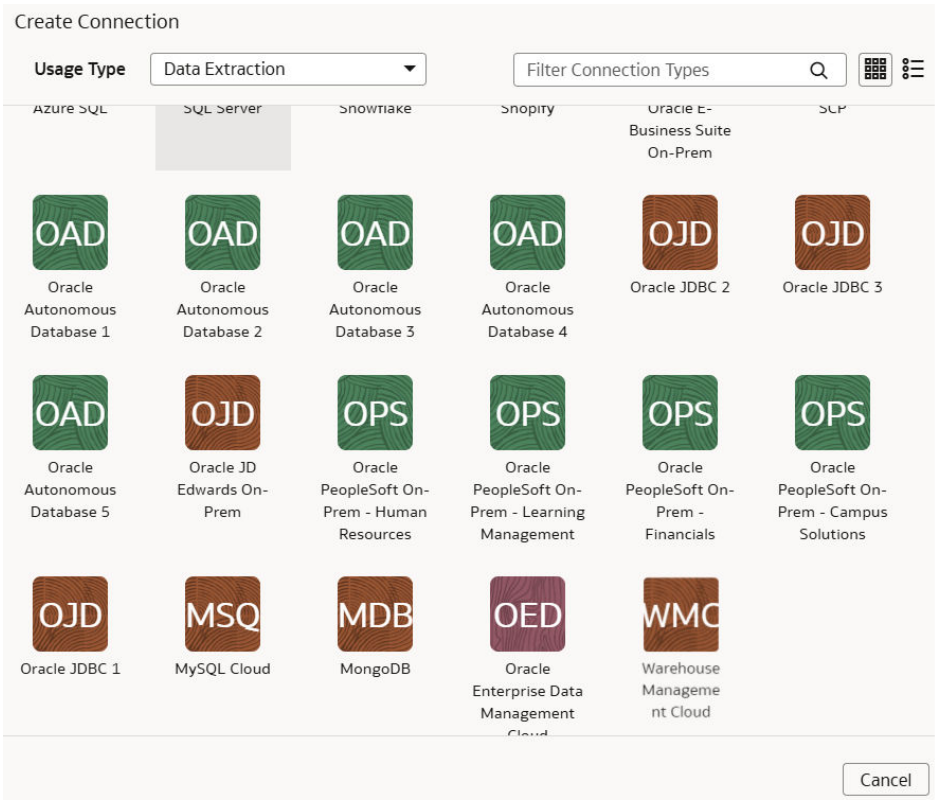

e. In the dialog for the MySQL Cloud database connection, provide these details:

- **Host Name**: Enter the host name of MySQL server such as `100.111.252.64`
- **Port Number**: Enter the port number where the server is listening such as `3306`
- **Database**: Enter the database name you need to connect to such as `airportdb`
- Credentials to access the database in **User Name** and **Password**
- **Last Update Date Column Pattern**: Enter format such as `"%mo%fie%te%"`

> **Note**
>
> If column name matches with pattern provided, then Fusion Data Intelligence marks the column name with `isLastUpdateDate = true` and uses it for the incremental extract. For example, if pattern provided is `"%mo%fie%te%"`, then the column name `modifiedDate` is marked as `isLastUpdateDate = true`.

- **Initial Extract Date Column Pattern**: Enter format such as `"%cr%ted%te%"`

> **Note**
>
> If column name matches with pattern provided, then Fusion Data Intelligence marks the column name with `isCreationDate = true` and uses it for the initial extract date extraction. For example, if pattern provided is: `"%cr%ted%te%"`, then the column name `createdDate` is marked as `isCreationDate = true`.

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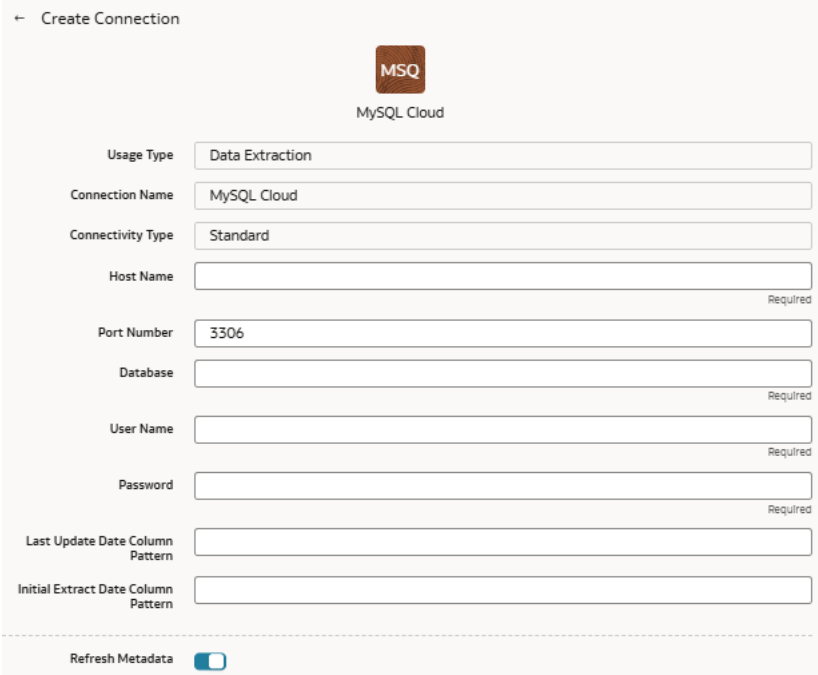

f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for MySQL Cloud database unless you perform a metadata extract.

g. Click **Save**.

3. On the Manage Connections page, select **Actions** for the MySQL Cloud database connection and then select **Test Connection**.
4. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

5. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the MySQL Cloud database data. Select the applicable MySQL Cloud database source tables. See Augment Your Data.

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Load Data from Salesforce into Fusion Data Intelligence

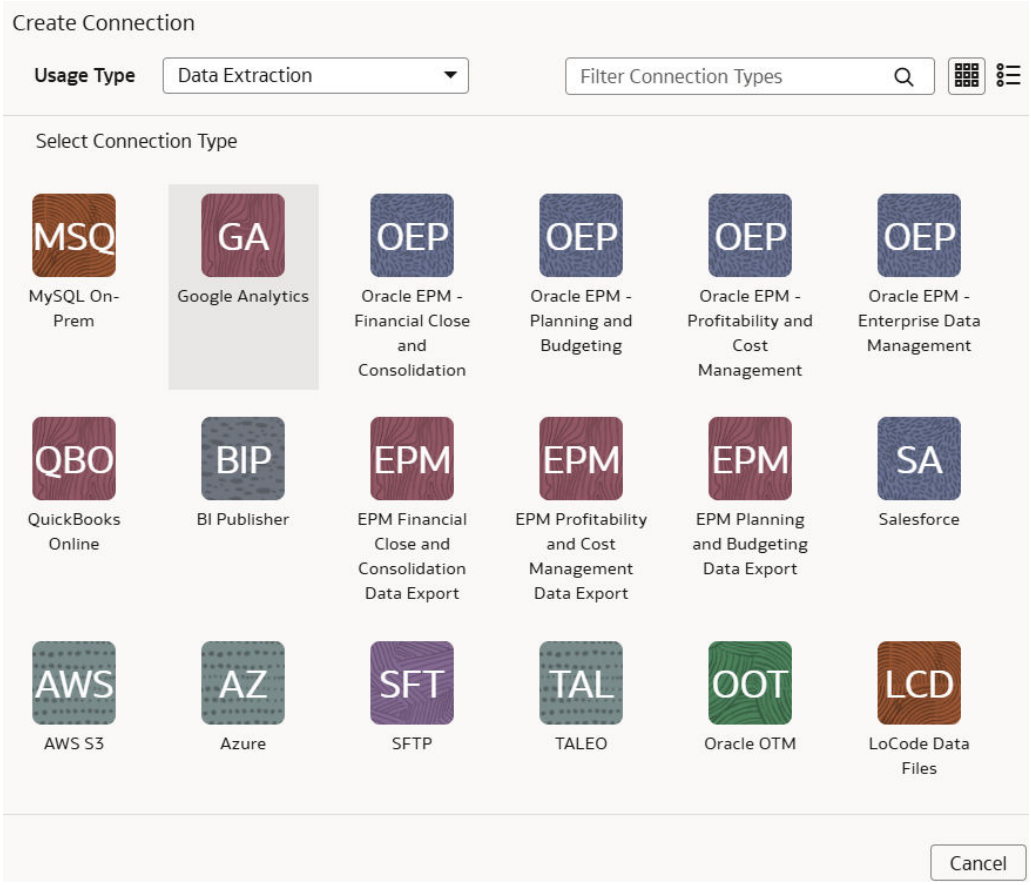
As a service administrator, you can use the Fusion Data Intelligence extract service to acquire data from the Salesforce SaaS instance and use it to create data augmentations.

1. Run the following command in your terminal to generate a keystore file:

   ```
   openssl pkcs12 -export -inkey server.key -in server.crt -name
   YOUR_KEY_NAME -passout pass:YOUR_PASSWORD -out keystorefile.p12
   ```

   Replace YOUR_KEY_NAME and YOUR_PASSWORD with your desired values, and save the generated `keystorefile.p12` file to later upload it while creating the connection to your Salesforce source.

2. In Fusion Data Intelligence, create the Salesforce data connection using these instructions:
   a. In Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select **Salesforce** as the connection type.



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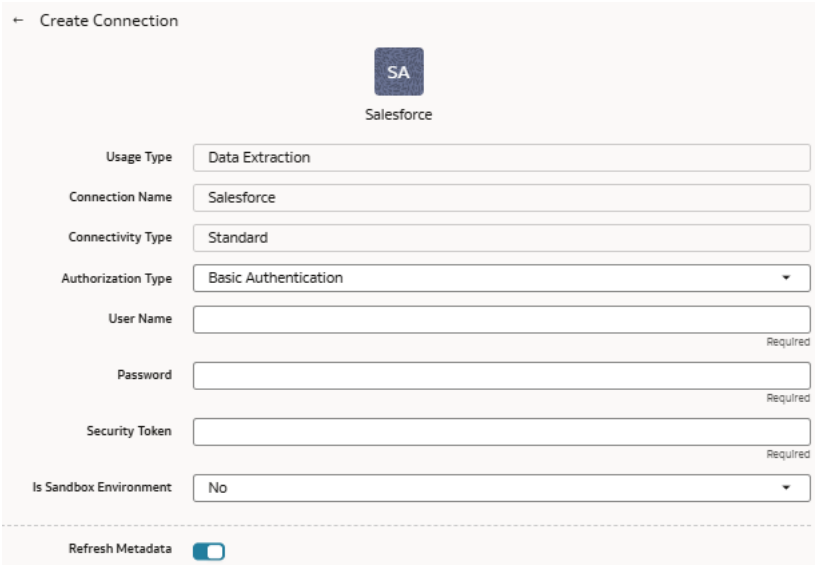
e. In the dialog box for the Salesforce connection, in **Authorization Type**, you can select **Basic Authentication** or **OAuth** as the type of authorization.

If you select Basic Authentication, then:

- Enter the credentials for your Salesforce source in **User Name** and **Password**. The user stated here must have access to all the data in the Salesforce system to extract it to the warehouse.
- Copy and paste the security token from your Salesforce account in **Security Token**. This is an alpha-numeric code and may contain special characters, however, it isn't visible. It's encrypted and shown as ….
- In **Is Sandbox Environment**, select **Yes** if your Salesforce source is a test or sandbox environment; else select **No**.

If you select **OAuth**, then enter these additional values:

- In **Client ID**, enter the unique identifier that represents the Salesforce application within the Salesforce instance and is visible when you sign into your Salesforce account.
- In **KeyStore File**, provide the file that is in a PKCS#12 file format (denoted by .p12 extension), which can contain both private keys and certificates (such as the public key of the server or the signing certificate).
- In **KeyStore Password**, enter the password for accessing the specified keystore file.
- In **Keystore Key name**, provide the unique name (identifier or alias) of the specified keystore file.



f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

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> **Note**
>
> You can’t create augmentations for Salesforce unless you perform a metadata extract.

g. Click **Save**.

3. On the Manage Connections page, select **Actions** for the Salesforce connection and then select **Test Connection**.
4. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

5. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Salesforce data. Select the applicable Salesforce source tables. See Augment Your Data.

Load Data from Shopify into Fusion Data Intelligence

As a service administrator, you can use the Fusion Data Intelligence extract service to acquire data from the Shopify SaaS instance and use it to create data augmentations for various Enterprise Resource Planning and Supply Chain Management use cases.

Ensure that **Shopify** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. In Fusion Data Intelligence, create the Shopify data connection using these instructions:
   a. In Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select **Shopify** as the connection type.

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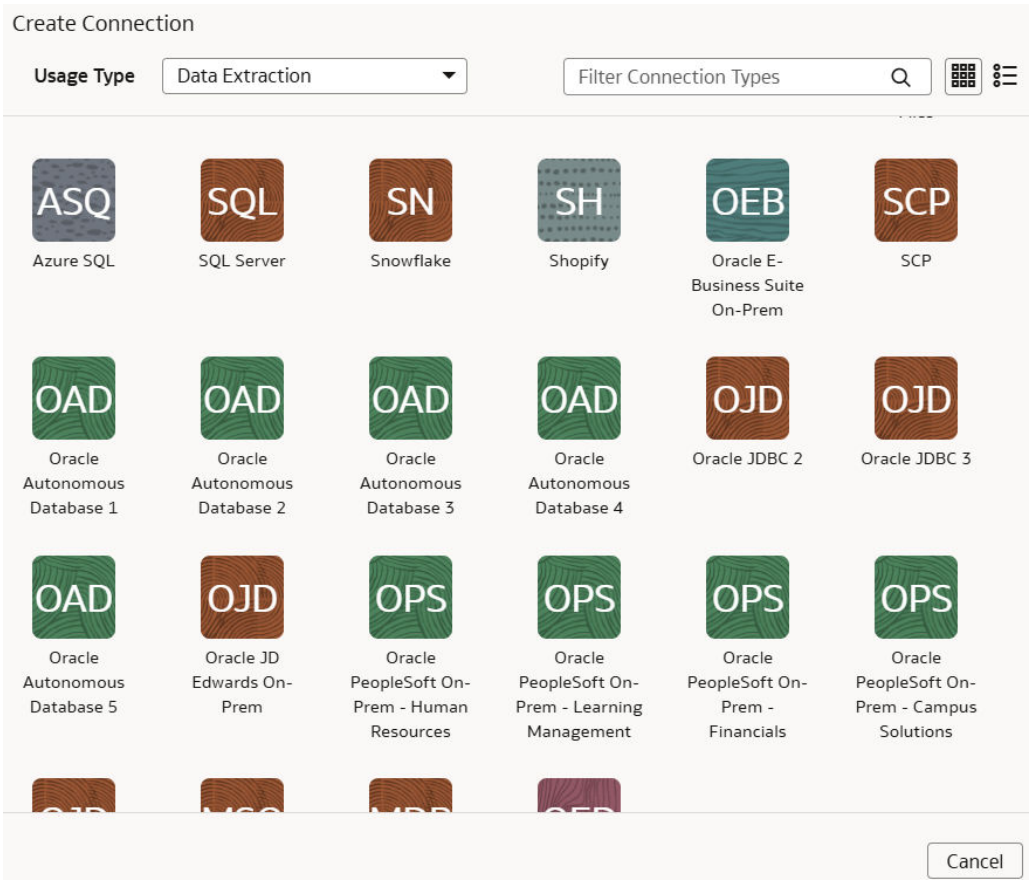

e. In the dialog for the Shopify connection, enter applicable token value in **Access Token**, **Store Name** such as myfawteststore.myshopify.com, and `True` in **Bulk Extract**.

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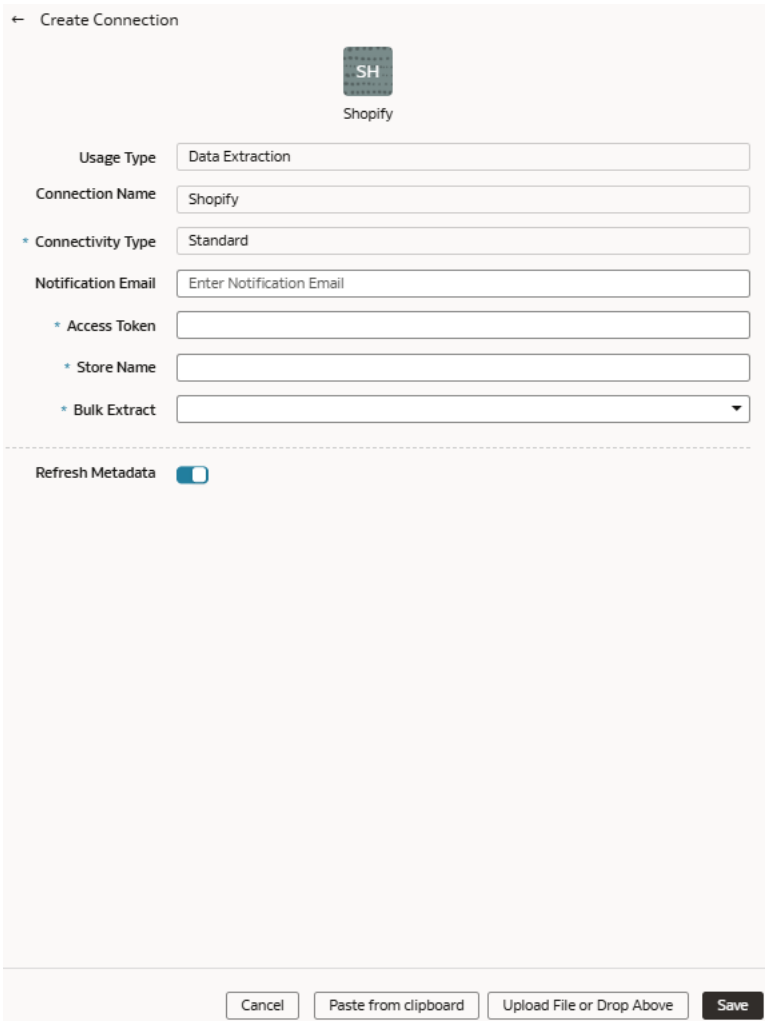

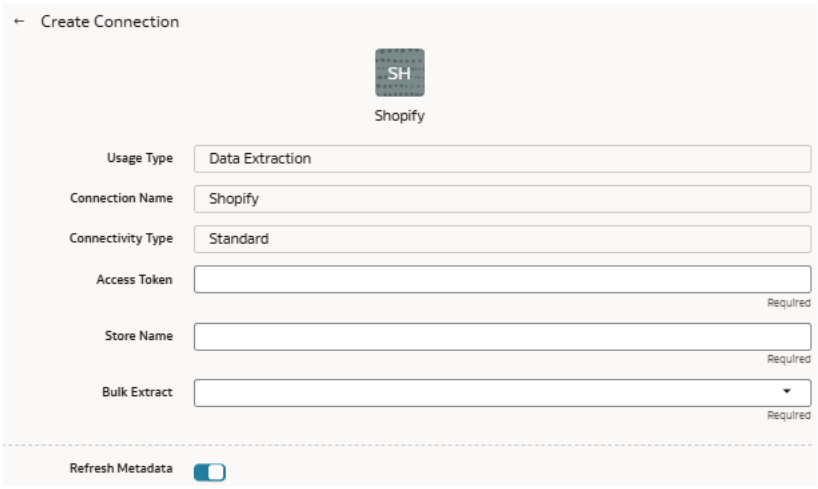

f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

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> **Note**
>
> You can’t create augmentations for Shopify unless you perform a metadata extract.

g. Click **Save**.

2. On the Manage Connections page, select **Actions** for the Shopify connection and then select **Test Connection**.
3. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

4. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Shopify data. Select the applicable Shopify source tables. See Augment Your Data.

Load Data from Oracle Autonomous Database into Oracle Fusion Data Intelligence (Preview)

As a service administrator, you can use the Oracle Fusion Data Intelligence extract service to acquire data from Oracle Autonomous Database and use it to create data augmentations.

You can create connections to five autonomous databases. Depending on the number of connections, ensure that options such as **Oracle Autonomous Database 1**, **Oracle Autonomous Database2** are enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

> **Note**
>
> Currently, you can't connect to a private autonomous transaction processing database (ATP database).

1. In Oracle Fusion Data Intelligence, create the autonomous database connection using these instructions:
   a. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and depending on the number of connections, select options such as **Oracle Autonomous Database 1**, or **Oracle Autonomous Database2** as the connection type.

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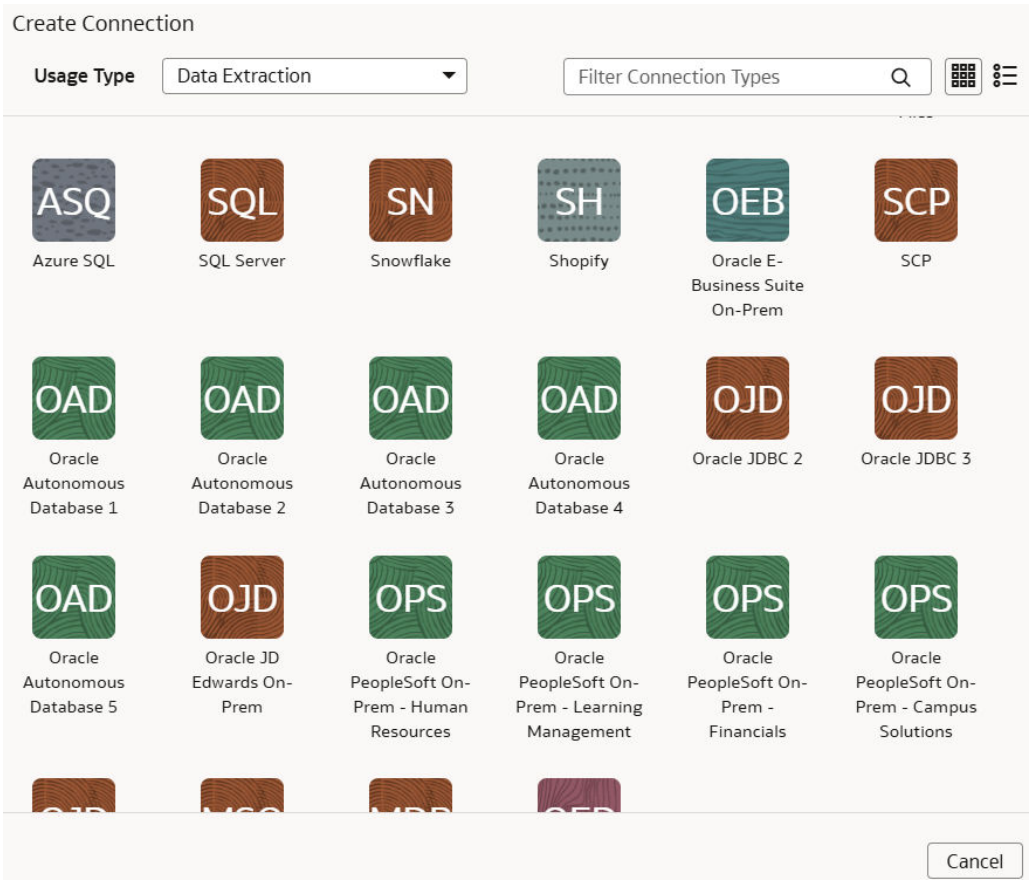
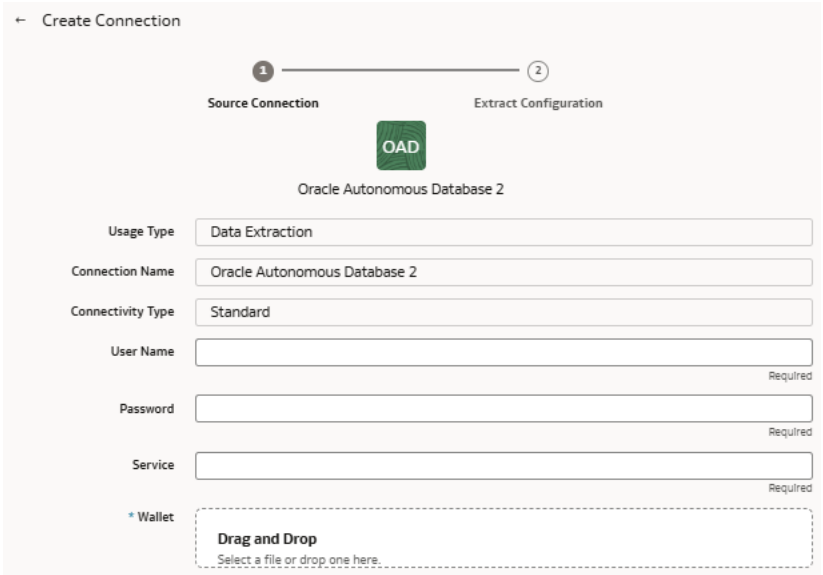


e. In the dialog for the Oracle Autonomous Database connection, provide these details in the **Source Connection** tab and then click **Save and Next**:

- Enter the credentials to access the database in **User Name** and **Password**.
- Enter the database service details in **Service**.
- In **Wallet**, drag and drop the database wallet details.



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f. In the dialog for the Oracle Autonomous Database connection, provide these details in the **Extract Configuration** tab and click **Save**:

- In **Incremental Strategy**, select the incremental strategy (Flashback, Golden Gate, or RowSCN) that is compatible with your database configuration.
- In **Initial Extract Date Column Pattern**, provide the initial extract date pattern that matches the pattern in your source.
- In **Last Update Date Column Pattern**, provide the last update date pattern that matches the pattern in your source.
- In **Inclusion List**, select **Yes** or **No** to include the mentioned list of datastores in the incremental strategy or not.
- In **List of Incremental datastores to include/exclude**, enter a comma separated list of datastores names.

  If you don't provide, then the connector uses the incremental strategy for all the datastores. If you provide and IS_INCLUSION_LIST=true, only the provided list use the specified incremental strategy. If provided and IS_INCLUSION_LIST=false, the provided list won't use the incremental strategy. If INCREMENTAL_STRATEGY property is available, then the connector uses IS_INCLUSION_LIST and INCR_DATASTORES_LIST for all strategies. If not available, then for FLASHBACK the connector checks if ENABLE_FLASHBACK_INCREMENTAL and FBA_INCR_DATASTORES_EXCEPTION_LIST is provided and for ROWSCN, it checks if ENABLE_ORA_ROWSCN_INCREMENTAL and ROWSCN_INCR_DATASTORES_EXCEPTION_LIST is provided.
- In **Case sensitive Data Stores**, select **Yes** or **No**.
- In **Schema Name**, enter the schema name to extract data from.
- In **Data Store Name Pattern**, specify the name pattern of the data stores that you want extracted. If you provide this value, then the connector extracts only data stores matching the pattern.
- Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection. You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for autonomous database unless you perform a metadata extract.

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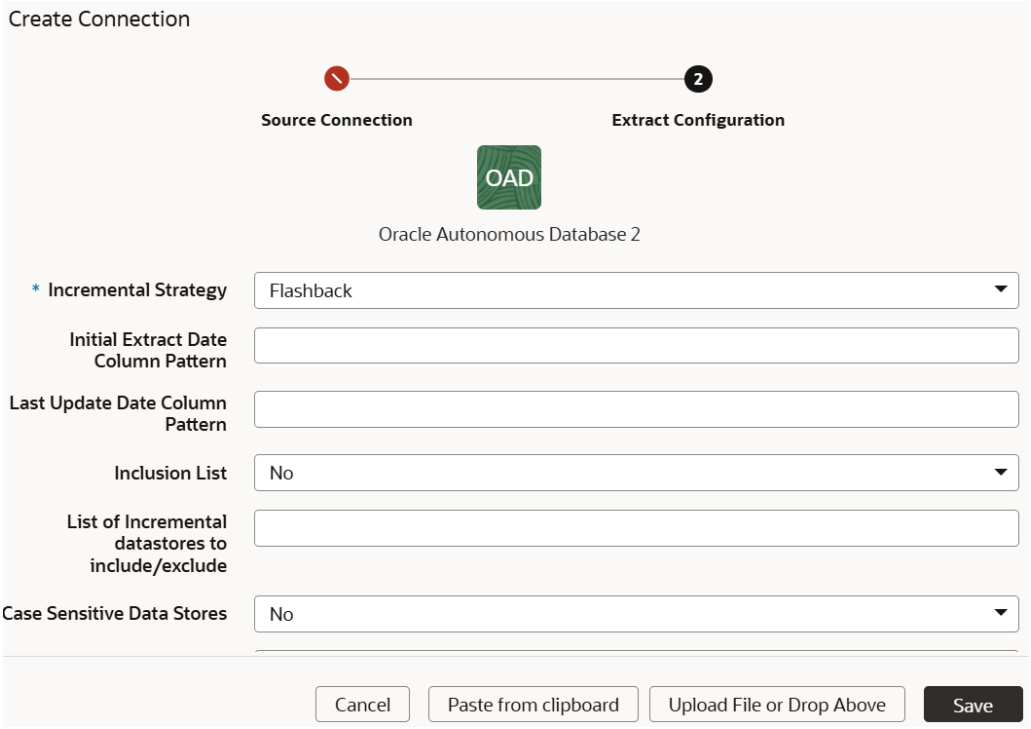

2. On the Manage Connections page, select **Actions** for the autonomous database connection and then select **Test Connection**.
3. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

4. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the autonomous database data. Select the applicable autonomous database source tables. See Augment Your Data.

Load Data from Snowflake into Oracle Fusion Data Intelligence (Preview)

As a service administrator, you can use the Oracle Fusion Data Intelligence extract service to acquire data from a Snowflake instance.

You can later use this data to create data augmentations for various Enterprise Resource Planning and Supply Chain Management use cases. Establish the connection from Fusion Data Intelligence to your Snowflake instance to start data acquisition followed by augmentation.

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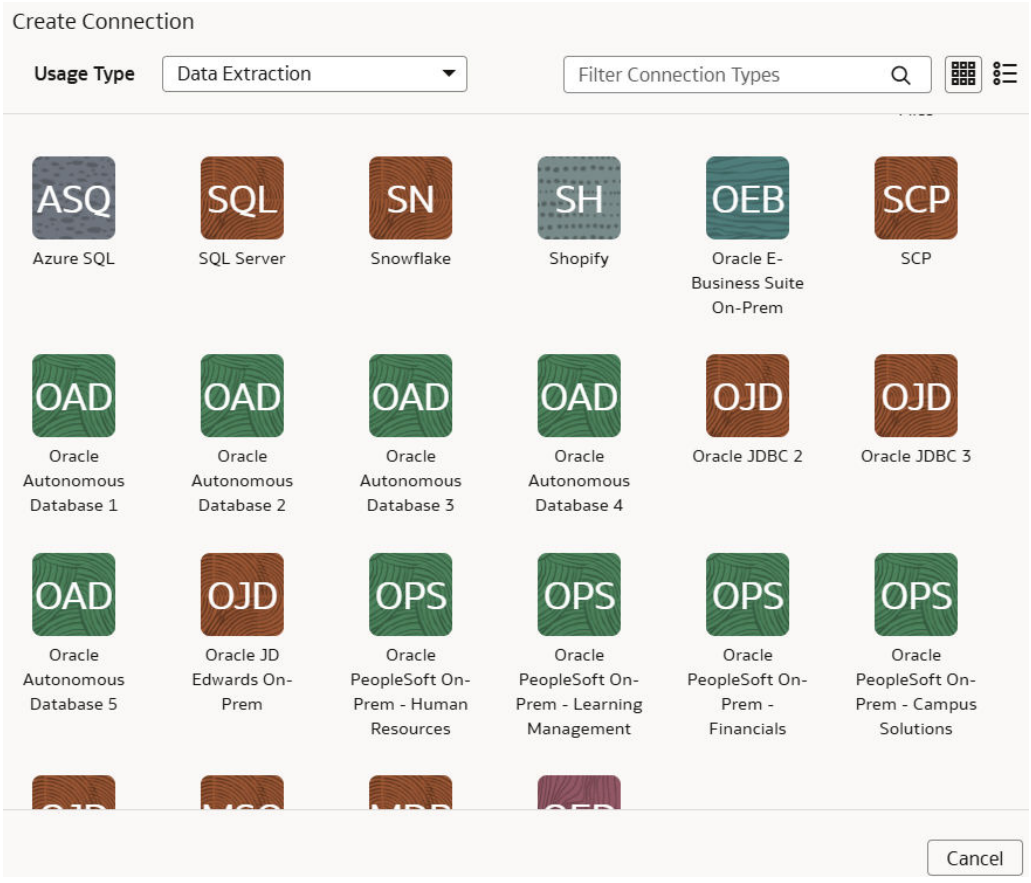
> **Note**
>
> Snowflake some times requires API calls to originate from a known IP address. If you're experiencing connection issues due to an unauthorized IP, then submit an Oracle Support ticket to obtain the necessary Oracle IP address for your Snowflake allowlist.

Ensure that **Snowflake** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. In Fusion Data Intelligence, create the Snowflake data connection:
   a. In Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select **Snowflake** as the connection type.



   e. In **Create Connection**, enter these details and then click **Save**:
      - **Auth Schema**: Select the applicable option:
        - **Basic Authentication** to establish the connection and provide the username and password.

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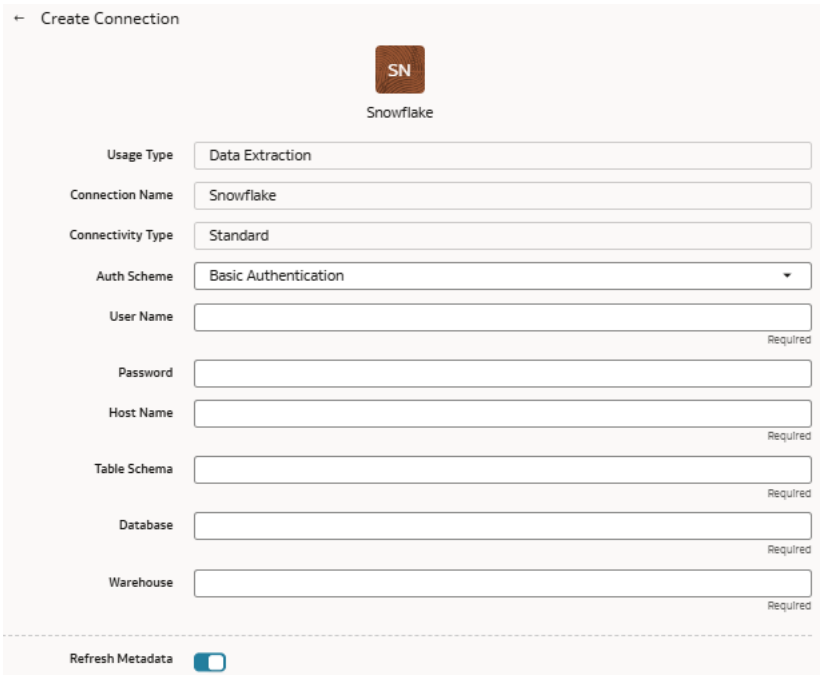
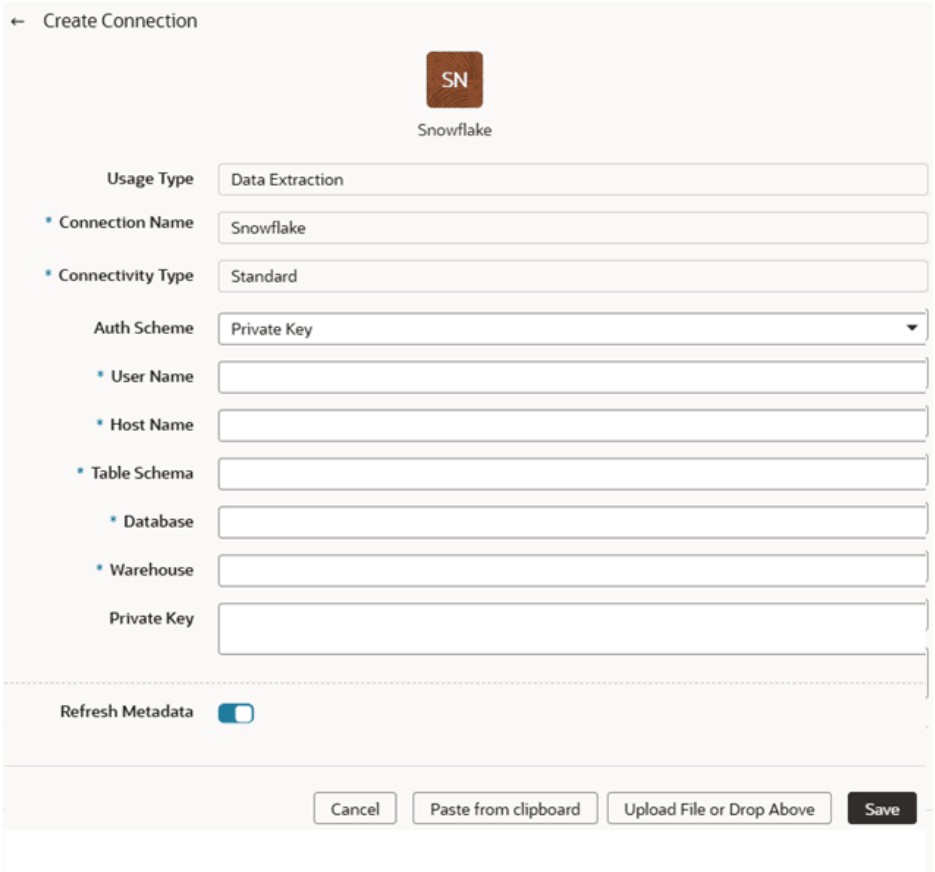


– **Private Key** if you're using token-based authentication.



- **Host Name**: Complete host name of your Snowflake instance.
- **Table Schema**: Your Snowflake table schema such as TPCH_SF1.

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- **Database**: Mentioned in your Snowflake account under **Data**.
- **Warehouse**: The compute resources in your Snowflake instance that you can find by running SHOW WAREHOUSES [LIKE '<*pattern*>']. See SHOW WAREHOUSES.
- **Private Key**: Generate the Private Key in Snowflake, if you don't have one already, and paste it here. See Generate the Private Key.
- **Token URL**: OAuth token endpoint used to obtain access tokens. This field is visible when you select OAuth in Auth Schema.
- **Client ID**: Identifier issued to your application for OAuth authentication. This field is visible when you select OAuth in Auth Schema.
- **Client Secret**: Secret key used to authenticate your application during token requests. This field is visible when you select OAuth in Auth Schema.
- **Scope**: OAuth permission scope requested from the identity provider for Snowflake access. This field is visible when you select OAuth in Auth Schema.

f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for Snowflake unless you perform a metadata extract.

g. Click **Save**.

2. On the Manage Connections page, select **Actions** for the Snowflake connection and then select **Test Connection**.
3. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the data augmentations and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

4. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Snowflake data. Select the applicable Snowflake source tables. See Augment Your Data.

Load Data from Taleo into Fusion Data Intelligence (Preview)

As a service administrator, you can use the Fusion Data Intelligence extract service to acquire data from the Taleo instance and use it to create data augmentations for various Enterprise Resource Planning and Supply Chain Management use cases.

Ensure that **Taleo** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

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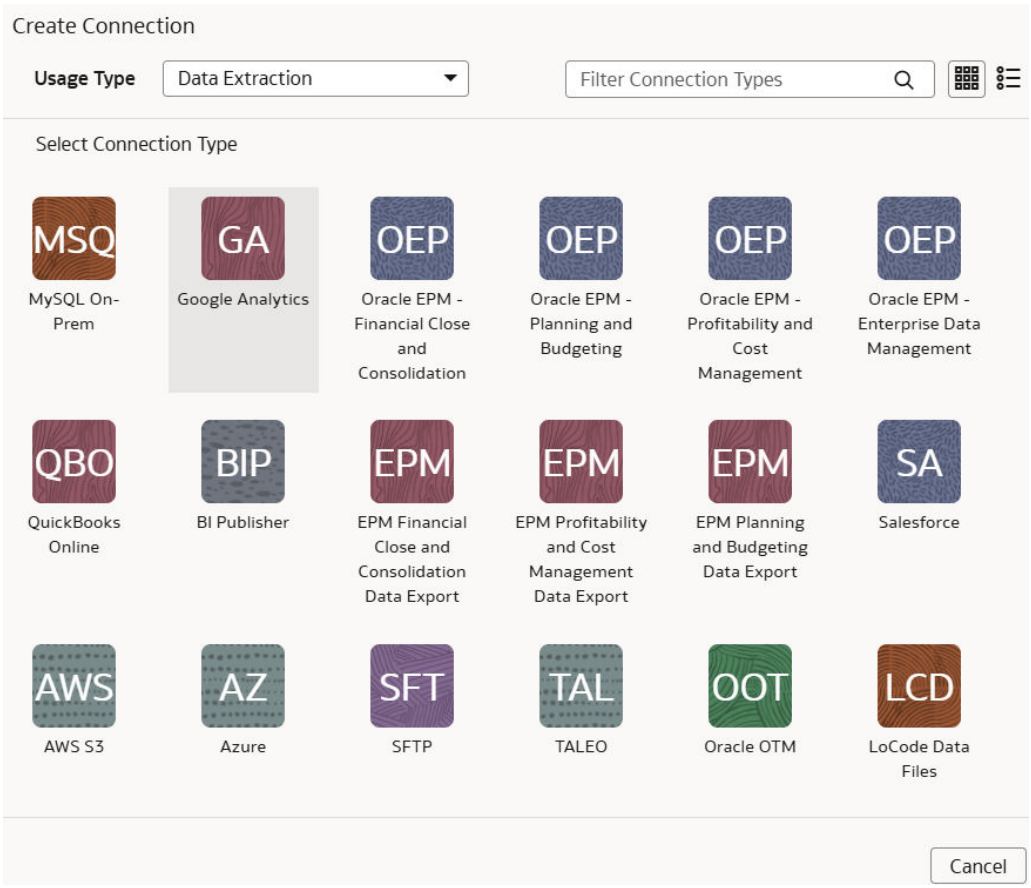
1. In Fusion Data Intelligence, create the Taleo data connection using these instructions:
   a. In Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select **Taleo** as the connection type.



   e. In **Connectivity Type**, enter the host name of your Taleo instance in **Host Name**, and credentials for your Taleo source in **User Name** and **Password**.

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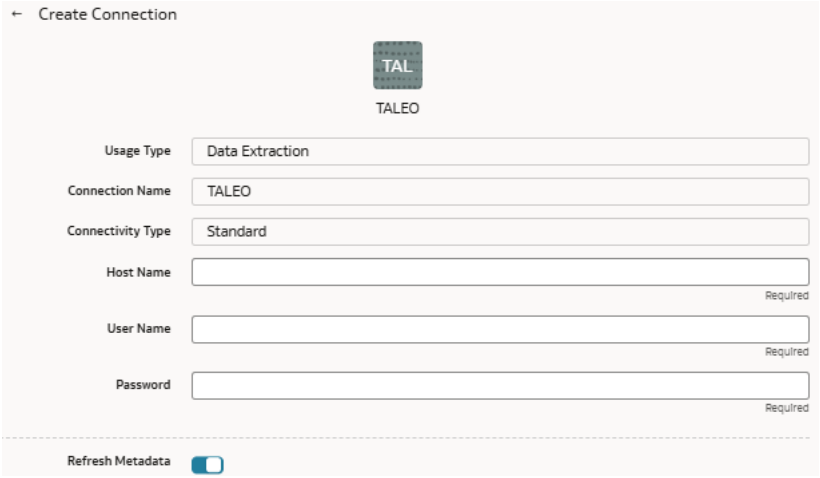

f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for Taleo unless you perform a metadata extract.

g. Click **Save**.

2. On the Manage Connections page, select **Actions** for the Taleo connection and then select **Test Connection**.
3. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

4. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Taleo data. Select the applicable Taleo source tables. See Augment Your Data.

Load Data from Oracle Analytics Publisher into Fusion Data Intelligence

As a service administrator, you can use the Fusion Data Intelligence extract service to acquire data from the Oracle Analytics Publisher reports and use it to create data augmentations for various use cases.

Currently, the Oracle Analytics Publisher connector only supports:

- The Oracle Analytics Publisher in Oracle Fusion Cloud Applications for data augmentation.

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- Only those reports that complete within the Oracle Analytics Publisher report execution timeout limit that's typically 300 seconds.
- The connector only supports CSV file formats with a comma-separated delimiter. Other delimiters aren't currently supported.

The Oracle Analytics Publisher connector workflow must observe the security rules of Oracle Fusion Cloud Applications. You must ensure that the password rotation and update are done on time before executing the Oracle Analytics Publisher connector pipeline. Otherwise, those pipeline refreshes hang and eventually get deleted, and the data source is disabled until you update the password and resubmit the refresh request.

Ensure that **Oracle Analytics Publisher** is enabled on the Enable Features page prior to creating this connection. See Enable Generally Available Features.

1. In Oracle Analytics Publisher, build a comma separated values (CSV) report for the targeted tables. See Create Reports and Generate CSV Output.
2. In Fusion Data Intelligence, create the data connection to the Oracle Analytics Publisher reports using these instructions:
   a. In Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select **Oracle Analytics Publisher** as the connection type.
   e. In the dialog for the Oracle Analytics Publisher connection, provide these details in **Source Connection** and then click **Save and Next**:
      - Host name of the Oracle Analytics Publisher instance in **Host Name**.
      - Credentials to access your Oracle Analytics Publisher instance in **User Name** and **Password**
   f. In the dialog for the Oracle Analytics Publisher connection, provide these details in **Extract Configuration** and then click **Save**:
      - In **Reports Configuration**, provide the path of the report in Oracle Analytics Publisher using the `https://<server:port>/xmlpserver/<ReportDirectory>/<ReportName>.xdo format` and:
        – Select **Run Asynchronously** if the report takes a long time to execute.
        – Select **Run In Chunk Mode** if the report has huge data and can potentially time out. With this option, you can specify chunk filters such as “chunk days” to prevent timeouts for the Oracle Analytics Publisher reports with large data sets.

        > **Note**
        >
        > You must ensure that the Oracle Analytics Publisher reports have the appropriate "where" clause filter to apply the chunking filter. Also, ensure that the startDate and endDate parameters are defined for the report with value as `__fromrangedate__` and `__torangedate__`.

        – Select **Download in Chunk Mode** if the report has a large volume of data (more than 7 MB in size). This option enables you to download the report in chunks of data.

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- If the report has parameters defined, then click **Add** to provide the name and value of the parameter. For reports with list of values (LOV) parameters, you can enter comma-separated parameter values to return data from various categories.

> **Note**
>
> "ALL" isn't a supported value for the parameter.

- For **CSV Date Format** and **CSV Timestamp Format**, see About Date and Timestamp Formatting for CSV File-based Extractors.

> **Note**
>
> Ensure that the date format used in Oracle Analytics Publisher and Fusion Data Intelligence match.

g. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can’t create augmentations for the Oracle Analytics Publisher reports unless you perform a metadata extract.

h. Click **Save**.

3. On the Manage Connections page, select **Actions** for the Oracle Analytics Publisher connection and then select **Test Connection**.
4. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the data augmentations and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

5. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Oracle Analytics Publisher reports data. Select the applicable Oracle Analytics Publisher source tables. See Augment Your Data.

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Load Data from Oracle Transportation Management Cloud Service into Oracle Fusion Data Intelligence (Preview)

As a service administrator, you can use the Oracle Fusion Data Intelligence extract service to acquire data from an Oracle Transportation Management Cloud Service SaaS instance.

You can later use this data to create data augmentations for various Enterprise Resource Planning and Supply Chain Management use cases. Establish the connection from Fusion Data Intelligence to your Oracle Transportation Management Cloud Service instance to start data acquisition followed by augmentation.

> **Note**
>
> Oracle Fusion SCM Analytics is a prerequisite to use the "Oracle Transportation Management" connector.

1. Create a confidential application in Oracle Identity Cloud Service. See IDCS Configuration.
2. In Oracle Transportation Management Cloud Service, create a user and assign the "Integration" role using these instructions:
   a. Navigate to the User Manager with DBA.Admin privileges and click **New** in User Finder.
   b. In **User Name**, enter a name of your choice.
   c. Enter the client ID from the Oracle Identity Cloud Service confidential application in **Nickname**.
   d. In **Domain Name**, enter the name of the target domain.
   e. Enter a compliant **Password** and the password confirmation.
   f. In **User Role ID**, select **INTEGRATION**.
   g. In **Access Control List** add the list named **Data Replication Service - Rest** with the **Granted** option selected.
   h. Select **Finished**.
3. Obtain the OAuth 2 client credentials from your Oracle Transportation Management Cloud Service instance to provide while creating the data connection. See OAuth 2.
4. In Fusion Data Intelligence, enable **Oracle Transportation Management** on the Enable Features page. See Make Preview Features Available.
5. In Fusion Data Intelligence, create the Oracle Transportation Management Cloud Service data connection:
   a. In Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select **Oracle Transportation Management** as the connection type.

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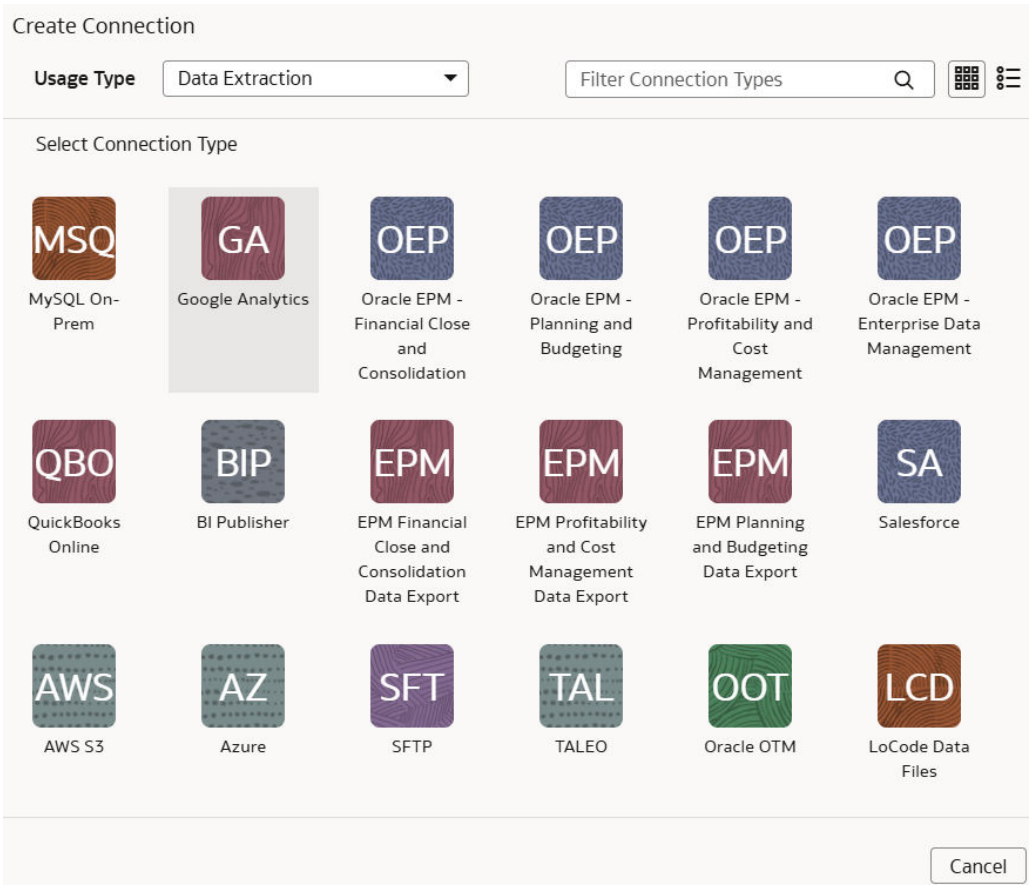

e. In the dialog for the Oracle Transportation Management Cloud Service connection, enter these details and then click **Save**:

- **Scope**: The scope name defined in your Oracle Transportation Management Cloud Service's Oracle Identity Cloud Service application's configuration.
- **Token URL**: The URL from which to obtain the access token. See Runtime Configuration.
- **URL**: Source application URL (hostname and protocol of the Oracle Transportation Management Cloud Service instance).
- **Client ID**: The unique client identifier generated during OAuth registration process.
- **Client Secret**: The client secret generated during the OAuth registration process (a private key similar to a password that is generated when registering your Oracle Transportation Management Cloud Service's Oracle Identity Cloud Service application).
- Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection. You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for Oracle Transportation Management Cloud Service unless you perform a metadata extract.

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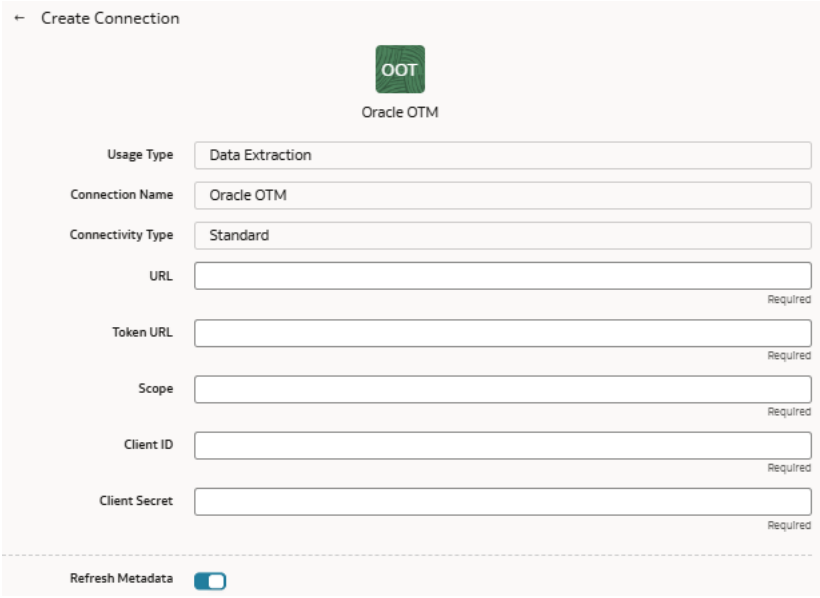

6. On the Manage Connections page, select **Actions** for the Oracle Transportation Management Cloud Service connection and then select **Test Connection**.
7. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

8. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Oracle Transportation Management Cloud Service data. Select the applicable Oracle Transportation Management Cloud Service source tables. See Augment Your Data.

Load Data from Oracle Warehouse Management Cloud into Oracle Fusion Data Intelligence (Preview)

As a service administrator, you can use the Oracle Fusion Data Intelligence extract service to acquire data from Oracle Warehouse Management Cloud and use it to create data augmentations.

Ensure that **Oracle Warehouse Management Cloud** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

> **Note**
>
> Oracle Fusion SCM Analytics is a prerequisite to use the Oracle Warehouse Management Cloud connector.

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1. In Oracle Identity Cloud Service, create a confidential application.
   a. In Oracle Warehouse Management Cloud Service, create an user.

      This user will be configured in Oracle Fusion Data Intelligence to extract the data. For the data extract user, ensure the following:

      - **Active** and **Asynchronous Data Extract Flag** are selected.
      - Has access to the WMS REST API's:
        - "lgfapi_read_access" – GET, HEAD
        - "lgfapi_create_access" – POST
        - "lgfapi_update_access" – PATCH
        - "lgfapi_delete_access" – DELETE
      - Has the groups required to use the Async REST API.
      - Has OAuth or Basic Authentication set up.

   b. Set the following values for the new application, note down the Client ID and Client Secret, and then click **Save**.

      - Name – Application Name (WMSExtractAuth)
      - Client Type – Public
      - Authorization grant type- Resource owner password-based

      > **Note**
      >
      > The Client ID, Client Secret, and other Information in this screen will be used for Oracle Fusion Data Intelligence WMS Connector configuration. After you save the application, the client secret will be hashed and you won't be able to copy and use it in Oracle Fusion Data Intelligence.

2. In Oracle Fusion Data Intelligence, create the Oracle Warehouse Management Cloud data connection using these instructions:
   a. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under Application Administration.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type**, and then select **Warehouse Management Cloud** as the connection type.
   e. In the dialog for the Oracle Warehouse Management Cloud connection, provide these details in Source Connection and then click **Save and Next**:

      - **Authorization Type**:
        - If you select **Basic Authentication**, provide these details:
          * **URL**: Enter the URL of your Oracle Warehouse Management Cloud instance in this format: `*protocol://domain/environment/app/lgfapi version/lgfapi module/resourcepath*`. For example, `https://xxxxx.wms.ocs.oraclecloud.com/myenv/wms/lgfapi/v10/entity`.
          * **User Name** and **Password**: Enter the credentials for your Oracle Warehouse Management Cloud instance.

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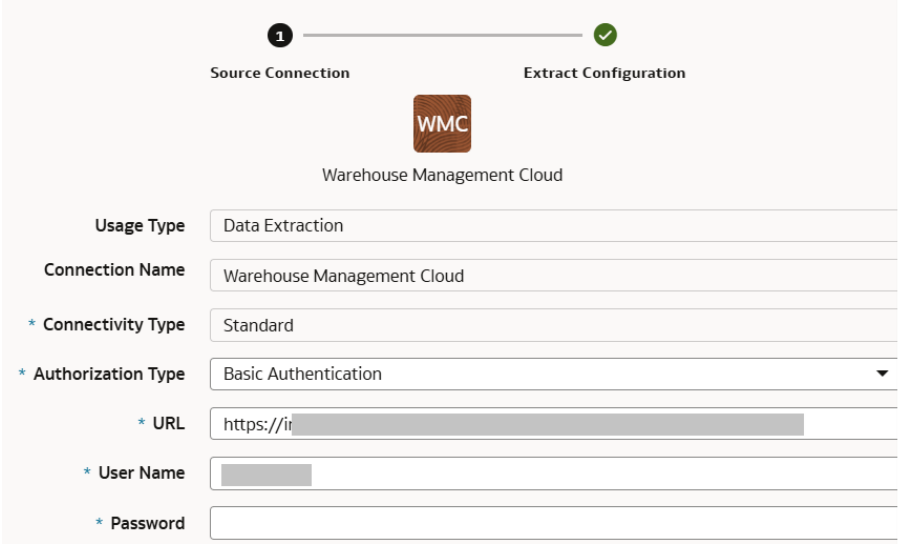
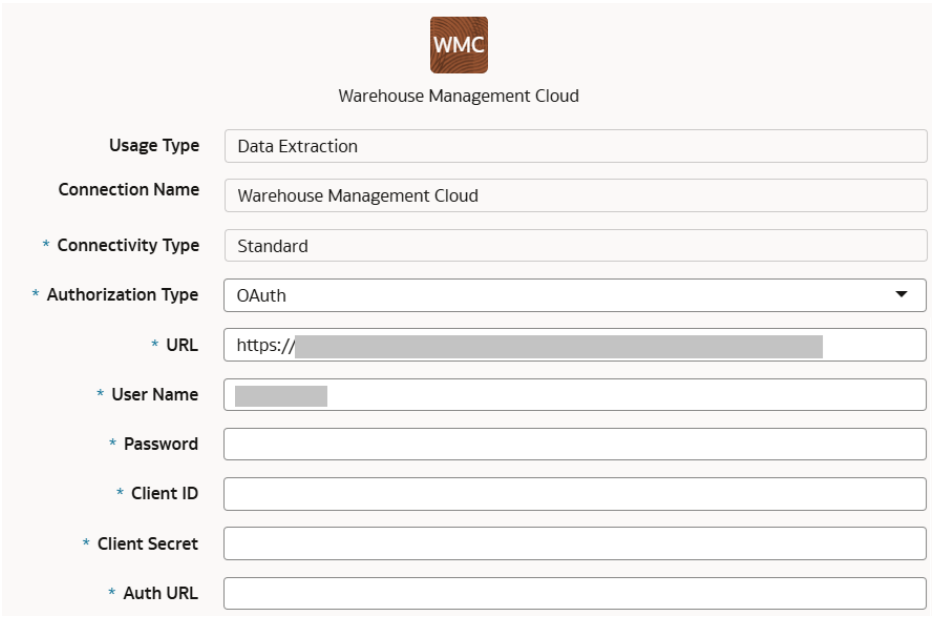


- If you select **OAuth**, provide these additional details:
  - **Client ID**: Enter the Client ID for OAUTH.
  - **Client Secret**: Enter the client secret for OAUTH.
  - **Auth URL**: OAUTH Token URL such as `https://xxxxx.wms.ocs.oraclecloud.com/myenv/wms/lgfapi/api/oauth2/token/`



f. In the dialog for the Oracle Warehouse Management Cloud connection, in **Extract Configuration**, verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

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> **Note**
>
> You can't create augmentations for Oracle Warehouse Management Cloud unless you perform a metadata extract.

No other information required for Extract Configurations.

3. On the Manage Connections page, select **Actions** for the Oracle Warehouse Management Cloud connection and then select **Test Connection**.
4. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

5. Set up the pipeline parameters. See Set Up the Pipeline Parameters.
6. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Oracle Warehouse Management Cloud data. Select the applicable Oracle Warehouse Management Cloud source tables.

   See Augment Your Data.

   a. On the Data Configuration page, under Configurations, click **Data Augmentation**, click **Create**, and then click **Augmentation**.
   b. In the Data Augmentation wizard, select the following for data augmentation:
      - Augmentation Type - Select **Dataset**
      - Source Dataset Type – Select **Custom Attribute**
      - Source Table Type – Select **System Provided**
      - Source Type – Select an object
   c. Select the attributes and column options.
   d. Provide the following details and click **Finish**.
      i. Provide a name and description for your augmentation.
      ii. Enter a suffix for the target table name.
      iii. Specify the schedule.

Load Data from Fusion Supply Chain Planning into Oracle Fusion Data Intelligence (Preview)

As a service administrator, you can use the Oracle Fusion Data Intelligence extract service to acquire data from a Fusion Supply Chain Planning instance.

You can later use this data to create data augmentations for various Enterprise Resource Planning and Supply Chain Management use cases. Establish the connection from Fusion Data Intelligence to your Fusion Supply Chain Planning instance to start data acquisition followed by augmentation.

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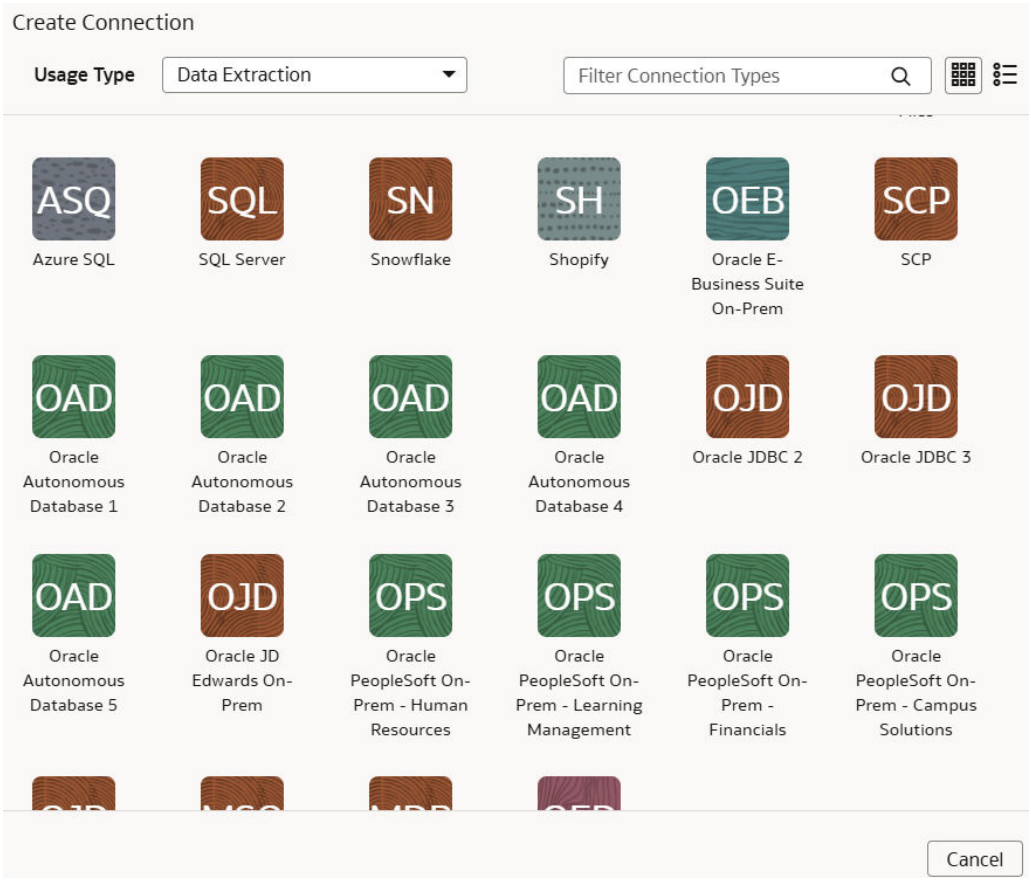
Ensure that **Fusion Supply Chain Planning** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

> **Note**
>
> Oracle Fusion SCM Analytics is a prerequisite to use the Fusion Supply Chain Planning connector.

1. In Fusion Data Intelligence, create the Fusion Supply Chain Planning data connection:
   a. In Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select **Fusion Supply Chain Planning** as the connection type.



   e. In the **Create Connection** dialog, enter these details and then click **Save**:
      - **SCP Plan Names**: The applicable plan names in your Fusion Supply Chain Planning instance.

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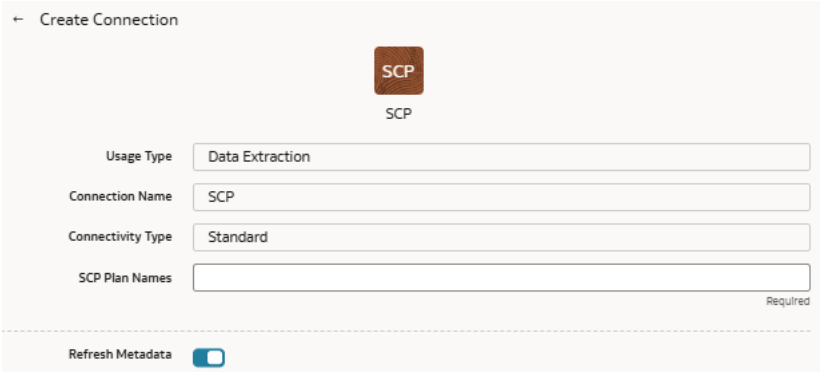
> **Note**
>
> If you have multiple Supply Chain Plan names, enter them in a comma-separated list with no spaces between plan names.



f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

   You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can’t create augmentations for Fusion Supply Chain Planning unless you perform a metadata extract.

2. On the Manage Connections page, select **Actions** for the Fusion Supply Chain Planning connection and then select **Test Connection**.
3. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

4. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the Fusion Supply Chain Planning data. Select the applicable Fusion Supply Chain Planning source tables. See Augment Your Data.

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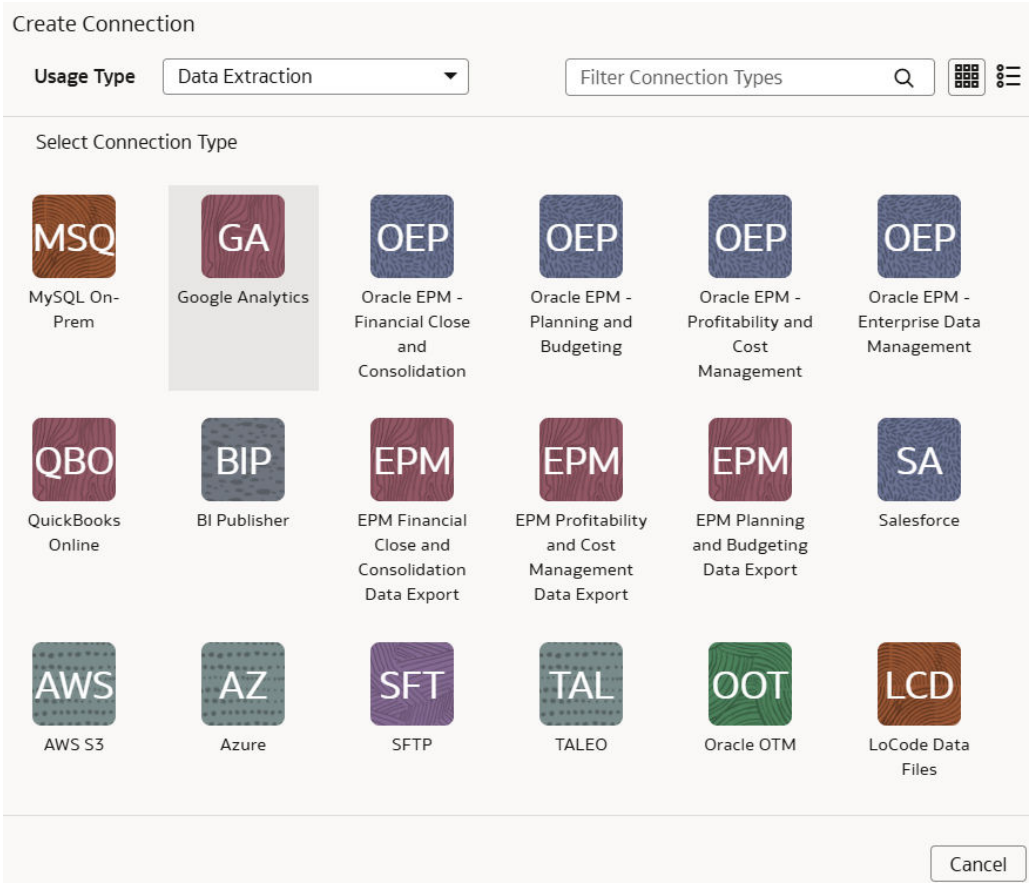
Load Data from QuickBooks Online into Oracle Fusion Data Intelligence (Preview)

As a service administrator, you can use the Oracle Fusion Data Intelligence extract service to acquire data from QuickBooks Online and use it to create data augmentations.

Ensure that **QuickBooks Online** is enabled on the Enable Features page prior to creating this connection. See Make Preview Features Available.

1. In Oracle Fusion Data Intelligence, create the QuickBooks Online data connection using these instructions:
   a. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
   b. On the Data Configuration page, click **Manage Connections**.
   c. On the Manage Connections page, click **Create** and then click **Connection**.
   d. In Create Connection, select **Data Extraction** in **Usage Type** and then select **QuickBooks Online** as the connection type.



   e. In the dialog for the QuickBooks Online connection, enter these details and click **Save**:
      - **URL**: Enter the complete URL of your Quickbooks Online instance.
      - **Client ID**: This is the unique ID on your Quickbooks Online instance.
      - **Client Secret**: Copy and paste the entire "client secret" from your authentication.

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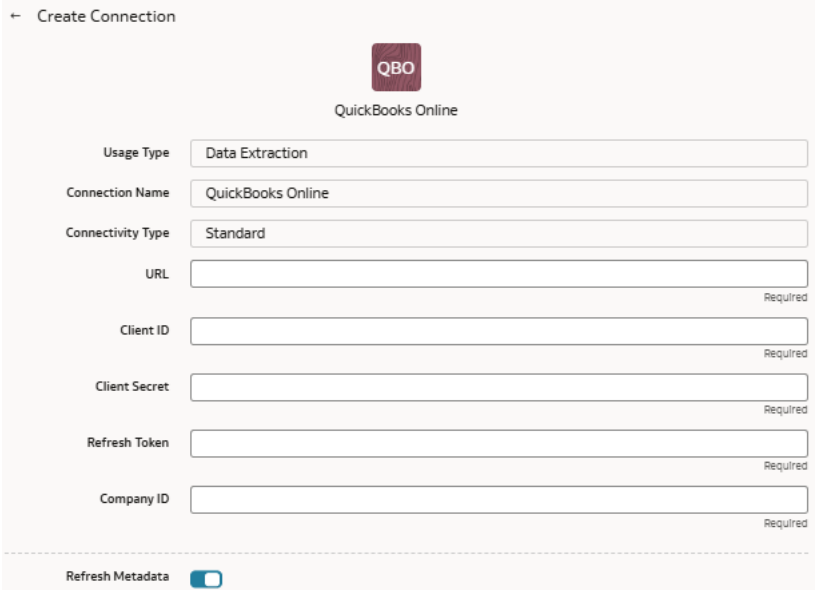
- **Refresh Token**: This token is changed by Quickbooks everyday; enter your refresh token for the day you want to execute this pipeline.
- **Company ID**: This is your company ID for the Quickbooks Online instance.



f. Verify that the **Refresh Metadata** toggle is enabled to ensure that the metadata is refreshed when you save the connection.

You can later refresh the metadata from the Actions menu on the Manage Connections page, if required.

> **Note**
>
> You can't create augmentations for QuickBooks Online unless you perform a metadata extract.

g. Click **Save**.

2. On the Manage Connections page, select **Actions** for the QuickBooks Online connection and then select **Test Connection**.
3. To delete a connection, on the Manage Connections page, click **Actions** for the applicable connection and select **Delete**.

> **Note**
>
> Ensure that you delete the functional areas, data augmentations, and data applications related to the data connection before deleting it. You can't update or load data from deleted data connections to the warehouse.

4. After the connections are successfully established, navigate to the Data Configuration page, select the connection in **Data Source**, then click the Data Augmentation tile, and create a data augmentation using the QuickBooks Online data. Select the applicable QuickBooks Online source tables. See Augment Your Data.

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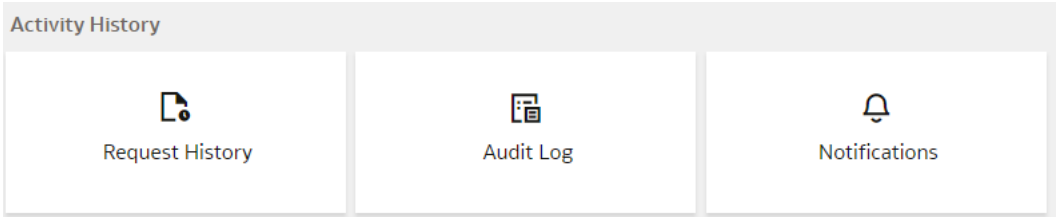
View Notifications and Emails

You can view the notifications sent by Oracle regarding various operations and the emails sent by Oracle regarding various actions taken by Oracle and actions that you must complete.

This enables you to know and take the necessary actions even if you haven't received the actual email sent to the email ID provided during instance creation.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, click **Notifications** under **Activity History**.



4. On the Notifications page, under the Notifications tab, view the notifications sent by Oracle regarding various operations such as “application upgrade” and “connection to source systems”.



5. On the Notifications page, under the Emails tab, view the emails sent by Oracle regarding various actions taken by Oracle and actions that you must complete.

Enable Event Notifications (Preview)

You can track and take actions for different requests using the Oracle Cloud Infrastructure Events generated in Oracle Fusion Data Intelligence to streamline your business operations.

Fusion Data Intelligence publishes events to the Oracle Cloud Infrastructure Audit service for application updates and data pipeline. By using the Oracle Cloud Infrastructure-managed notification services, you can customize your alerts and choose how you want to receive them, whether it's through email, slack, or other trigger downstream workflows using custom-defined functions. For example, you can receive email notifications as soon as the daily incremental refresh completes. You can receive notifications when an application update is available,

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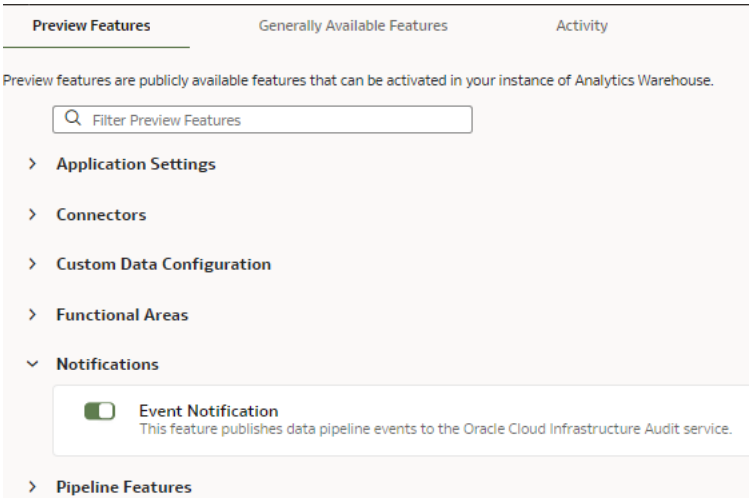
scheduled, and completed. These notifications allow you to convey the information to the analytics users.

> **Note**
>
> In case you don't get the Oracle Cloud Infrastructure event emails for a specific event such as Data Refresh, check if the Oracle Cloud Infrastructure notification rule specifies the correct compartment where the Oracle Fusion Data Intelligence instance resides.

Enable the **Event Notification** feature from the Preview tab on the Enable Features page prior to creating custom automation that sends an email for the preregistered event types. See Make Preview Features Available.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Enable Features** under **Application Administration**.
3. On the Enable Features page, under the Preview Features tab, under Notifications, select **Event Notification**.



4. Sign in to the Oracle Cloud Infrastructure Console and create a topic for the applicable preregistered event such as “FDI Data Load Complete." See Creating a Topic.
5. Subscribe to the topic that you created with your email address. See Creating a Subscription.
6. Create a rule to notify the topic when the data load completes. See Creating an Events Rule and Event Types, Attributes, and Attribute Values for Event Rules.

Schedule Frequent Data Refreshes

You can schedule frequent data refreshes to ensure that the intra-day data in functional areas, data augmentations, prebuilt and Data Augmentation scripts-based custom data applications, and warehouse tables is the latest.

The Frequent Data Refresh feature available before the Platform 25.R3 release (FDR V1) is redesigned in FDR V2, offering faster data refreshes and broader functionality. Starting with

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Platform 25.R3 release, all new Fusion Data Intelligence instances support only FDR V2. Existing customers using FDR V1 (with subscriptions ordered before September 1, 2025) may continue using it. However, Oracle strongly recommends migrating to FDR V2 to take advantage of its improved performance and expanded features.

After the Platform 25.R4 release, you won't be able to enable and disable features related to FDR V1. Usage of FDR V2 is subject to certain data processing limits. See About Data Processing Limits. If your usage needs go beyond these limits, contact Oracle Customer Support.

Topics:

- About Scheduling Frequent Data Refreshes
- Schedule Frequent Refreshes of Data with Redesigned Refresh Mechanism (Preview)
- Schedule Frequent Refreshes of Data with Original Refresh Mechanism
- Manage Frequently Refreshed Data in the Workbooks
- Top FAQs for Frequent Data Refresh

About Scheduling Frequent Data Refreshes

For Oracle Fusion Data Intelligence, you can schedule frequent data refreshes for functional areas and warehouse tables using the Frequent Data Refresh Schedule tab on the Pipeline Settings page.

The frequent data refresh capability is designed for refreshing primarily transactional data; not for a high volume of derived datasets that require aggregations, snapshots, or complex transformation logic. When you refresh certain functional areas and warehouse tables, be sure you understand which tables you can refresh or not because the selective refresh of some tables could lead to functional inconsistencies when combining data from multiple subject areas.

When you select the functional areas for a frequent refresh, you can't refresh the data pipeline for the applicable functional area using the Refresh Data option on the Data Configuration page. Oracle Fusion Data Intelligence processes the data augmentations as part of the incremental loads. If you change a data augmentation after including it in the frequent data refresh schedule, then you must remove that data augmentation and let the next incremental refresh finish. Otherwise, the frequent data refresh might fail. After the incremental refresh is complete, you can add the updated data augmentation back to the frequent data refresh schedule.

Frequent Data Refresh Scenarios

Here are few examples of situations when you would want to run frequent data refreshes:

- During the last five days of the month or at the end of every quarter, general ledger data changes quickly with updated entries happening more than once a day. In this scenario, a financial analyst wants to add the most recent and accurate data during the day into the analysis and report generation process. The frequency of refresh needs to be every 4 hours, or 6 times a day.
- A retailer has strict guidelines for returns or refunds on any purchase orders. They need the most recent order data for computation and report generation at the beginning of a fiscal quarter. In this example, to account for time differences between Europe, East Coast, and West Coast of the U.S., a financial analyst needs to refresh data every 8 hours, or 3 times a day.

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Performance Considerations for Frequent Data Refresh

Review and consider the following to ensure that frequent data refreshes work as expected.

Performance of frequent data refreshes depends on the following:

- Size of data.
- Data change such as what data has changed, and which pipeline gets triggered.
- Number of extracted records that may result in very different number of published records. For example, in one scenario, 44 extracted records resulted in 1060 published records in 70 minutes and 395 extracted records resulted in 55 published records in 35 minutes.

The frequent data refresh process isn't executed in the following scenarios:

- In the 180-minute window before the scheduled start of the daily incremental data refresh.
- If any release upgrade is in progress.
- Until the previous frequent data refresh process is completed. You can set a maximum frequency of 1 hour. If it takes more than 1 hour to complete the refresh, the next frequent data refresh process starts at the next hour.

Follow these guidelines to configure frequent data refresh of warehouse tables; that is, those in datasets:

- Ensure that you know the exact names of the datasets to refresh.
- Specify no more than 20 datasets for each run.
- Determine any dependencies and include the applicable tables because dependencies aren't automatically included.
- Select only the modules and tables you actually need because each additional module or table increases the volume of data the system must extract, load, and validate. Start with the minimum required modules and tables, then expand only when business needs justify the added refresh time and system impact.

While including data augmentations and data applications in the Frequent Data Refresh process, follow these guidelines:

- Ensure the reports aren’t using the fields (columns or tables) that are being dropped.
- Make changes to the data augmentations and data applications, and deploy them. The Frequent Data Refresh process republishes the new tables and readjusts the frequent data refresh delta tables. Also, ensure to make the applicable changes to the dashboards.

Schedule Frequent Refreshes of Data with Redesigned Refresh Mechanism (Preview)

Utilizing a redesigned data refresh mechanism, named Frequent Data Refresh V2, you can schedule frequent data refreshes of the applicable modules (functional areas and data applications) and warehouse tables to refresh the data during the day at a higher frequency in between incremental data refreshes.

Topics:

- About Scheduling Frequent Data Refreshes Using a New Refresh Mechanism (Preview)
- Frequent Data Refresh Delta Tables and Lambda View Details (Preview)

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- Frequent Data Refresh Module and Table Statuses (Preview)
- Table Certification Values for Frequent Data Refresh (Preview)
- Frequent Data Refresh Upgrade Considerations (Preview)
- Upgrade to Frequent Data Refresh V2 (Preview)
- Configure Frequent Data Refresh V2 (Preview)
- Enable Frequent Data Refresh Modules for Fusion Accounting Hub (Preview)

About Scheduling Frequent Data Refreshes Using a New Refresh Mechanism (Preview)

Utilizing the redesigned frequent data refresh mechanism, you can schedule frequent data refreshes of the applicable modules (functional areas and data applications) and warehouse tables to refresh the data during the day at a higher frequency in between incremental data refreshes.

The new frequent data refresh mechanism is called Frequent Data Refresh V2. During refresh, Frequent Data Refresh V2 doesn't update the base tables. Instead, it utilizes “Delta” tables to store the data that has changed and “Lambda” views for data that incorporates base data from incremental data refresh and the changes up to the point when the frequent data refresh happened. See Frequent Data Refresh Delta Tables and Lambda View Details (Preview).

Frequent Data Refresh V2 updates data in warehouse tables more efficiently, enabling potentially higher frequency data refreshes. The frequent data refresh process automatically adds the FDR Flag to the relevant subject areas. To include the frequently refreshed data in your reports, filter the data using the FDR Flag.

> **Note**
>
> If you have enabled the **Manual Execution of Apply System Extensions** global report parameter, you must run **Apply System Extensions** to view the FDR flag in the Subject Area. See Set Up the Global Report Parameters and Apply System Extensions.

With Frequent Data Refresh V2, you can select applicable modules to refresh applicable functional areas and data applications. For the selected modules, data is refreshed for all the required tables, and the Frequent Data Refresh flag is added in the relevant subject areas. You can also select specific tables, including data augmentation tables, to refresh. You may need to make changes to these tables if you want to use them in your customizations. See Manage Frequently Refreshed Data in the Workbooks.

> **Note**
>
> After release Platform 25.R3.P5, the Enable Features page won't display options to enable or disable “Frequent Refresh” and “Frequent Refresh Tables” features. You can continue using the original version of the Frequent Data Refresh capability or upgrade to Frequent Data Refresh V2. For more information on upgrading to Frequent Data Refresh V2, see Upgrade to Frequent Data Refresh V2 (Preview).

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Frequent Data Refresh Delta Tables and Lambda View Details (Preview)

The redesigned refresh mechanism utilizes “Delta” tables to store the data that has changes and “Lambda” views for data that incorporates base data from incremental data refresh and the changes up to the point when the Frequent Data Refresh happened

With Frequent Data Refresh V2, you'll see the following tables in the warehouse:

- Base Table – Data as of the last incremental refresh. This table is unchanged each time frequent data refresh runs.
- Delta Table – On each Frequent Data Refresh run, includes inserts and updates in source.
- Delta_Delete Table – On each Frequent Data Refresh run, includes deletes and updates in source.
- Lambda View = Base – Delta_Delete + Delta

> **Note**
>
> The data fetched by the Lambda View is filtered by the "Oldest Data to Report" option set in Frequent Data Refresh V2 configuration. Lambda Views are only for viewing purposes; you must not use them for downstream integrations. See About Scheduling Frequent Data Refreshes Using a New Refresh Mechanism (Preview).

Frequent Data Refresh Module and Table Statuses (Preview)

You can view the status of individual modules or tables on the Frequent Data Refresh page.

These statuses offer insight into whether related data has been recently published, changed, or is available for update. The following table explains the different possible Status messages and their meanings.

Status	Definition
Eligible	You can select the module for inclusion in Frequent Data Refresh. Once you publish the Frequent Data Refresh definition, this status changes to **Published**.
Not Published	If you've selected any modules for Frequent Data Refresh and then saved your progress, this status indicates that it's been selected since the last publish.
Publish in progress	Frequent Data Refresh is running, and the user interface isn't editable.
Published	The module is up-to-date as of the last Frequent Data Refresh run, and a Frequent Data Refresh publish isn't running.
Modified	If you've changed a table since the last save or publish. You should double check your in-progress changes. For example, you select TABLE_A, and click Save. You later return to work on your Frequent Data Refresh configuration and unselect TABLE_A. TABLE_A's Status is **Modified** until you Save or Publish again, at which point it becomes **Eligible**.

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Status	Definition
Invalid	If a functional area that used to be was part of your Frequent Data Refresh configuration is disabled, the related module is **Invalid** until the next Publish runs. The data related to the recently disabled functional area is deleted during the next publish.

Table Certification Values for Frequent Data Refresh (Preview)

This page explains the differences between possible table certifications for tables used in Frequent Data Refresh.

Recommended - Recommended tables are automatically included when a module is selected for Frequent Data Refresh. These tables are also available for individual selection in the Frequent Data Refresh Data Tables tab.

Certified – Certified tables aren't automatically included when a module is selected for Frequent Data Refresh. They're verified by Oracle as compatible with Frequent Data Refresh. You can manually add these on the Data Tables tab.

Not Certified – These are allowed for Frequent Data Refresh but haven't been certified by Oracle. You may encounter data consistency issues if you include these tables in Frequent Data Refresh.

> **Note**
>
> Some tables are incompatible with Frequent Data Refresh. You'll receive an error if you try to add an incompatible table.

Frequent Data Refresh Upgrade Considerations (Preview)

Existing users of the Frequent Data Refresh functionality can upgrade to the latest Frequent Data Refresh version, but should be aware of changes to the configuration and behavior after upgrade.

If you have been using Frequent Data Refresh before Platform 25.R3, you can continue using the original version or upgrade to the latest Frequent Data Refresh version. Before upgrading you should consider the following:

- Ensure you're running version 25.R2.P1.
- Understand the impact on custom processing using warehouse tables, as you'll need to use Delta Tables and Lambda Views instead of base warehouse tables. See Frequent Data Refresh Delta Tables and Lambda View Details (Preview).
- Understand the changes required to use Frequent Data Refresh in analytics for customizations and how to use the FDR Flag in subject areas. See Manage Frequently Refreshed Data in the Workbooks.
- Perform the upgrade steps. See Upgrade to Frequent Data Refresh V2 (Preview).
- Enable the Frequent Data Refresh V2 feature in the user interface.
- Configure the Frequent Data Refresh V2 settings via the Pipeline Settings page. See Configure Frequent Data Refresh V2 (Preview).

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The following existing configurations for Frequent Data Refresh are migrated when upgrading to the latest Frequent Data Refresh version:

- Activated Functional Areas
- Tables from Activated Data Augmentations
- Recommended and Certified Tables
- Not-certified Tables (migrated as non-certified)

The following aren't migrated when upgrading to the latest Frequent Data Refresh version:

- Non-Activated Functional Areas
- Tables from not-Activated Data Augmentations
- Tables from Data Augmentations not supported in Frequent Data Refresh V2 - Dimension Alias and Data Transformation, Data Augmentations with Versioned Data Sets, Data Augmentations without Incremental Key column, Data Augmentations without Last Update Data (LUD) column

Upgrade to Frequent Data Refresh V2 (Preview)

As a service administrator, you can upgrade to use the latest version of frequent data refresh.

1. In Oracle Fusion Data Intelligence Console, click **Enable Features** under **Application Administration**.
2. On the Enable Features page, under the Preview Features tab, expand the Pipeline Features section, and enable **Frequent Data Refresh V2**.
3. Return to the Oracle Fusion Data Intelligence Console and click **Data Configuration**, then **Pipeline Settings**.
4. Note the banner message about a new Frequent Data Refresh. Click **Upgrade**.
5. Fill out the Warning dialog with the name of the person performing the upgrade, and the name of the person authorizing the upgrade. Note that these details can be reviewed in the Audit Log.
6. Click **Upgrade**. You can't edit the Pipeline Settings page while the upgrade is in progress.
7. When the upgrade completes, you see the latest user interface and can configure Frequent Data Refresh. See Configure Frequent Data Refresh V2 (Preview).
8. After upgrade, view the audit log for “Frequent Refresh V2 Upgrade” to understand what configurations got migrated to FDR V2. Ensure that you inspect and validate the modules included in the FDR V2 configuration.

   You must also update the refresh schedule and publish.

Configure Frequent Data Refresh V2 (Preview)

Configure the frequency of data refresh by selecting the refresh schedule, modules, and data tables.

You can specify data to be refreshed at specific times in a day. For example, you could set refreshes at 10AM, 2PM, and 5PM because that's when you want the intra-day data to be refreshed. The number of times you can do intra-day refresh is based on certain limits. See About Data Processing Limits.

Select only the modules and tables you actually need because each additional module or table increases the volume of data the system must extract, load, and validate. Start with the

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minimum required modules and tables, then expand only when business needs justify the added refresh time and system impact.

Ensure that **Frequent Refresh** is enabled in **Pipeline Features** under the Preview Features tab on the Enable Features page prior to scheduling frequent data refreshes. See Make Preview Features Available.

1. On the Oracle Fusion Data Intelligence Console click **Data Configuration**, then **Pipeline Settings**.
2. Click the **Frequent Data Refresh** tab.
3. Under **Schedule Information**, click **Update** to change the schedule.
4. In **Update Schedule**, specify these:
   a. **Timezone**: Select your time zone.

> **Note**
>
> While specifying the timezone, use city names to handle the daylight savings. For example, instead of selecting timezone such as EST or PST, select Europe/Bucharest or America/Los_Angeles. In this case, the data refresh process calculates the value mentioned in the Time field based on the local time irrespective of daylight savings.

   b. In **Active Schedules**, click the **Add Schedule** icon, enter a time, and click **Update**.

> **Note**
>
> You can configure different FDRs to run at specific times. The actual time taken for data to be refreshed depends on various factors. See Performance Considerations for Frequent Data Refresh.

5. To refresh specific modules, view the **Modules** tab, and select the desired function areas and data applications. If you don't see an expected functional area, first ensure that it is activated. You must also include any functional areas on which the selected functional areas depend on. For Fusion Accounting Hub, additional steps are required to enable it for Frequent Data Refresh. See Enable Frequent Data Refresh Modules for Fusion Accounting Hub (Preview)

   - Enter the name of a Functional Area, Application, or Offering in the Search field to find a desired entry to select for Frequent Data Refresh. You can select three functional areas for Frequent Data Refresh.

6. To refresh specific tables, select the **Data Tables** tab and click to select the desired tables.

   If you don't see an expected table, make sure you've activated the related functional area for the applicable source.

> **Note**
>
> You can't add tables for data augmentations of type Dimension Alias, Versioned Datasets, or data augmentations with no last update date.

7. Optionally edit the **Oldest Data to Report** field. This option affects the data fetched by the Lambda View. The default value is 4 months. Increasing the value may impact

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performance on reports and any custom processing you may have based on Lambda views. See Frequent Data Refresh Delta Tables and Lambda View Details (Preview).

8. To save your progress at any point during configuration, click the **Save** button.
9. When you're finished making changes, click **Publish**. Each change to Frequent Data Refresh settings includes a Warning dialog that requires you to enter the name of the person making changes as well as the name of the person authorizing the change.
10. See the Status column for information on specific tables or modules. See Frequent Data Refresh Module and Table Statuses (Preview).
11. View the Audit log to review Frequent Data Refresh configuration details. See View the Audit Log.

Enable Frequent Data Refresh Modules for Fusion Accounting Hub (Preview)

You can control the specific subledgers eligible for Frequent Data Refresh in data applications, such as Oracle Fusion Accounting Hub. If you know that certain subledgers only update weekly, for example, you can exclude them from Frequent Data Refresh to minimize using unnecessary processing resources.

1. In Oracle Fusion Data Intelligence Console, click **Data Configuration** under **Application Administration**.
2. On the Data Configuration page, under Configurations, click **Data Applications**. Click the Actions menu (3 dots) and select Edit.
3. Click **Eligible for frequent data refresh** next to specific subledgers you want included in Frequent Data Refresh.

Schedule Frequent Refreshes of Data with Original Refresh Mechanism

You can schedule frequent data refreshes to ensure that incremental data in functional areas, prioritized datasets, warehouse tables, and data applications is the latest.

The original frequent data refresh capability, named Frequent Data Refresh V1, is designed for refresh of base tables that capture the transactional data; it isn't meant for derived datasets that require aggregations, snapshots, or complex transformation logic. Such processing creates data latency that doesn't support high volume of frequent data refresh. For Oracle Fusion Data Intelligence, you can schedule frequent data refreshes for functional areas that are visible in the Frequent Data Refresh Schedule tab on the Pipeline Settings page.

For frequent data refreshes, the semantic model isn't updated. Jobs that update the semantic model don't run as part of data augmentations; they run only during incremental loads for data augmentations.

The Frequent Data Refresh feature available before the Platform 25.R3 release (FDR V1) is redesigned in FDR V2, offering faster data refreshes and broader functionality. Starting with Platform 25.R3 release, all new Fusion Data Intelligence instances support only FDR V2. Existing customers using FDR V1 (with subscriptions ordered before September 1, 2025) may continue using it. However, Oracle strongly recommends migrating to FDR V2 to take advantage of its improved performance and expanded features.

After the Platform 25.R4 release, you won't be able to enable and disable features related to FDR V1. Usage of FDR V2 is subject to certain data processing limits. See About Data Processing Limits. If your usage needs go beyond these limits, contact Oracle Customer Support.

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If you want to select the warehouse tables created by the data applications that were generated prior to release Platform 25.R3, then you must regenerate the applicable data applications for these tables to be visible for selection. From release Platform 25.R3, the warehouse tables created by the data applications are available for a frequent data refresh under the Frequent Refresh tab.

Topics:

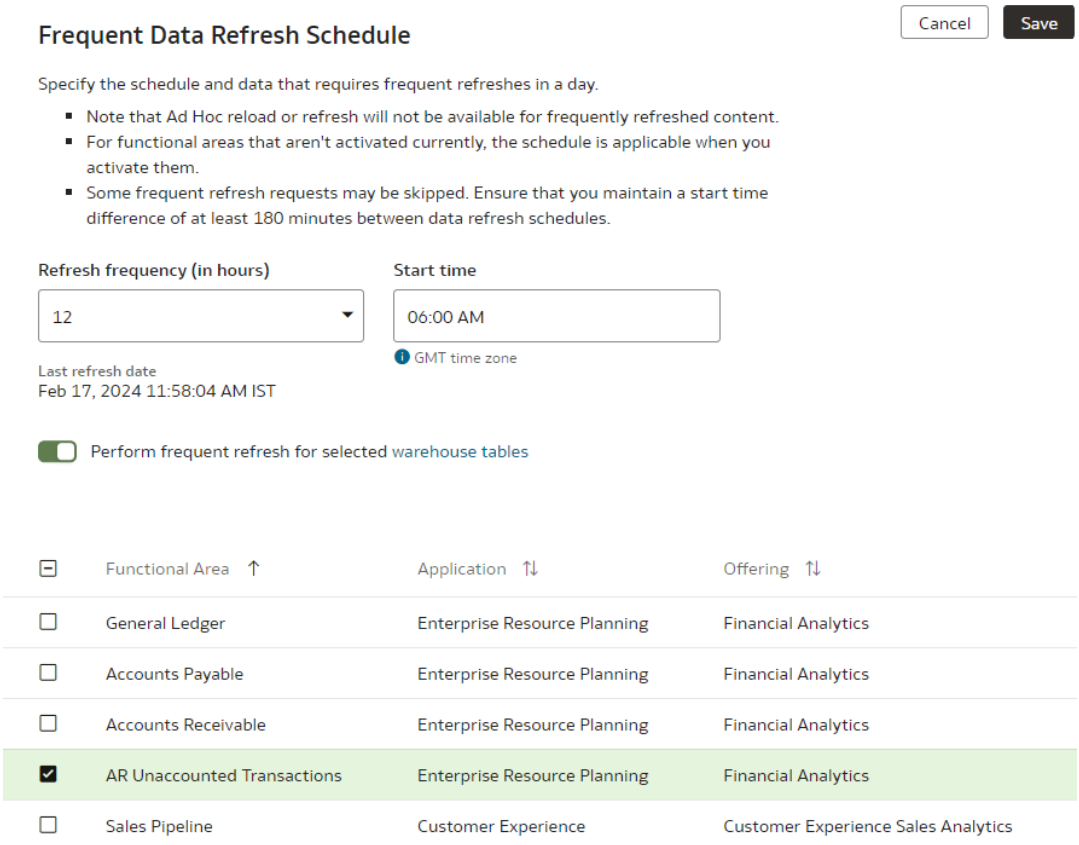
- Configure Frequent Data Refresh with Original Refresh Mechanism

Configure Frequent Data Refresh with Original Refresh Mechanism

You can schedule frequent data refreshes of the applicable functional areas, prioritized datasets, and warehouse tables to ensure that the incremental data in these is the latest.

Ensure that **Frequent Refresh** is enabled in **Pipeline Features** under the Generally Available Features tab on the Enable Features page prior to scheduling frequent data refreshes. See Enable Generally Available Features.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Configurations**, click **Pipeline Settings**.
4. On the Pipeline Settings page, click **Frequent Data Refresh Schedule**.



5. In the Frequent Data Refresh Schedule tab, in **Refresh Frequency (in hours)**, select the number of hours after which you want the data refresh to happen.
6. Enter a start time in **Start time**.

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7. In **Last refresh date**, view the date when the data was last refreshed.
8. If you've enabled the "Frequent Refresh Tables" preview feature and saved your selection of the warehouse tables, then select the **Perform frequent refresh for selected warehouse tables** toggle. Click the "warehouse tables" hyperlink to view or update your selection of the warehouse tables in the Frequent Refresh Tables tab.
9. Select the checkbox for the functional areas with the data you want refreshed at the specified interval.
10. Click **Save**.

Schedule Reload of Data

You can schedule reload of the activated functional areas, data augmentations, and deployed data applications to ensure that all the data in these are completely reloaded. You can configure different refresh schedules for individual functional areas and data applications.

The system performs data reloads as part of the Data Maintenance refresh. The Data Maintenance tab lists the schedules that you add and the system performs the refresh based on these schedules.

This capability is available in a phased rollout. Reach out to Oracle for additional information.

Full Reload - For Oracle Fusion Data Intelligence, you can schedule a periodic full reload for functional areas such as General Ledger and Order Management. You can schedule a full reload of maximum 20 functional areas. When you select the functional areas for full reload, ensure that you select the dependent functional areas as well.

You may want to fully reload the data for a functional area in these sample scenarios:

- The Finance department wants to do full reload of the general ledger (GL) data at the beginning of the month to make sure all data is fresh and clean for the monthly GL entries and the analytics and report generation.
- At the beginning of every quarter, all data related to Purchase Orders is updated with returns, refunds, and any adjustments. In this scenario, revenue recognition needs to take all the latest Purchase Order data to compute all numbers and create accurate reports. Hence, a full reload of the order data is required on the 1st of every fiscal quarter that can be different from the calendar quarter.

Specialized Reload - You can schedule a specialized reload to process what's necessary instead of a full reload. For example, to handle deletes and transient data, you can schedule a specialized reload. Choose specialized reload when you add a functional area to a scheduled reload. In case you schedule a specialized reload for a module and if there's a full reload scheduled for the same day, full reload will take precedence over specialized reload. See the reference guides for functional areas for details.

Uses cases supported for specialized reload:

- Account Receivable (Deletes)
- Receivable Aging (backdated transactions, source deleted schedules)

You can check the refresh summary in two ways:

- View details of the requests on the Request History page.
- View the DW_WH_REFRESH_SUMMARY data warehouse table.

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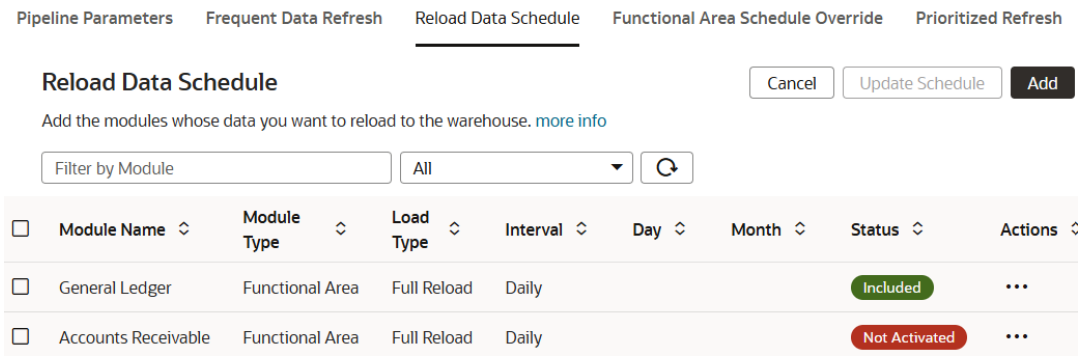
Ensure that **Scheduled Data Reload** is enabled in **Pipeline Features** under the Generally Available Features tab on the Enable Features page prior to scheduling periodic full reload. See Enable Generally Available Features.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Configurations**, click **Pipeline Settings**.
4. On the Pipeline Settings page, click **Reload Data Schedule**.



5. Click **Add** to specify the refresh schedule and load type for either a functional area or data application.
6. In Module Settings, specify the module and load type.
   - **Module Type** - Select **Functional Area** or **Data Application**.
   - **Module Name** - Select the applicable name.
   - **Load Type** - Select **Full Reload** or **Specialized Reload**.

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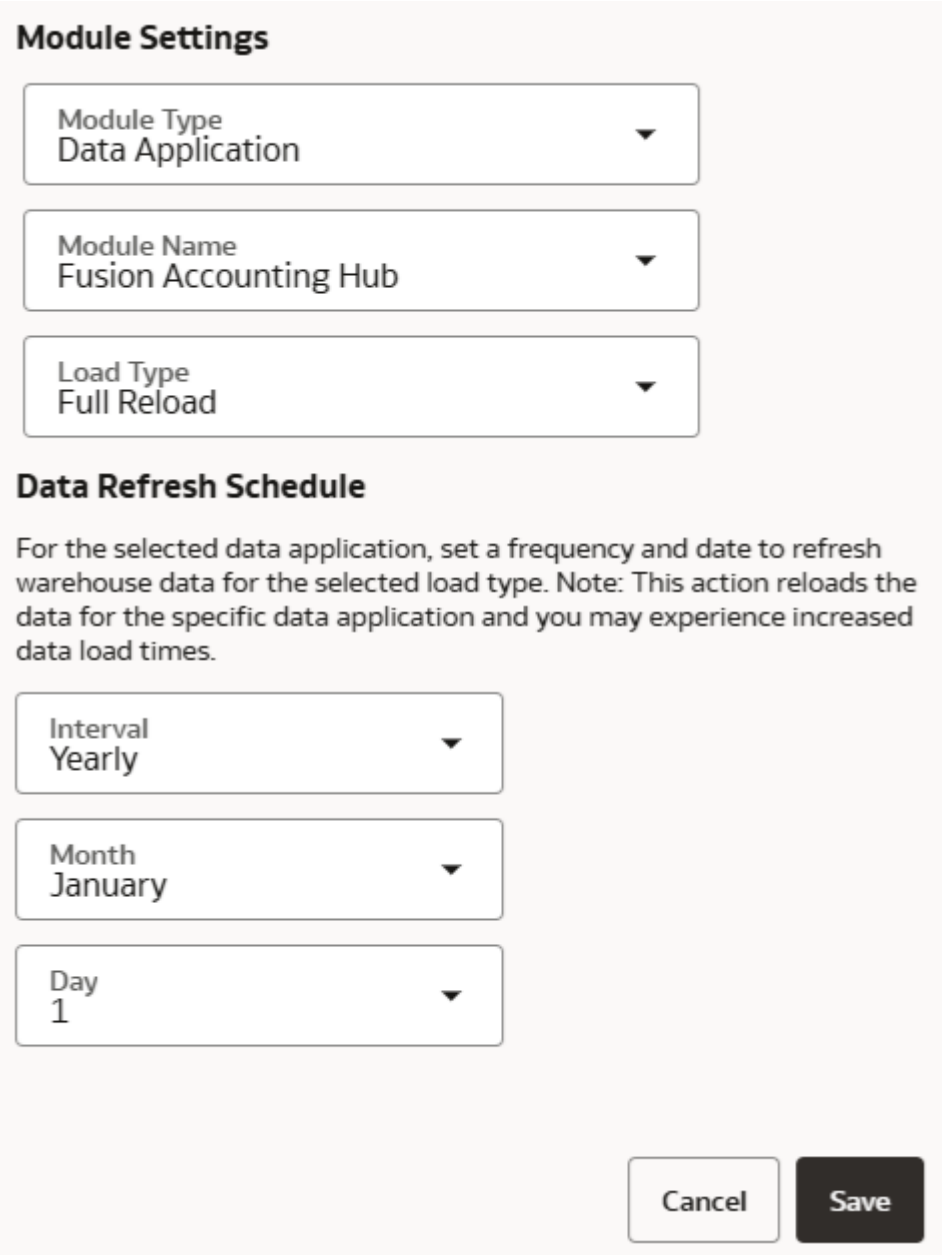

7. In the **Data Refresh Schedule** section in Module Settings, select the frequency interval such as daily, weekly, monthly, quarterly, or yearly.
8. Specify the day depending on the frequency interval you selected.
9. Based on the selected frequency interval, select the specific day of the week, month, a day in the first month of the quarter, or a month and day of the year.
10. Click **Save**.

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Schedule Frequent Refreshes of Warehouse Tables (Preview)

You can select warehouse data tables that are part of functional areas, descriptive flexfields custom configurations, and data augmentations for frequent data refresh ahead of other data in the regularly scheduled batch.

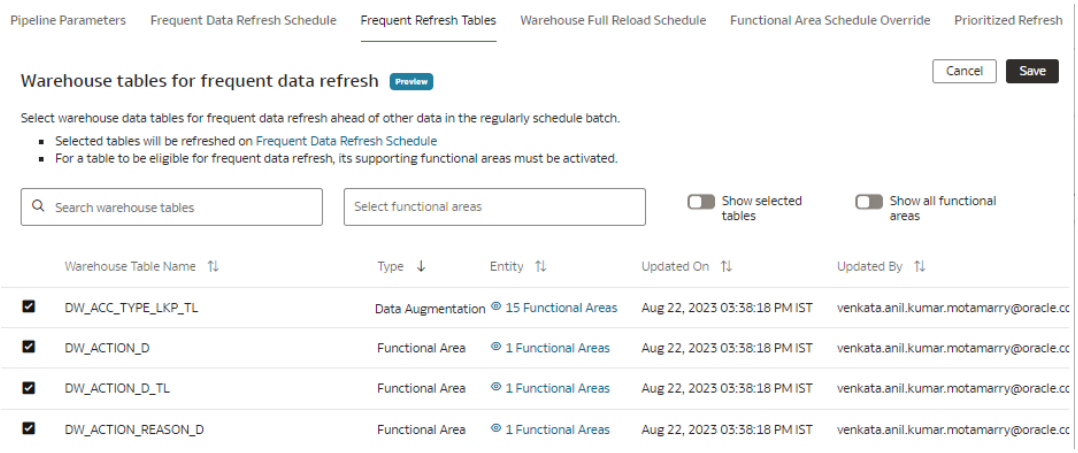
For a table to be eligible for a frequent data refresh, ensure that its supporting functional areas, data augmentations, and descriptive flexfields custom configurations are activated. The data applications activated prior to release Platform 25.R3 won't be available automatically. You must regenerate and redeploy them to schedule for frequent refresh. After you select the warehouse tables for frequent data refresh and save your selection, the selected tables are available as "Warehouse Tables" under the Frequent Refresh tab. You can set the frequent refresh schedule for these tables in the Frequent Refresh tab. See Schedule Frequent Data Refreshes.

The Frequent Data Refresh feature available before the Platform 25.R3 release (FDR V1) is redesigned in FDR V2, offering faster data refreshes and broader functionality. Starting with Platform 25.R3 release, all new Fusion Data Intelligence instances support only FDR V2. Existing customers using FDR V1 (with subscriptions ordered before September 1, 2025) may continue using it. However, Oracle strongly recommends migrating to FDR V2 to take advantage of its improved performance and expanded features.

After the Platform 25.R4 release, you won't be able to enable and disable features related to FDR V1. Usage of FDR V2 is subject to certain data processing limits. See About Data Processing Limits. If your usage needs go beyond these limits, contact Oracle Customer Support.

Ensure that **Frequent Refresh Tables** is enabled in **Pipeline Features** under the Preview Features tab on the Enable Features page prior to scheduling frequent refreshes of the tables. See Make Preview Features Available.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Configurations**, click **Pipeline Settings**.
4. On the Pipeline Settings page, click **Frequent Refresh Tables**.



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5. In the Frequent Refresh Tables tab, select the checkbox for the applicable warehouse tables and click **Save**.

Override Data Pipeline Schedules for Functional Areas (Preview)

You can remove selected functional areas from the standard incremental refresh schedule and run their incremental refresh on a separate daily schedule. This lets you prioritize the timing of selected data pipelines.

Functional area schedule override is supported only when the standard data refresh interval is set to **Daily**. Weekly, Monthly, Quarterly, and Yearly intervals aren't supported for functional area schedule overrides.

When the standard data refresh interval isn't set to **Daily**, the Functional Area Schedule Override page displays a message that custom overrides are disabled. The Update Schedule action is unavailable until you set the data refresh interval to **Daily** in Pipeline Parameters.

An override runs an incremental refresh; it doesn't run a full data reload. If a functional area has dependencies, include its dependent functional areas in the relevant override to maintain consistent data.

Ensure that **Functional Area Schedule Override** is enabled in **Pipeline Features** under the Preview Features tab on the Enable Features page . See Make Preview Features Available.

In Pipeline Parameters, set the standard data refresh interval to **Daily**. If it isn't set to Daily, custom overrides are disabled.

> **Note**
>
> Make sure to select all dependent functional areas to avoid data inconsistencies after a data refresh occurs. For more information about dependencies between functional areas, see:
>
> - Fusion SCM Analytics Offerings and Functional Areas
> - Fusion ERP Analytics Offerings and Functional Areas
> - Fusion CX Analytics Offerings and Functional Areas
> - Fusion HCM Analytics Offerings and Functional Areas

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Configurations**, click **Pipeline Settings**.
4. On the Pipeline Settings page, click **Functional Area Schedule Override**.

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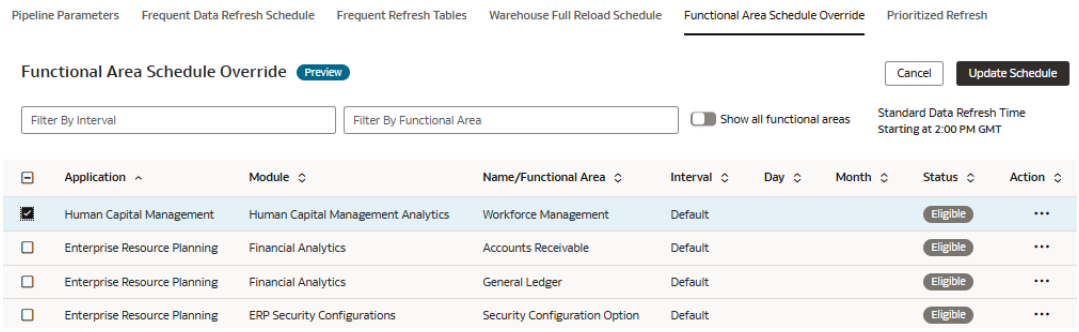


5. If custom overrides are disabled and a warning is shown, set the data refresh interval to **Daily** in **Pipeline Parameters**, then return to this page.
6. In the Functional Area Schedule Override tab, select the functional areas to run on a separate schedule, and then click **Update Schedule**.

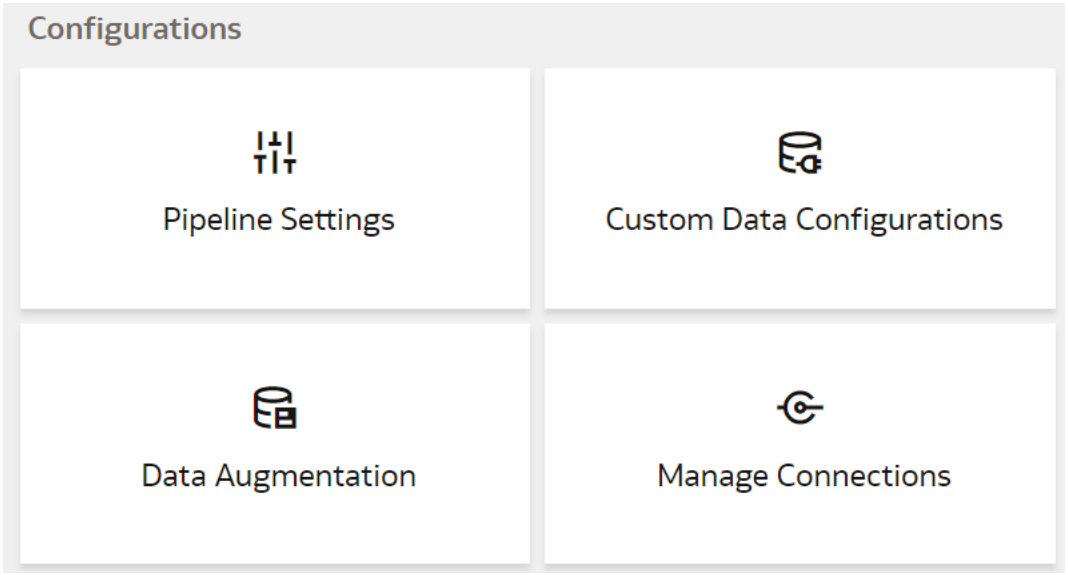
   To set the schedule for an individual functional area, click the **Action** menu for the applicable function area and click **Edit Schedule**.
7. Click **Save**.

Prioritize Datasets for Incremental Refresh (Preview)

As a functional administrator, you can select datasets to prioritize for incremental refresh over others. For example, at the end of the quarter, you want to prioritize some of the datasets that have bookings data over other datasets.

You can search for and choose datasets based on the functional areas. The incremental refresh process runs the priority dataset refresh first from end-to-end, followed by the regular incremental refresh.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Configurations**, click **Pipeline Settings**.



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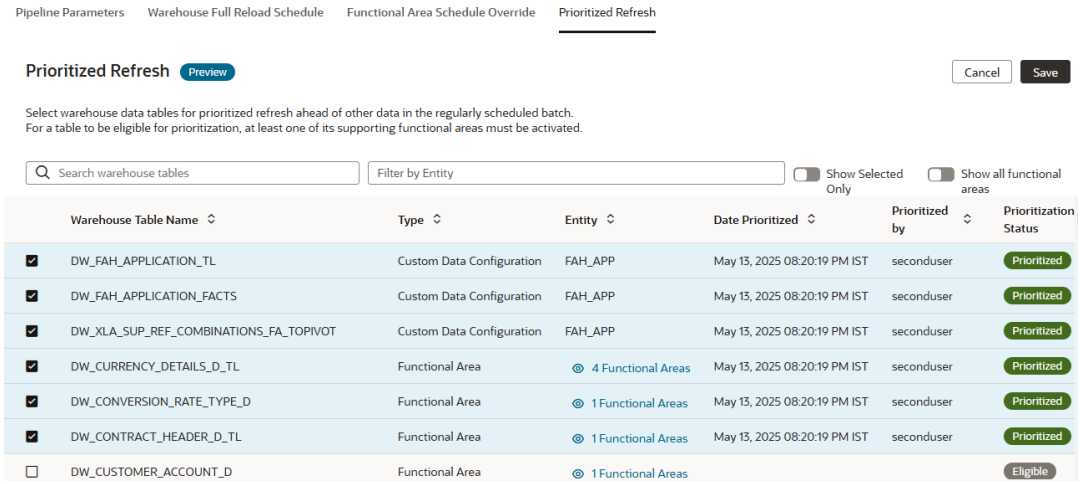
4. On the Pipeline Settings page, click the Prioritized Data Refresh tab.



> **Note**
>
> You can't include data augmentations of type Data Set or Dimension Alias, data augmentations with no last modified date, and versioned data sets in a prioritized refresh; hence the system doesn't show these in the list of tables available.

5. In the Prioritized Data Refresh section, select the datasets that you want for the priority refresh.
6. Click **Save**.

Schedule Data Maintenance

You can schedule full data loads separately using the Data Maintenance configuration to avoid affecting the incremental refresh.

Data maintenance involves scheduling reloads of activated functional areas and deployed data applications to ensure all data is completely reloaded. To ensure that the data in the warehouse is consistent, in certain situations, a full reload of modules is required. For example, when you've deleted data in the source and you want the data in the warehouse to reflect those changes, a full reload of those functional areas is required. Another example is when there is a structural change in the data augmentation because the attributes and column options are edited or you're using data augmentations as versioned datasets, the system does a full reload. These full loads typically take long time to run and can slow down the daily incremental refresh. When you deploy the data augmentations through bundles, the system considers the applicable data augmentations as structural changes and refreshes them with data maintenance.

With the data maintenance configuration, you can schedule execution of these full loads so that they don’t unnecessarily affect the incremental refresh. You can change the data maintenance schedule or leave the default schedule details. If you retain the default schedule, the system runs the full loads after the daily incremental refresh is completed. If you update the default schedule for data maintenance, then the system runs the full loads at the scheduled time. If the schedules for daily refresh and data maintenance overlap or conflict, the system

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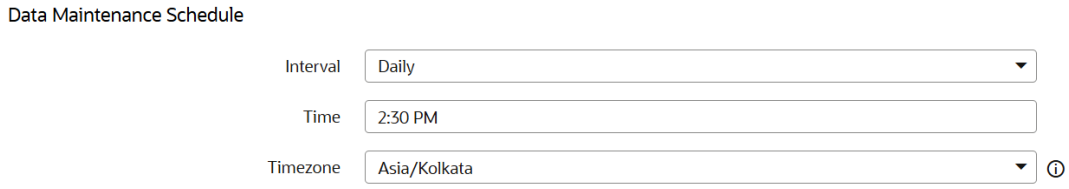
runs the daily refresh first. You can view such scheduled refreshes on the Data Maintenance page.

The system creates the default data maintenance schedule after running the incremental refresh with activated modules. If the incremental refresh has no activated modules, the system won't schedule data maintenance request even if data maintenance is enabled in your instance.

The full reload schedule doesn't display the last refresh date because full reload modules get refreshed with data maintenance requests. When the full reload and data maintenance schedules don't match, the next data maintenance includes the full reload functional areas. For example, data maintenance is scheduled weekly on "Tuesday" and full reload is scheduled weekly on "Wednesday", then the next tuesday's data maintenance includes the previous wednesday's full reload functional areas.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Configurations**, click **Pipeline Settings**.
4. Under Pipeline Parameters, in **Data Maintenance Schedule**, specify the following:
   - **Interval**: Select the refresh interval such as Daily, Weekly, Monthly, or Quarterly.
   - **Time**: Select the refresh start time.
   - **Timezone**: Select applicable timezone based on your refresh time.

> **Note**
>
> The start and end of daylight-saving times may affect the data refresh process.



5. Click **Save**.
6. On the Data Configuration page, click **Data Maintenance**.
7. On the Data Maintenance page, verify the next schedule time and the requests for full load of functional areas and reload of specific data.

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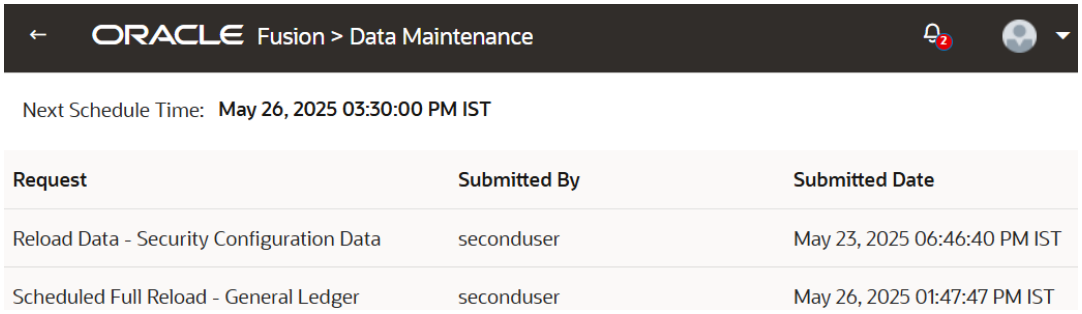

Extend Data with Data Applications

As a functional administrator, you can use the prebuilt and custom data applications to extend your data for detailed and varied analytics.

Topics:

- About Extending Data with Data Applications
- Use Data Applications to Extend Data
- Edit a Data Application
- Delete a Data Application
- Perform an Ad hoc Refresh of a Data Application
- Reload Data for a Data Application
- Undeploy a Data Application

About Extending Data with Data Applications

Data applications provide prebuilt solutions that transform into an application or functional area, and you can manage them collectively. You can also create custom data applications using the Data Augmentation scripts.

Data applications can be:

- Configuration-based – These are the prebuilt data applications in which the high-level application structure is fixed, and your configuration determines what components are generated. Metadata and data model inputs come from the source system. The system categorizes these as Standard.
  Examples include Configurable Account Analysis (CAA), DFF Mapper, and Fusion Accounting Hub (FAH).
- Code-based: You build these data applications from scratch or semi-scratch using an integrated development environment with SQL/programming understanding such as the Data Augmentation scripts. Using the Data Augmentation scripts, you can create custom transformations across multiple source tables.

You can select data from the deployed data applications for a prioritized refresh and frequently refresh the data applications-related data. You later use these custom functional areas to augment the data from the source or enrich the data available in the Autonomous AI Lakehouse. When you start using a data application for the first time and deploy it, Oracle Fusion Data Intelligence assigns the data application a version number. You can then edit the deployed version, make changes, and save it. This saved version then gets a new version

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number. While you're changing the definition, the deployed version continues to fetch new data.

While using the Data Applications feature you typically follow this flow:

1. Define the application: In Data Configuration, select the source and create a new application from the Data Applications tile. Provide an application ID and name.
2. Publish the application: In this step, the system generates (creates the application definition and artifacts) and deploys (performs a full load like a full load for a prebuilt functional area) the application.
   After deployment, the system creates application-specific warehouse tables and populates the data model definitions into the applicable tables, which you can use to extend the semantic layer. The system runs the incremental data loads for the application as part of the system incremental job. You can edit, regenerate, redeploy, reload, refresh data, undeploy, or delete using the available actions for a data application on the Data Applications page.

Use Data Applications to Extend Data

Using data applications, you can create a managed analytics application or functional area with the data from multiple sources that you bring into the Autonomous AI Lakehouse.

You can create code-based custom data applications with the data augmentation scripts and use these prebuilt configuration-based data applications:

- Descriptive Flex Fields Attribute Mapper
- Configurable Account Analysis
- Fusion Accounting Hub
- Supply Chain Planning

To activate any data application, ensure to activate at least one prebuilt functional area.

Extend Data with the Descriptive Flex Fields Attribute Mapper

You can use the Descriptive Flex Fields (DFF) Attribute Mapper custom configuration to select the prebuilt DFFs with their attributes, generate, and deploy the selected DFFs in the warehouse. The deployed DFFs create a custom functional area that you can use like the prebuilt functional areas.

The DFF Attribute Mapper supports the following:

- For attribute name, it supports "alphanumeric", "_", and "$". This is according to the Oracle SQL database restrictions. Avoid using any other characters because they aren't supported.
- For display name, proceed with caution using any special characters because they can create an issue in report generation. Comma isn't allowed by default. If you encounter any unsupported attributes, you need to change it in the source and then the DFF Attribute Mapper reflects such attributes too and makes them available for selection.
- Maximum length of 999 characters per column.

The DFF Attribute Mapper custom configuration is available with the 22.R3 application update. For tenant instances that you create after upgrading to this application update, as a service or functional administrator, you must navigate to this custom configuration, search for and select the DFFs that you want to move to the warehouse, map the attributes as needed, and deploy the selected DFFs. You can filter based on functional areas such as General Ledger, Accounts Payables, and Accounts Receivables or applications from the source system such as Payables

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and Receivables to list DFFs that you need to move to the warehouse. If you require a new DFF later, then complete this process again.

For tenant instances already operational before the 22.R3 application update, to ensure backward compatibility, Oracle Fusion Data Intelligence automatically copies the DFFs based on the functional areas that are activated. For existing tenant instances, Oracle Fusion Data Intelligence also copies the DFFs when you activate a new functional area. Oracle recommends that you start using the DFF Attribute Mapper to select DFFs and map the required attributes yourself.

Select Descriptive Flex Fields and Map Attributes

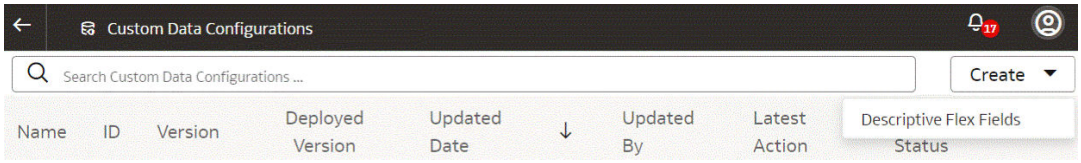
As a functional administrator, select and add theprebuilt descriptive flex fields (DFFs) and their attributes to your Autonomous AI Lakehouse using the DFF Attribute Mapper.

While selecting and adding the prebuilt DFFs and their attributes, you must ensure that they are BI-enabled. The BI-enabled DFFs are registered in the database as enabled for Oracle Business Intelligence (BI) and include a BI-enabled setting for each of its segments. When a global, context, or context-sensitive segment is BI-enabled, it's available for use in Oracle Business Intelligence. If you select any attribute that isn't BI-enabled, then your extraction and downstream data augmentation may fail.

After adding the DFFs such as Invoice and Payment Information along with their attributes, you can use the data from the added DFFs to augment the data from the source or enrich the data available in the Autonomous AI Lakehouse. The ability to select the attributes that you need enables you to avoid pipeline failures and slow performance.

While searching for the prebuilt DFFs, filter the DFFs by functional areas or applications from the source system to view a smaller set. View the details of the flex field using the Details tab. You can add selected attributes or add all available attributes using the **Add all attributes** option.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Configurations**, click **Data Applications**.
4. On the Data Applications page, click **Create**, and then select **Descriptive Flex Fields**.



5. On the Descriptive Flex Fields page, click **Actions** for a descriptive flex field that you want to add attributes.

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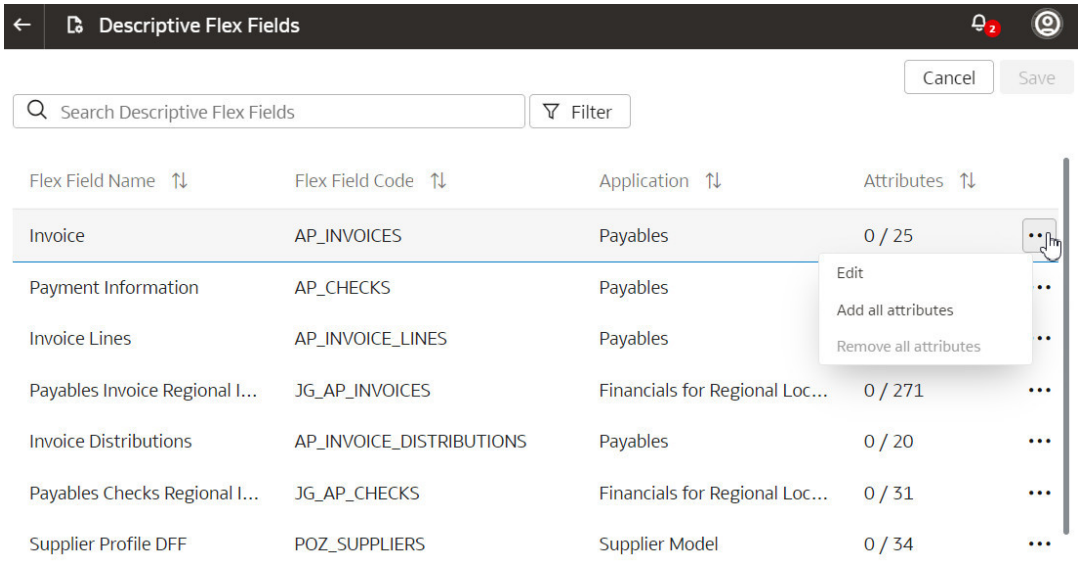

6. In **Actions**, click **Edit** to select attributes
7. In the descriptive flex field dialog, select the checkbox for the attributes that you want to add and then click **Done**.

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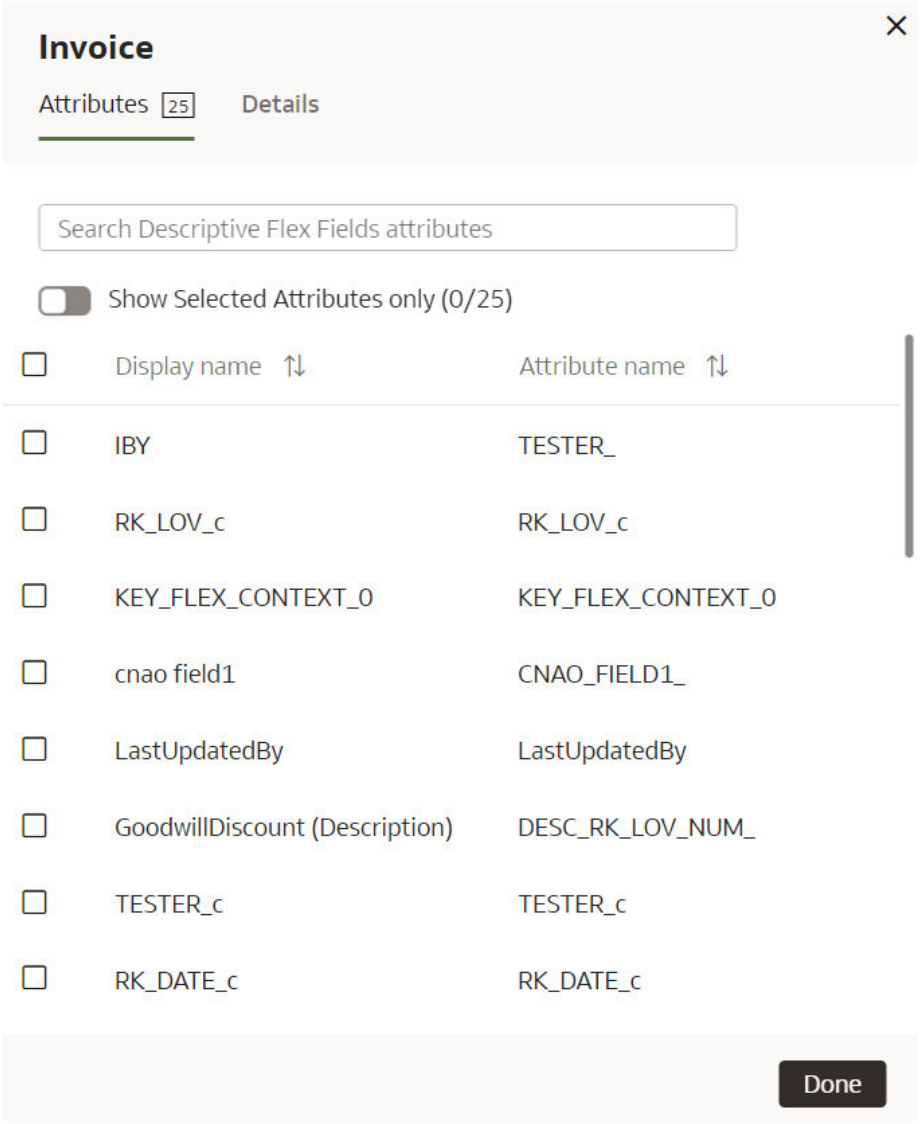

8. After adding attributes to the descriptive flex fields that you want, click **Save** on the Descriptive Flex Fields page.

Activate the Descriptive Flex Fields

After selecting the attributes for the descriptive flex fields (DFFs) that you want, you must publish them to activate and enable data load.

When you publish the selected DFFs, the system initializes the data application for activation. The system evaluates the selections for the DFFs and prepares the application for deployment. It changes the status to scheduled and after processing, sets the data application as active. Next, the system connects to the source system and extracts the data for the selected flex fields and their attributes. Once the data is copied to the warehouse, the data is visible for analysis in the subject areas. The subsequent incremental data loads copy the data for the DFFs to the warehouse automatically.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Configurations**, click **Data Applications**.

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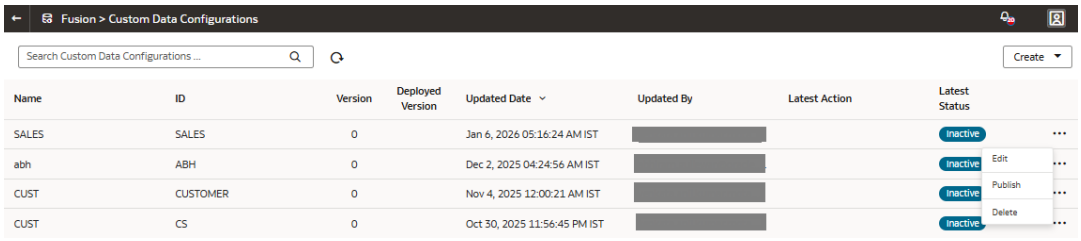
4. On the Data Applications page, click **Actions** for a descriptive flex field that you want to activate.
5. In **Actions**, click **Publish**.



Deactivate the Descriptive Flex Fields

You can deactivate the descriptive flex fields (DFFs) if you no longer want to include the data from the DFFs in the incremental data loads.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Configurations**, click **Data Applications**.
4. On the Data Applications page, click **Actions** for a descriptive flex field that you want to deactivate.
5. In the pop up, click **Deactivate**.

Extend Data with Configurable Account Analysis

The prebuilt Configurable Account Analysis data application enables functional administrators to define the comprehensive account analysis template combining data across general ledger and multiple subledger sources right from the initial extract date.

To use this data application, you must have a subscription for Oracle Fusion ERP Analytics. See Configurable Account Analysis.

Extend Data with Fusion Accounting Hub

Fusion Accounting Hub Analytics empowers finance organizations to establish a comprehensive system of insights for accounting data. It's an add on subscription to Oracle Fusion ERP Analytics.

To use this data application, you must have a subscription for Oracle Fusion ERP Analytics. See Fusion Accounting Hub Analytics.

Extend Data with Supply Chain Planning

The prebuilt Supply Chain Planning Analytics data application enables you to extract data from a Oracle Fusion Cloud Supply Chain Planning instance and create a data model that supports reporting and analytics for the selected plans.

To use this data application, you must have a subscription for Oracle Fusion SCM Analytics. See Supply Chain Planning Analytics.

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Extend Data with Custom Data Applications

You can build custom data applications that are organization-specific or industry-specific data pipelines programmatically with custom logic using the Data Augmentation scripts.

See Data Augmentation Scripts.

Edit a Data Application

Edit a data application to include changes that meet your business requirements.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration** and then click **Data Applications**.
3. On the Data Applications page, click the **Action** icon for the applicable data application.
4. From the actions, click **Edit**, make the applicable changes, and then click **Save and Exit**.

Delete a Data Application

Delete a data application when you no longer need it.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration** and then click **Data Applications**.
3. On the Data Applications page, click the **Action** icon for the applicable data application.
4. From the actions, click **Delete** and in Delete Data Application dialog, click **Confirm**.

Perform an Ad hoc Refresh of a Data Application

Perform an ad hoc data refresh of a data application to instantly pull critical, up-to-date information from the source application without waiting for the next scheduled pipeline run.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration** and then click **Data Applications**.
3. On the Data Applications page, click the **Action** icon for the applicable data application.
4. From the actions, click **Refresh Data**.

Reload Data for a Data Application

Reload data for a data application to completely wipe existing warehouse data for specific entities and repopulate them from the source.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration** and then click **Data Applications**.
3. On the Data Applications page, click the **Action** icon for the applicable data application.
4. From the actions, click **Reload Data**.

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Undeploy a Data Application

Undeploy a data application to free up processing resources, disable unused business metrics, or eliminate obsolete reporting pillars. This action helps maintain optimal system performance and ensures data security within the unified data platform.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration** and then click **Data Applications**.
3. On the Data Applications page, click the **Action** icon for the applicable data application that has been published.
4. From the actions, click **Undeploy** and in the message, click **Confirm**.

Share Data with External Systems (Preview)

Use Data Share capability to share the data processed by Oracle Fusion Data Intelligence pipeline with external data stores alongside Oracle Autonomous AI Lakehouse. This enables you to enhance your analytics by combining data from Oracle Fusion Data Intelligence with data from your external data stores.

If you've an analytics stack built on these external data systems, such as data lakes or third-party data warehouses, you can integrate this with the curated data from Oracle Fusion Data Intelligence to improve your analytics.

> **Note**
>
> This feature has licensing restrictions. See About Licensing.

This capability shares only the data that is flowing through the Oracle Fusion Data Intelligence pipeline. This includes data processed for factory content as well as data augmentations and data applications (such as Descriptive Flexfield Mapper, Configurable Account Analysis, Fusion Accounting Hub, and Data Augmentation Script-based data applications). You can use it for data coming from Oracle Fusion Cloud Applications as well as other third-party data augmentation sources.

Data Share is supported for tables processed by the Oracle Fusion Data Intelligence pipeline. Data Share doesn't support Views or any other objects created for analytics and reporting.

See the list of tables in the reference guides for each pillar. For example, see Oracle Fusion SCM Analytics tables and Tables Without WHO Columns.

> **Note**
>
> Any data that is not processed by the Oracle Fusion Data Intelligence pipeline, even if you have used Oracle Autonomous AI Lakehouse associated with Oracle Fusion Data Intelligence to store it, you can't share it with the Data Share capability.

The system refreshes the Data Share targets with full loads, incremental loads, and Frequent Data Refresh V2. Data Share target refreshes with on-demand data refresh is currently not supported. Currently, the external target data store that you can share with is Oracle Cloud

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Infrastructure Object Storage. For Object Storage, this process shares data in the DELTA or ICEBERG table formats and parquet file formats.

> **Note**
>
> This capability doesn't support Oracle Fusion Data Intelligence instances with a private endpoint; it supports only public instances currently.

To share data, ensure to complete these tasks:

- Perform the applicable prerequisite steps.
- Create a connection to the external system using Manage Connections tile in Data Configuration tile.
- Use the Data Share tile to select the desired warehouse tables and the target connection.

When you share the selected warehouse tables, the Data Share process prepares the data and based on the setup for target data stores, it then pushes the data to the target data bucket in your tenancy. The first time you share, the process loads complete data from the Oracle Fusion Data Intelligence warehouse for the selected datasets into the target data buckets. It automatically refreshes the subsequent incremental and frequently refreshed data on all the configured targets. To share the frequently refreshed data to external data stores, you must use Frequent Data Refresh V2 capability and enable **Data Share for Frequent Data Refresh** in the Pipeline Features section under the Preview Features tab on the Enable Features page. You can add or remove datasets or targets and issue the publish command at any time. After sharing the warehouse tables, you can remove individual tables using the Remove action for the applicable table or remove tables in bulk using the Delete Connections button that gets enabled after you select multiple tables. These options remove the selected warehouse tables from the previously specified targets.

> **Note**
>
> Deletion of modules can update the data share definition. For example, if you delete functional areas, data augmentations, data applications, target data model upgrade, or deploy and undeploy data applications, the system deletes the tables that you had selected for these modules from the data share process.

Topics:

- Perform Prerequisites for Sharing Warehouse Tables with Oracle Cloud Infrastructure Object Storage (Preview)
- Configure the Connection to Oracle Cloud Infrastructure Object Storage (Preview)
- Specify the Tables to Share with an External Data Store (Preview)
- Monitor Data Share

Perform Prerequisites for Sharing Warehouse Tables with Oracle Cloud Infrastructure Object Storage (Preview)

Sharing warehouse tables with Object Storage first requires you to perform prerequisite steps in the Oracle Cloud Infrastructure Console, before moving on to creating a connection in

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Oracle Fusion Data Intelligence to access and share data and metadata files in your object storage buckets.

1. In Oracle Cloud Infrastructure Console, create a data bucket for the Oracle Object Storage Service Targets connector as the destination to access the shared warehouse tables.

   You can either use the same bucket for Delta, Iceberg, and Change Data formats or have three separate buckets; one for Delta format, second for Iceberg format, and a third for Change Data. Ensure that the data bucket is in the same Oracle Cloud Infrastructure region as Oracle Fusion Data Intelligence.
   See Creating an Object Storage Bucket.

2. Define this policy for Oracle Fusion Data Intelligence's resource principal (fawbeyondpublish) in the root compartment of your tenancy to enable Oracle Fusion Data Intelligence to create, update, and delete objects in your object storage bucket:

```
allow any-user
   to { BUCKET_INSPECT, BUCKET_READ, OBJECT_INSPECT, OBJECT_READ,
        OBJECT_OVERWRITE, OBJECT_CREATE, OBJECT_DELETE }
   in tenancy
   where all {
        request.principal.type = 'fawbeyondpublish',
        target.compartment.id = request.principal.compartment.id,
        target.bucket.name='YOUR_TARGET_BUCKET_NAME'
   }
```

> **Note**
>
> The only element of this policy that you should modify is to replace `'YOUR_TARGET_BUCKET_NAME'` with the name of your bucket created in step 1. Don't change any other elements in the policy.

   You can use the same bucket for Delta, Iceberg, and Change Data format, but if you have three separate buckets (one for Delta format, second for Iceberg format, and a third for Change Data, duplicate the above policy, one per bucket name. Don't modify any parts of the policies other than the unique bucket names.

   See Managing Policies for more information.

Configure the Connection to Oracle Cloud Infrastructure Object Storage (Preview)

After performing the prerequisite steps in the Oracle Cloud Infrastructure Console, you can set up a connection to the data bucket in Oracle Fusion Data Intelligence.

1. In Oracle Fusion Data Intelligence **Console**, enable the **Oracle Object Storage Service Targets** preview feature. See Make Preview Features Available.

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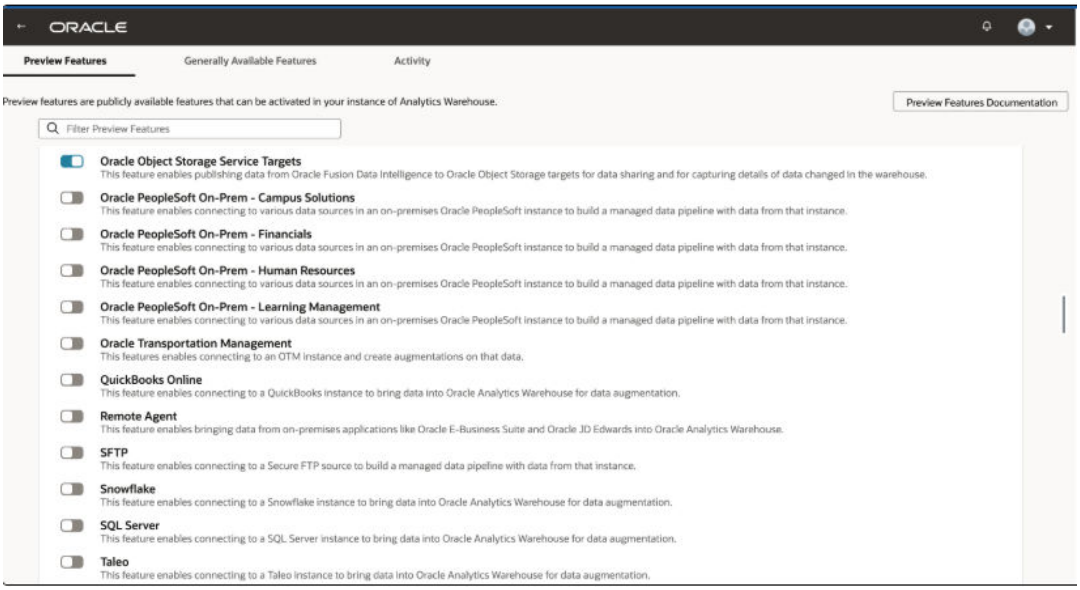
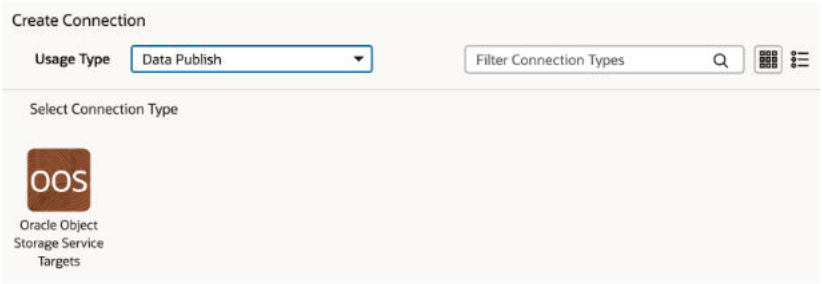


2. Create an Oracle Object Storage Service Targets connection using these instructions:
   a. In Oracle Fusion Data Intelligence Console, navigate to the Manage Connections page, click **Create** and then **Connection**.
   b. In the Create Connection dialog, select **Data Publish** in **Usage Type** and then select **Oracle Object Storage Service Targets** .



   c. In the connection details for Oracle Object Storage Service Targets (OOS), provide the following information:
      i. Connection Name: A name meaningful to your environment
      ii. Connection Code: A unique 3 digit code identifying the connection, such as EXN.
      iii. Namespace: Oracle Cloud Infrastructure namespace of your target bucket
      iv. Bucket Name: Name of your Oracle Cloud Infrastructure bucket for data
      v. Type: Select the applicable format.

> **Note**
>
> You can select Delta, Iceberg, or FDI_TABLE_CHANGE_FORMAT while creating connections for those formats.

      vi. Compartment OCID: OCID of the compartment containing your bucket

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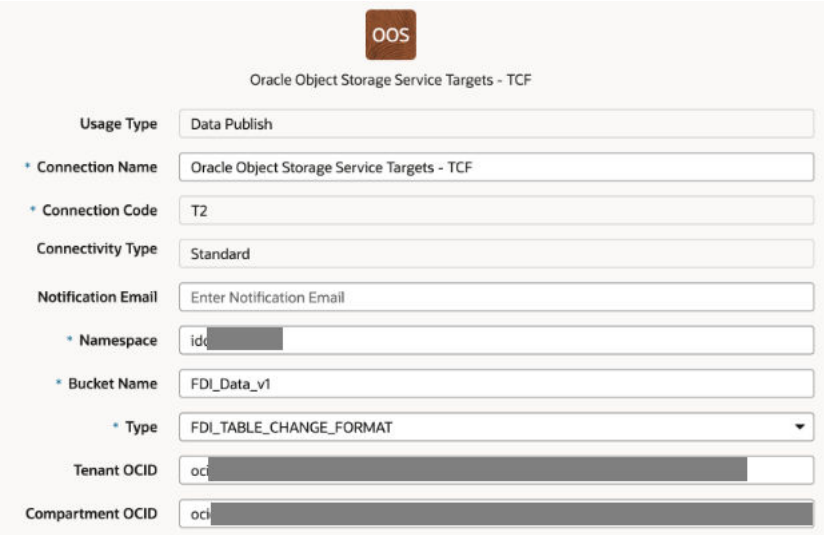
vii. Notification Email: Email to receive alerts (optional)



3. On the Manage Connections page, select **Actions** for your connection and then select **Test Connection**.

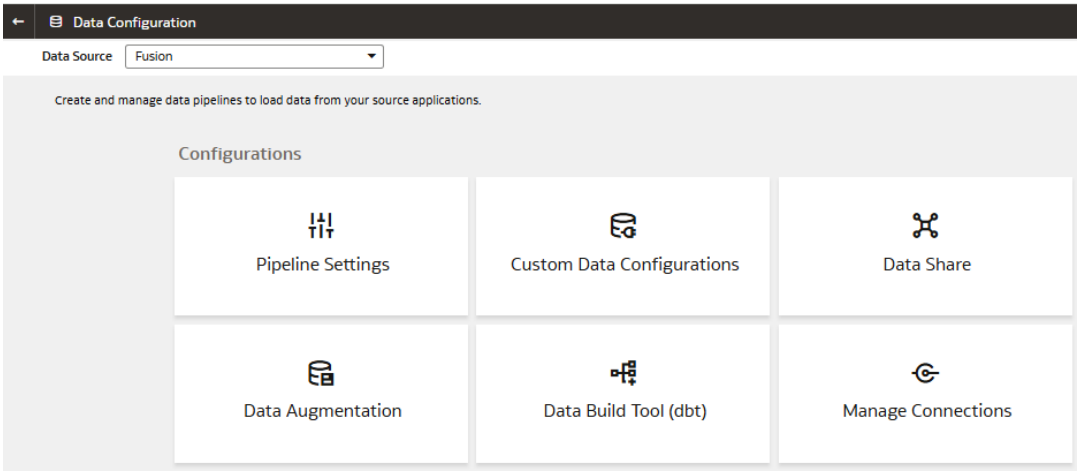
   If your connection fails, recheck these:

   - Namespace
   - Bucket name
   - Compartment OCID
   - Policy that you created (ensure bucket name matches exactly)

Specify the Tables to Share with an External Data Store (Preview)

Once you've performed the prerequisite steps, configured the connection, and ensured that the Test Connection is successful in Oracle Fusion Data Intelligence, you can share warehouse tables with your external data store.

1. On the Data Configuration page, click the **Data Share** tile.



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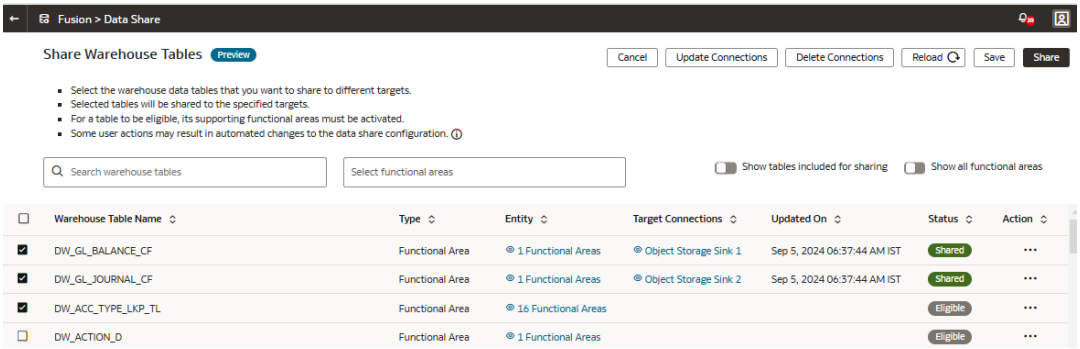
2. On the Data Share page, select the **Include Frequently Refreshed Data** checkbox to include the refreshed data for tables included in frequent data refresh while publishing to the data share target.
3. Select the warehouse data tables that you want to share with different target data stores and click **Edit** under **Target Connections** in the **Action** menu.

   The tables available for sharing are indicated as “Eligible”. It's recommended that you select up to a maximum of 100 tables. If you need to share more than 100 tables, contact Oracle Customer Support.



4. In the Update Target Connections dialog:
   a. Verify that the **Warehouse Table Name** is automatically populated.
   b. Verify that the connection type in **Type** displays either Functional Area or another category depending on the table.
   c. Select the Oracle Object Storage Service Targets connection that you created in **Target Connections**.
   d. Click **Update**.

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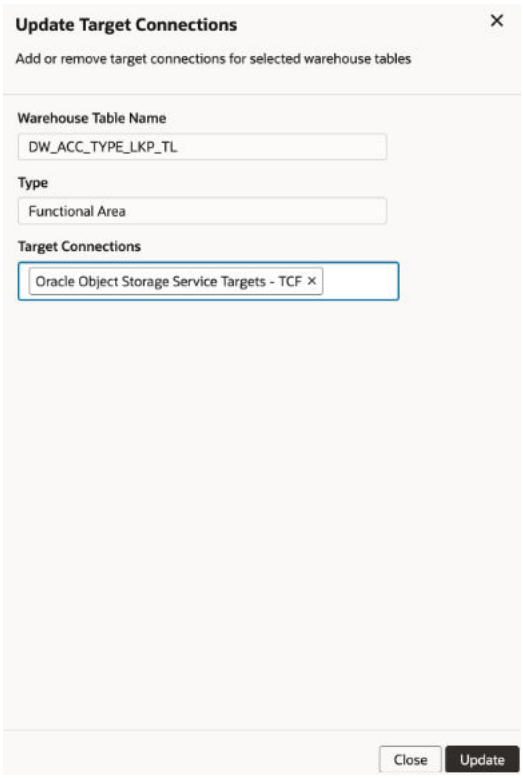

5. Click **Save** and then click **Publish**.

   After you've clicked **Publish**, the status of the selected tables change from **Modified** to **Share in Progress**. When sharing is in progress, you can't perform any configuration until the share process completes. To view the status of the share process, use the Request History tile within the Data Configuration tile. When sharing is completed successfully, the status of the selected tables in the Data Share tile changes to **Shared**.

Monitor Data Share

Monitoring data share enables you to plan downstream tasks, maintain data integrity, and troubleshoot any issues that require data to be available in data share targets.

To monitor the status of data share, you can use Request History or you can use the Oracle Cloud Infrastructure events generated in Oracle Fusion Data Intelligence.

Topics:

- View Data Share History
- Use Data Share Events

View Data Share History

You can view the detailed history of your data share requests for refresh types such as first time share, incremental, and frequent data refresh.

The history enables you to understand how the sharing process is going for different targets and take any corrective action. For each request, you can see the data source, target name, scheduled or start and completion times, status such as In progress, Failed, Completed with Warnings, and Completed, and additional details in summary such as number of tables shared. The data share process has these two steps and you see the status for each step:

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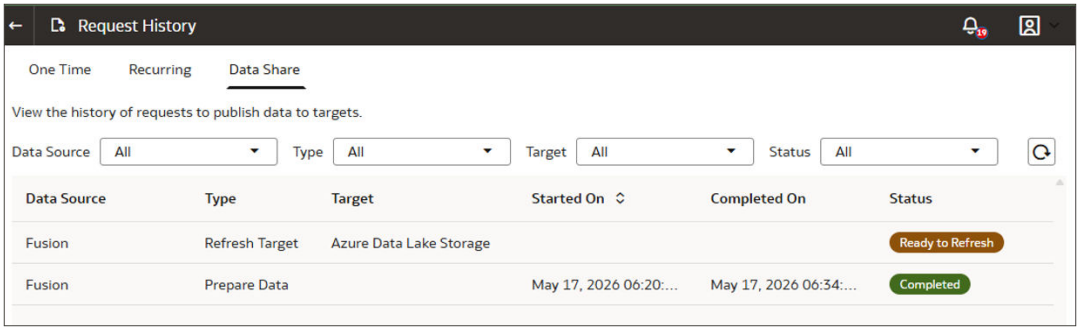
- Prepare Data (1 entry for full load)
- Refresh Target (1 entry for each target for each refresh)

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Configuration** under **Application Administration**.
3. On the Data Configuration page, under **Activity History**, click **Request History**.
4. On the Request History page, click the **Data Share** tab to view the history.



5. In the **Status** column, click the **Information** icon for a request to view additional details.
6. In the Details dialog, click **More Details** to review the reason for a specific status and click **OK** to close the Details dialog.



Use Data Share Events

You can use Oracle Cloud Infrastructure event generated for Data Share to take downstream actions.

For example, you can receive email notifications as soon as the data share is complete. See “DataPipeline Event Type Attributes for Data Share” in DataPipeline Event Type.

Capture Data Changes (Preview)

You can know what data changed in the autonomous data warehouse associated with the Fusion Data Intelligence instance during refresh using the Table Change format designed for capturing data changes in the refresh process.

You can use the change information in the downstream integrations. This capability uses the Data Share feature and pushes the changed data information into a data lake such as Oracle Cloud Infrastructure Object Storage Service. The Oracle Object Storage Service Targets connector with type FDI_TABLE_CHANGE_FORMAT allows Fusion Data Intelligence to publish datasets in the Integration Data Format into your Oracle Cloud Infrastructure Object Storage bucket. After publishing the change data to Oracle Object Storage Service, you can

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read the changes using any standard tools for reading the Object Store files and take downstream actions as needed.

Object Storage Service stores the changes in Parquet files in a hierarchical structure for:

- Each source
- Each table selected to capture changes
- Each change (identified by “System Change Number”)
- Each refresh type
  - Full
  - Incremental
  - Transient_refresh (for FDR V2)
- These actions
  - Insert
  - Update
  - Delete

This mechanism also captures additional metadata for:

- Refresh completion
- Schema
- Markers for latest change and last full refresh

Sample Changed Data Stored in Object Storage Service

This sample lists the change sets corresponding to the system change numbers (SCN) available for a specific dataset.

```
# Listing the DW_PAY_COST_EF changesets for the above/available changeIds/scnIds
important_columns = ["business_unit_id", "person_type_id", "currency_code", "age_in_years", "fdi_scn_id", "fdi_table_change_type", "fdi_change_
df.select(important_columns).orderBy(col("fdi_scn_id").desc()).show(40)
```

```
+----------------+--------------+-------------+-------------+--------------+---------------------+----------------+
|business_unit_id|person_type_id|currency_code|age_in_years|   fdi_scn_id|fdi_table_change_type|fdi_change_type|
+----------------+--------------+-------------+-------------+--------------+---------------------+----------------+
| 300100002693983|            13|          USD|           44|1764065879000|          incremental|          update|
| 300100002693983|            13|          USD|           40|1764065879000|          incremental|          delete|
| 300100002693983|            13|          USD|           44|1764065879000|          incremental|          update|
| 300100002693983|            13|          USD|           40|1764065879000|          incremental|          delete|
| 300100002693983|            13|          USD|           44|1764065879000|          incremental|          update|
| 300100002693983|            13|          USD|           44|1764065879000|          incremental|          update|
| 300100002693983|            13|          USD|           40|1764036690000|          incremental|          update|
| 300100002693983|            13|          USD|           40|1764036690000|          incremental|          update|
| 300100002693983|            13|          USD|           40|1764036690000|          incremental|          update|
| 300100002693983|            13|          USD|           40|1764036690000|          incremental|          update|
| 100000017355519|            13|          USD|         NULL|1763988819000|                 full|          insert|
| 300100002693983|            13|          USD|           35|1763988819000|                 full|          insert|
| 300100002693983|            13|          USD|           37|1763988819000|                 full|          insert|
| 300100002693983|            13|          USD|           38|1763988819000|                 full|          insert|
| 300100048140220|            13|          USD|           37|1763988819000|                 full|          insert|
| 300100048140220|            13|          USD|           37|1763988819000|                 full|          insert|
| 300100002693983|            13|          USD|           54|1763988819000|                 full|          insert|
| 300100002693983|            13|          USD|           41|1763988819000|                 full|          insert|
| 300100002693983|            13|          USD|           42|1763988819000|                 full|          insert|
| 300100002693983|            13|          USD|           42|1763988819000|                 full|          insert|
| 300100002693983|            13|          USD|           42|1763988819000|                 full|          insert|
| 300100002693983|            13|          USD|           42|1763988819000|                 full|          insert|
| 300100002693983|            13|          USD|           42|1763988819000|                 full|          insert|
| 300100002693983|            13|          USD|           42|1763988819000|                 full|          insert|
| 300100002693983|            13|          USD|           42|1763988819000|                 full|          insert|
| 300100002693983|            13|          USD|           42|1763988819000|                 full|          insert|
```

Topics:

- Perform Prerequisites for Sharing Warehouse Tables with Oracle Cloud Infrastructure Object Storage (Preview)

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- Configure the Connection to Oracle Cloud Infrastructure Object Storage (Preview)
- Specify the Tables to Share with an External Data Store (Preview)

Configure Dynamic Aggregation

As a functional administrator, you can specify select dimensions for aggregation to optimize query performance and improve report execution.

You can create a custom aggregate table with lesser number of records based on the dimensions that you select from the base table. After you publish the dynamic aggregation and run a report that has the dimensions added as part of dynamic aggregation, the report uses the dynamic aggregated fact. If, in your report, you've selected a dimension that isn't part of the dynamic aggregation, then the report uses an existing prebuilt fact.

The data in the aggregated table is compressed based on the selected dimensions. The default threshold value for the compression is 20. For example, you can select up to 20% dimensions or lesser of the base fact rows. The compression value is the number of compressed rows divided by the number of total base fact rows.

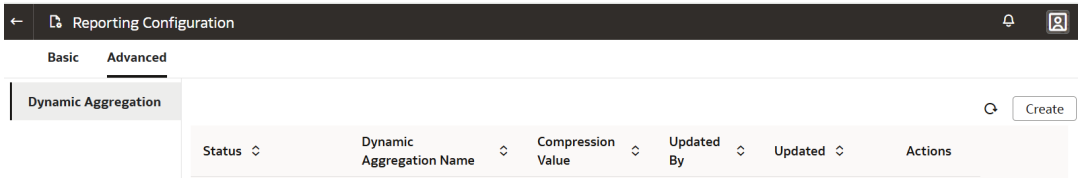
> **Note**
>
> While the pipeline is running, there may be a brief period during which discrepancies can occur between the base fact data and the dynamic aggregates.

You can validate the dynamic aggregation by enabling the Data Visualization Developer options and review the Execution Log to confirm that the applicable workbook is querying the desired aggregated table. See Developer Options.

Subject areas that support dynamic aggregation You can configure dynamic aggregation for these subject areas.

Functional Area	Subject Area
General Ledger	Financials - GL Balance Sheet
Project Billing	PPM - Project Revenue
Project Control	PPM - Project Budgets
Project Costing	PPM - Project Costs

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, **Reporting Configuration** under **Application Administration**.
3. On the Reporting Configuration page, under the Advanced tab, select **Dynamic Aggregation** and then click **Create**.



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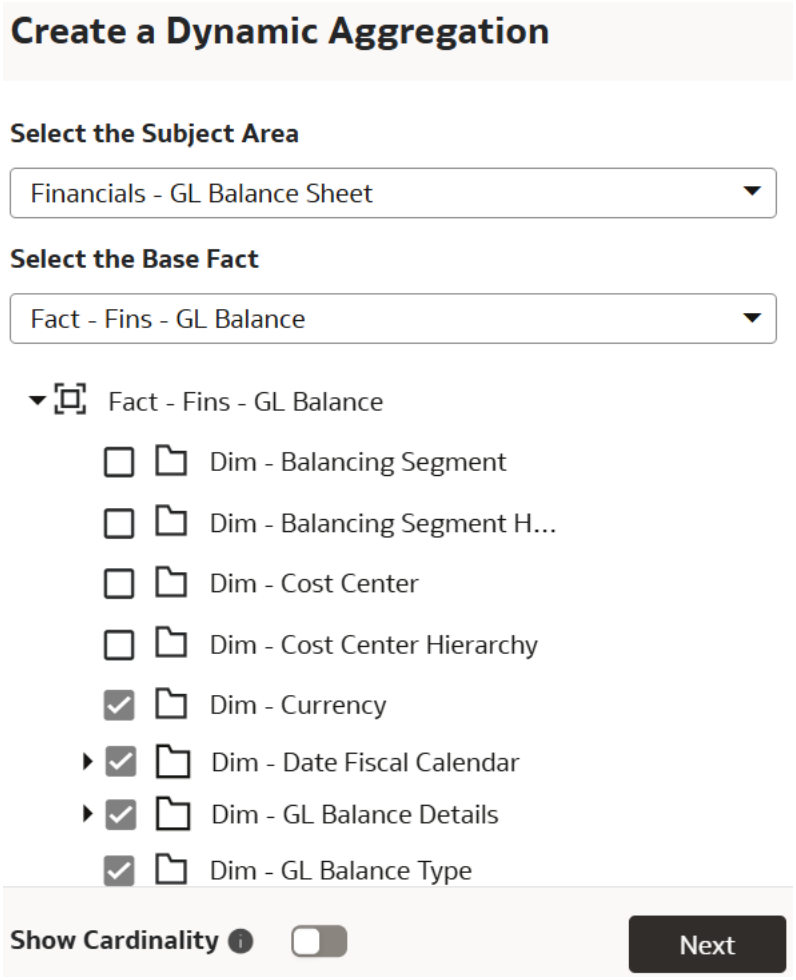
4. In Create a Dynamic Aggregation, select the subject area, base fact, enable the **Show Cardinality** toggle to view the cardinality of each dimension with respect to the fact, and then the applicable dimensions.

   The cardinality value enables you to decide whether to select the dimension or not.



5. Click **Next**.
6. Review your aggregate base fact and click **Save**.
7. In the Dynamic Aggregation section under the Advanced tab on the Reporting Configurations page,click the Actions option for your aggregate base fact, and then select **Publish** to complete the dynamic aggregation configuration.

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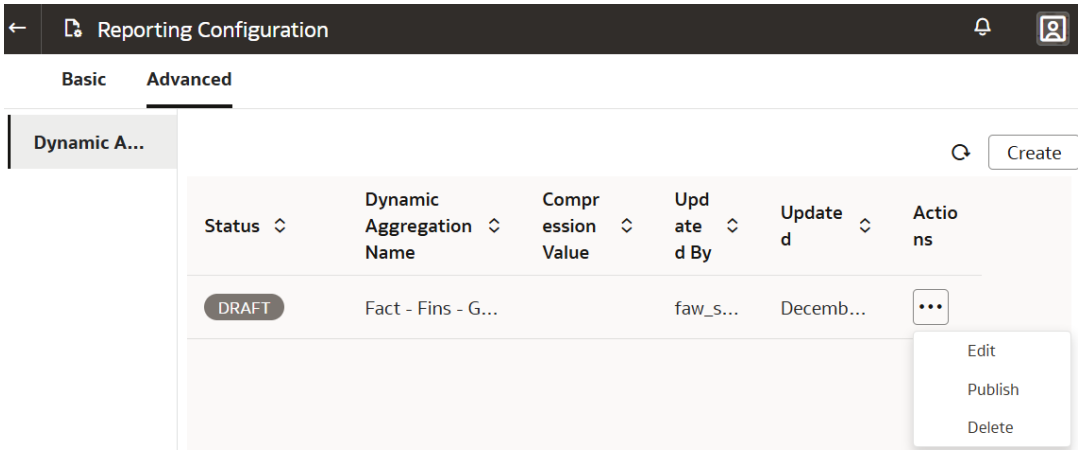

Connect to an Autonomous AI Lakehouse

Oracle Fusion Data Intelligence provides three ways to connect to an Autonomous AI Lakehouse: Oracle Analytics Cloud Connector, Database Actions (SQL Developer Web), and SQL Developer desktop client.

The Oracle Analytics Cloud connector provides a way to query database objects for analysis, visualization, and reporting. You can query database objects by configuring Oracle Analytics Cloud datasets or writing SQL manually.

Database Actions (SQL Developer Web) and SQL Developer desktop client allow you to create, edit, and query database objects. You can also use them to perform administrative tasks such as creating users and database schemas and resetting passwords. These tools help you investigate, debug, and validate data.

Oracle recommends using Database Actions (SQL Developer Web) to leverage the modern cloud interface and its additional features.

Topics:

- Configure Autonomous AI Lakehouse Credentials for Oracle Fusion Data Intelligence
- Connect Fusion Data Intelligence to an Autonomous AI Lakehouse with Database Actions (SQL Developer Web)
- Connect Fusion Data Intelligence to an Autonomous AI Lakehouse with Oracle Analytics Cloud
- Connect Fusion Data Intelligence to an Autonomous AI Lakehouse with SQL Developer Desktop Client

Configure Autonomous AI Lakehouse Credentials for Oracle Fusion Data Intelligence

You need to configure credentials of the OAX_USER and ADMIN users and download a wallet file to connect to an Autonomous AI Lakehouse.

All connection methods initially require credentials for ADMIN and OAX_USER. You must reset these credentials annually, or configure them if you're performing this task for the first time.

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The ADMIN can perform certain important tasks, such as changing OAX_USER's password, but can't see pipeline objects or data. The OAX_USER can browse and query pipeline objects and data. The following steps ensure that both users have correct credentials that you can use for connecting to an Autonomous AI Lakehouse.

- To reset the ADMIN user password, see Update the Administrator Password for Oracle Autonomous AI Lakehouse.
- To reset the OAX_USER password, see Reset the Password for OAX_USER and Custom Schemas.
- In addition to the ADMIN and OAX_USER passwords, you need to download the client credential wallet file. To download the wallet, see Download Client Credentials (Wallets).
- To update the default frequency for rotating your instance wallet, see Configure the Wallet Rotation Frequency for the Oracle Autonomous AI Lakehouse.

Connect Fusion Data Intelligence to an Autonomous AI Lakehouse with Database Actions (SQL Developer Web)

Follow these steps to connect to Autonomous AI Lakehouse with Database Actions (SQL Developer Web).

Topics:

- Configure Autonomous AI Lakehouse Credentials for Oracle Fusion Data Intelligence (if not already done)
- Query Tables for Fusion Data Intelligence from Autonomous AI Lakehouse as OAX_USER
- Query the Autonomous AI Lakehouse System Tables as ADMIN

Query Tables for Fusion Data Intelligence from Autonomous AI Lakehouse as OAX_USER

Verify proper configuration of your Autonomous AI Lakehouse connection by running a sample query.

1. Sign in to Database Actions as OAX_USER.
2. On the **Development** tab, click the **SQL** label to open SQL Developer Web. Select **All Objects** in the **Objects** dropdown.

   You should see all objects for OAX USER in the **Navigator**.
3. Run this query to verify proper configuration:

   ```
   select * from DW_CUSTOMER_LOCATION_D
   ```

Query the Autonomous AI Lakehouse System Tables as ADMIN

Verify proper configuration of your Autonomous AI Lakehouse connection by running a sample query.

1. Sign in to Database Actions as ADMIN.
2. On the **Development** tab, click the **SQL** label to open SQL Developer Web.

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3. Run this query to verify proper configuration:

```
select sum(bytes)/1024/1024/1024/1024 as USED_STORAGE_TB from dba_segments
      where owner not in ('SSB', 'SH');
```

Connect Fusion Data Intelligence to an Autonomous AI Lakehouse with Oracle Analytics Cloud

Follow these steps to connect to an Autonomous AI Lakehouse with Oracle Analytics Cloud.

Topics:

- Configure Autonomous AI Lakehouse Credentials for Oracle Fusion Data Intelligence (if not already done)
- Configure the Connection for OAX_USER in Oracle Analytics Cloud
- Create an Oracle Analytics Cloud Dataset

Configure the Connection for OAX_USER in Oracle Analytics Cloud

You can connect to an Autonomous AI Lakehouse with Oracle Analytics Cloud.

When you configure the connection, select the service name with the "low" prefix in its name. Connecting with the "high" or "medium" service might lead to performance issues in reports in Fusion Data Intelligence and delays in completion of daily incremental data pipeline loads. See Database Service Names for Autonomous Transaction Processing and Autonomous JSON Database for more information.

1. Sign in to your Fusion Data Intelligence instance.
2. Click **Go to Home Page**.
3. Click **Navigator** and then **Data**.
4. Click the **Connections** tab.
5. On the Oracle Analytics page, click **Create**, click **Connection**, then click **Oracle Autonomous Data Warehouse**.
6. Enter these values and then click **Save**:
   a. **Connection Name**: `ADW - OAX_USER`
   b. **Description**: `ADW - OAX_USER`
   c. **Client Credentials**: Click **Select**, then browse to select the `wallet.zip` file.
   d. **Username**: `OAX_USER` (default)
   e. **Password**: The OAX_USER password.
   f. **Service Name**: Select **<service name>-low**. Using low prevents pipeline conflicts.
7. In the **Connections** tab, click the ellipsis icon to the right of the name of the connection you just created to open the **Actions** menu and click **Inspect**.
8. Click **Access** and then **Roles**.
9. Type `ServiceAdmin` in the **Search By Name** field, then click to add it.
10. Click the **Full Control** radio button for the ServiceAdmin user.
11. Click **Save** and then **Close**.

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Create an Oracle Analytics Cloud Dataset

Verify proper configuration of your Oracle Analytics Cloud connection to the Autonomous AI Lakehouse by creating a basic dataset.

See Create a Dataset From a Connection.

Connect Fusion Data Intelligence to an Autonomous AI Lakehouse with SQL Developer Desktop Client

You can optionally use the SQL Developer desktop client to connect to Autonomous AI Lakehouse. You need to configure credentials, and then set up connections for both ADMIN and OAX_USER.

> **Note**
>
> Oracle recommends using Database Actions (SQL Developer Web) to leverage the modern cloud interface and its additional features.

Topics:

- Configure Autonomous AI Lakehouse Credentials for Oracle Fusion Data Intelligence
- Configure the Connection to Autonomous AI Lakehouse for ADMIN with SQL Developer Desktop Client
- Configure the Connection to Autonomous AI Lakehouse for OAX_USER with SQL Developer Desktop Client

Configure the Connection to Autonomous AI Lakehouse for ADMIN with SQL Developer Desktop Client

You can use the SQL Developer desktop client to connect to Autonomous AI Lakehouse. However, this connection method is optional, and using Database Actions (SQL Developer Web) is the preferred method.

When you configure the connection, select the service name with the "low" prefix in its name. Connecting with the "high" or "medium" service might lead to performance issues in reports in Fusion Data Intelligence and delays in completion of daily incremental data pipeline loads. See Database Service Names for Autonomous Transaction Processing and Autonomous JSON Database for more information.

1. Launch SQL Developer.
2. In the **Connections** pane, click **New Connection**.
3. Create an SQL Developer connection for the ADMIN user by setting the following values in the **New/Select Database Connection** dialog:
   a. Define a **Name** for the connection, such as `PROD_ADMIN`.
   b. Set the **Username** to `ADMIN`.
   c. Enter the password for the `ADMIN` user.
   d. Set the **Connection Type** to **Cloud Wallet**.

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e. For the **Configuration file**, click **Browse** and select the `wallet.zip` file.

f. **Service**: Select **<service name>-low**. Using low prevents pipeline conflicts.

g. When connecting with a virtual private network (VPN), enter details in the **Proxy** tab.

h. Click **Test** to validate the connection.

i. Click **Save**.

j. Click **Connect**.

4. Run this query to verify proper configuration:

```
select sum(bytes)/1024/1024/1024/1024 as USED_STORAGE_TB from dba_segments
      where owner not in ('SSB', 'SH');
```

Configure the Connection to Autonomous AI Lakehouse for OAX_USER with SQL Developer Desktop Client

You can use the SQL Developer desktop client to connect to Autonomous AI Lakehouse.

When you configure the connection, select the service name with the "low" prefix in its name. Connecting with the "high" or "medium" service might lead to performance issues in reports in Fusion Data Intelligence and delays in completion of daily incremental data pipeline loads. See Database Service Names for Autonomous Transaction Processing and Autonomous JSON Database for more information.

1. Launch SQL Developer.
2. In the **Connections** pane, click **New Connection**.
3. Create an SQL Developer connection for OAX_USER. Set the following values in the **New/Select Database Connection** dialog:

   a. Define a **Name** for the connection, such as `PROD_OAX_USER`.

   b. Set the **Username** to `OAX_USER`.

   c. Enter the password for OAX_USER.

   d. Set the **Connection Type** to **Cloud Wallet**.

   e. For the **Configuration file**, click **Browse** and select the `wallet.zip` file.

   f. **Service Name**: Select **<service name>-low**. Using low prevents pipeline conflicts.

   g. When connecting with a virtual private network (VPN), enter details in the **Proxy** tab.

   h. Click **Test**.

   i. Click **Save**.

   j. Click **Connect**.

4. Expand **Synonyms** to see all of the prebuilt synonyms for OAX_USER.
5. Run this query to verify proper configuration:

```
SELECT * FROM DW_CUSTOMER_LOCATION_D
```


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View the Warehouse Refresh Statistics

Using an additional mechanism, you can view the details of data refresh in the warehouse and the tables that got changed.

The following three drill down tables contain information that you can use for data refresh details. To view these tables, you can use tools such as SQL Developer and connect to the Autonomous AI Lakehouse associated with your Fusion Data Intelligence instance as OAX_USER. These tables will be populated for your instance after the feature is available. The tables retain values for about 6 months and then archived.

This capability is available in a phased rollout.

Table	What does it contain?	When is it updated?
FDI_REFRESH_SUMMARY	Summary of each data refresh including scheduled time, completion time and published record count. One row for each refresh.	Updated when the first stage of the refresh process is completed. For single stage refreshes which means it is at the end of the refresh process, the system updates this table when data is published. For details about data refresh stages, see Schedule Incremental Data Refreshes.
FDI_REFRESH_STAGES	Contains completion time for refresh stages. One row for each stage.	Updated at completion of each stage for Priority, Primary, Secondary, as applicable.
FDI_REFRESH_FACTORS	Factors affecting each refresh. One row for each factor, as applicable.	Updated if there are any factors that affected the refresh. Supported factors are source is in maintenance and customer High service ADW sessions.
FDI_REFRESH_FACTOR_DETAILS	Contains details about the factors that impacted each refresh.	Updated if there are any factors that affected the refresh. For each factor, this table contains the DETAILS_KEY and DETAILS_VALUE.

Table Schema Details

Following are the schema details of these tables:

FDI_REFRESH_SUMMARY

Column	Data Type	Values
REFRESH_ID	VARCHAR2	Unique ID to join with other tables
SOURCE_TYPE_CODE	VARCHAR2	All supported sources such as `FUSION`, `NETSUITE`, `BIP`, `EBS`, and `SALESFORCE`.

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Column	Data Type	Values
REFRESH_TYPE	VARCHAR2	• ACTIVATION_SCHEDULED, see Activate a Data Pipeline for a Functional Area. • ACTIVATION_RUN_NOW, see Activate a Data Pipeline for a Functional Area. • ONDEMAND_REFRESH, see Refresh a Data Pipeline for a Functional Area. • SCHEDULED_REFRESH, see Schedule Incremental Data Refreshes. • APPLICATION_UPGRADE, see Manage Application Updates. • RELOAD_SOURCE, see Reset and Reload the Data Source. • DATA_MAINTENANCE, see Schedule Data Maintenance. • SCHEDULED_REFRESH_PRIORITY, see Schedule Incremental Data Refreshes. • FREQUENT_DATA_REFRESH_V1, see Schedule Frequent Refreshes of Data with Original Refresh Mechanism. • DEPLOY_CUSTOM_DATA_CONFIG, data refresh when a data application is deployed. For example, when you activate the descriptive flex fields, see Activate the Descriptive Flex Fields.

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Column	Data Type	Values
NUM_STAGES	NUMBER	1 to 4 (Stages refer to the number of priority refresh requests and the post publish stage. For details of different stages, see Schedule Incremental Data Refreshes). The following examples show the value for NUM_STAGES and the names of those stages populated in the FDI_REFRESH_STAGES table: • Job without priority: NUM_STAGES = 2 DATA_PUBLISHED POST_PROCESSING • Incremental with priority: NUM_STAGES = 3 PRIO_DATA_PUB_ORD_0 DATA_PUBLISHED POST_PROCESSING • Multistage incremental without selecting priority, secondary (index file has 1): NUM_STAGES = 2 DATA_PUBLISHED POST_PROCESSING • Multistage incremental without selecting priority dataset (index file has 1,2): NUM_STAGES = 3 PRIO_DATA_PUB_ORD_1 DATA_PUBLISHED POST_PROCESSING • Multistage incremental without primary (index file has 0,2): NUM_STAGES = 3 PRIO_DATA_PUB_ORD_0 DATA_PUBLISHED POST_PROCESSING • Multistage incremental without primary (index file has 0,1): NUM_STAGES = 3 PRIO_DATA_PUB_ORD_0 DATA_PUBLISHED POST_PROCESSING • Multistage incremental(index file has 0,1,2): NUM_STAGES = 4 PRIO_DATA_PUB_ORD_0 PRIO_DATA_PUB_ORD_1 DATA_PUBLISHED POST_PROCESSING
STATUS	VARCHAR2	IN PROGRESS, COMPLETED
SCHEDULED_TIME	TIMESTAMP	-
START_TIME	TIMESTAMP	-
DATA_PUBLISHED_TIME	TIMESTAMP	DATA_PUBLISHED value from FDI_REFRESH_STAGES

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Column	Data Type	Values
COMPLETION_TIME	TIMESTAMP	-
PUBLISHED_REC_COUNT	NUMBER	-

FDI_REFRESH_STAGES

Column	Data Type	Values
REFRESH_ID	VARCHAR2	Unique ID to join with other tables

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Column	Data Type	Values
STAGE_NAME	VARCHAR2	Names of stages in the scheduled incremental refresh. See Schedule Incremental Data Refreshes. The following examples show the values in NUM_STAGES column of the FDI_REFRESH_SUMMARY table and the corresponding values in this column: • Job without priority: NUM_STAGES = 2 DATA_PUBLISHED POST_PROCESSING • Incremental with priority: NUM_STAGES = 3 PRIO_DATA_PUB_ORD_0 DATA_PUBLISHED POST_PROCESSING • Multistage incremental without selecting priority, secondary (index file has 1): NUM_STAGES = 2 DATA_PUBLISHED POST_PROCESSING • Multistage incremental without selecting priority dataset (index file has 1,2): NUM_STAGES = 3 PRIO_DATA_PUB_ORD_1 DATA_PUBLISHED POST_PROCESSING • Multistage incremental without primary (index file has 0,2): NUM_STAGES = 3 PRIO_DATA_PUB_ORD_0 DATA_PUBLISHED POST_PROCESSING • Multistage incremental without primary (index file has 0,1): NUM_STAGES = 3 PRIO_DATA_PUB_ORD_0 DATA_PUBLISHED POST_PROCESSING • Multistage incremental(index file has 0,1,2): NUM_STAGES = 4 PRIO_DATA_PUB_ORD_0 PRIO_DATA_PUB_ORD_1 DATA_PUBLISHED POST_PROCESSING
COMPLETION_TIME	TIMESTAMP	-

FDI_REFRESH_FACTORS

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Column	Data Type	Values
REFRESH_ID	VARCHAR2	Unique ID to join with other tables
FACTOR_CODE	VARCHAR2	• START_DELAY_REASON - Reason why the scheduled refresh job didn't start at the scheduled time and how long the refresh job was delayed. Additional details about the reason for delay is recorded in FDI_REFRESH_FACTOR_DETAILS. Possible reasons for the job delay: Another job is in progress, or the source is disabled, or the source health check failed. • SOURCE_MAINTENANCE - The time the refresh process waited because the source system was under maintenance. • CUSTOMER_HIGH_ADW_SERVICE - The maximum number of concurrent Autonomous AI Lakehouse user sessions using HIGH service observed during data refresh process. See Usage Guidelines for Autonomous AI Lakehouse Associated with Oracle Fusion Data Intelligence. • CUSTOMER_DATASET_LONG_EXTRACTION - Number of data augmentations for which the extraction took a long time.
FACTOR_DETAILS	VARCHAR2	Additional details for the factor such as minutes or number of sessions. For example, the number of minutes if FACTOR_CODE is SOURCE_MAINTENANCE and the number of sessions if FACTOR_CODE is CUSTOMER_HIGH_ADW_SERVICE.

FDI_REFRESH_FACTOR_DETAILS

Column	Data Type	Values
REFRESH_ID	VARCHAR2	Unique ID to join with other tables
FACTOR_CODE	VARCHAR2	CUSTOMER_DATASET_LONG_EXTRACTION - Number of data augmentations for which the extraction took a long time.

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Column	Data Type	Values
DETAILS_KEY	VARCHAR2	Name of the data augmentation for which extraction took long.
DETAILS_VALUE	VARCHAR2	Time taken for extraction for the data augmentation.

Here are some sample queries to use these tables:

- View Refresh Summary for the Last 1 Day using this query:

```
SELECT * FROM FDI_REFRESH_SUMMARY WHERE COMPLETION_TIME > SYSDATE - 1;
```

- View Stage Details for a Specific Refresh using this query:

```
SELECT * FROM FDI_REFRESH_STAGES WHERE REFRESH_ID = <REFRESH_ID>;
```

- View Impacted Refresh Factors by Refresh ID using this query:

```
SELECT * FROM FDI_REFRESH_FACTORS WHERE REFRESH_ID = <REFRESH_ID>;
```

- • View Impacted Refresh Factor Details by Refresh ID using this query:

```
SELECT * FROM FDI_REFRESH_FACTOR_DETAILS WHERE REFRESH_ID = <REFRESH_ID>
AND FACTOR_CODE=<Factor code. for
example:'CUSTOMER_DATASET_LONG_EXTRACTION'>; --View specific Refresh and
Factor details
```

View Changed Tables

To view the tables that got changed, you can use the FDI_REFRESHED_DATASETS table. It shows the warehouse tables refreshed and the time-stamp at which they are refreshed.

Here are some sample queries:

- View all the datasets that are refreshed using this query:

```
SELECT table_name, to_char(last_refresh_time,'DD-MON-YYY HH24:MI:SS') as
last_refresh_datetime FROM fdi_refreshed_datasets;
```

- View all the datasets refreshed during last 2 days using this query:

```
SELECT * FROM fdi_refreshed_datasets WHERE last_refresh_time > sysdate - 2;
```

- View all the datasets refreshed during last 1 hour using this query:

```
SELECT * FROM fdi_refreshed_datasets where last_refresh_time > sysdate-
INTERVAL '1' HOUR;
```

Example Table Details

The following example displays the data inserted and updated into the FDI_REFRESH_SUMMARY, FDI_REFRESH_STAGES, and FDI_REFRESH_FACTORS tables during incremental refresh for the source FUSION running 3 stages (Priority, Primary,

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and Secondary). Assume the unique for the tenant refresh instance id is 2508290162. All the times shown are in UTC.

Here's the information in each of the tables at the end of the successful completion of the refresh.

FDI_REFRESH_SUMMARY

SOURCE_TYPE_CODE	REFRESH_TYPE	REFRESH_ID	NUM_STAGES	STATUS	SCHEDULED_TIME	COMPLETION_TIME	PUBLISHED_REC_COUNT
FUSION	DataRefresh	2508290162	4	Completed	29-Aug-25 12.05.00.000 AM	29-Aug-25 09.35.00.000 AM	1234102011

FDI_REFRESH_STAGES

REFRESH_ID	STAGE_NAME	COMPLETION_TIME
2508290162	PRIO_DATA_PUB_ORD_0	29-Aug-25 04.15.00.000 AM
2508290162	PRIO_DATA_PUB_ORD_1	29-Aug-25 06.55.00.000 AM
2508290162	DATA_PUBLISHED	29-Aug-25 08.58.00.000 AM
2508290162	POST_PROCESSING	29-Aug-25 09.35.00.000 AM

FDI_REFRESH_FACTORS

REFRESH_ID	FACTOR_CODE	FACTOR_DETAILS
2508290162	SOURCE_MAINTENANCE	232
2508290162	CUSTOMER_HIGH_ADW_SERVICE	1
2508290162	OTHER_REQUESTS_IN_PROGRESS	1
2508290162	CUSTOM_EXTRACTION	100
2508290162	CUSTOMER_DAS	58

Subject Areas for Warehouse Refresh Statistics

In the Platform 26.R3 release, Oracle Fusion Data Intelligence includes new subject areas to build visualizations for analyzing data refresh.

Common - New Warehouse Refresh Statistics Summary

Description
The New Warehouse Refresh Statistics subject area provides new insights into data refreshes. It helps you track the different types of data refreshes for different sources, monitor refresh stages, identify refresh failures, and review rejected records. When used alongside data validation, it supports reconciling data between Oracle Fusion Cloud Applications and Oracle Fusion Data Intelligence, helping improvement in data accuracy and quality over time.

Common - Warehouse Refresh Stages

Description
The Warehouse Refresh Stages subject area provides insights into stages of data refreshes. It helps you track the completion for different stages of data refreshes such as priority, primary,

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secondary, and post-processing. Use this alongs with the New Warehouse Refresh Statistics subject area to get the summary and stage details of each refresh.

Common - Warehouse Refresh Factors

Description
The Warehouse Refresh Factors subject area provides insights into the factors that affected data refreshes. Use this along with the New Warehouse Refresh Statistics subject area to get details on the factors such as source maintenance, and long extractions that affect the overall data refresh performance.

Common - Warehouse Refresh Factor Details

Description
The Warehouse Refresh Factor Details subject area provides insights into additional details for the factors that affected data refreshes. Use this along with the Warehouse Refresh Factors subject area to get additional details on factors such as the time taken by long extractions for data augmentations that affect the overall data refresh performance.

Common - Warehouse Refresh Tables

Description
The Warehouse Refresh Tables subject area provides insights for the tables that got refreshed during a specific time period.

Business Questions

This subject area can answer the following business questions for different time horizons such as daily, monthly, and yearly:

- When was the warehouse last refreshed, by each source, by refresh type?
- What refreshes were performed in a specific period of time and how long did they take?
- What is the trend for published record counts for a specific refresh type over a time period in relation to how long it takes?
- How long did the refreshes take? What are the trends?
- How many internal stages did a specific request have and when did they complete?
- What factors affected a refresh?
- How did different factors affect a refresh?
- How often a specific factor affects refreshes? For example, how many times SOURCE_MAINTENANCE affected refreshes?
- What datasets were refreshed and when in the specified period of time?
- Which tables modules have high percentage of rejected records?
- What are the specific records that have been rejected for a certain module?
- What errors did the pipeline encounter, by specific jobs?
- Which refresh jobs fail most frequently?
- What are the cascading effects, for example what other related records also fail due to a certain failure of a job?

Duty Roles

The Data Warehouse Refresh Analysis Duty role secures access to this subject area. See Common Duty Roles.

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Primary Navigation

Folder: /Shared Folders/Common/Warehouse Refresh Statistics

Workbook: Warehouse Refresh Statistics

Special Considerations

None.

About Refreshing Your data

Keeping the data warehouse refreshed is essential to provide analytics users with the most up-to-date insights.

In Oracle Fusion Data Intelligence, you can refresh data in several ways to meet your business needs. For example, by refreshing modules (functional areas, data applications, and data augmentations), and specific data warehouse tables, where applicable. This section summarizes how you can manage the data refresh processes in Oracle Fusion Data Intelligence.

Types of Data Refreshes

Depending on your business requirements, you can schedule incremental data refreshes, intraday frequent data refreshes, or full data reloads in the warehouse.

Prior to scheduling and performing data refreshes, ensure to review the data processing limits. See About Data Processing Limits.

Topics:

- Incremental Data Refresh
- Intra-day Frequent Data Refreshes
- Full Reload

Incremental Data Refresh

Incremental refresh updates the warehouse with changes since the previous refresh.

You can use these incremental refresh types:

- **Scheduled Refresh** – The system refreshes the data for all the modules and tables according to the schedule defined in the pipeline parameters. You can schedule this to run daily, weekly, or monthly according to your business needs. See About Pipeline Parameters.
- **Prioritized Refresh** – If you want to make certain data refreshed first even within the incremental refresh, you can select those warehouse tables for prioritized refresh. See Prioritize Datasets for Incremental Refresh (Preview).
- **Functional Area Schedule Override** - If some functional areas don't need to be refreshed as often as others, you can override the schedule using the Functional Area Schedule Override option. This lets you stagger refreshes as needed and reduces the processing load from daily incremental pipeline refreshes. See Override Data Pipeline Schedules for Functional Areas (Preview)

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- **Refresh Data On-demand** – If you need to incrementally refresh data for a module right away, you can run an on-demand (ad hoc) data refresh. You can perform on-demand refresh for functional areas, data applications, and data augmentations. See Refresh a Data Pipeline for a Functional Area.

Intra-day Frequent Data Refreshes

If you want to capture intra-day data refreshes between incremental refreshes for operational analytics use cases, you can schedule Frequent Data Refreshes for data in functional areas, data augmentations, data applications, and warehouse tables.

See Schedule Frequent Data Refreshes.

Full Reload

Full reload updates the warehouse data starting with the initial extract date.

It involves:

- **Module Activation**: This is done when you activate a module. Activation is typically a one-time activity and might involve activating multiple modules. It can take significant amount of time, even days, depending on the number of modules and other performance related factors. See Activate a Data Pipeline for a Functional Area.
- **Data Reload with Data Maintenance**: In some cases, you may need to fully reload data for a specific module even after activating the module. A data reload re-extracts relevant data starting from the initial extract date and loads it into the warehouse, which can take significant time. You can schedule the reload of data for functional areas, data applications, and data augmentations. These reloads run according to the Data Maintenance schedule. Because full reloads can take significant time, you must perform them only for the required modules and ensure that their schedule doesn't interfere with other critical refreshes. See Schedule Data Maintenance.
- **Reset and Reload the Data Source**: To discard all the existing data in the warehouse for a specific source and start over by re-extracting the data from the initial extract date, you must reset and reload the data source. Since this is done for all modules and tables for this source, it can take significant time and the system doesn't perform any other refreshes while reset and reload is in progress. See Reset and Reload the Data Source.
- **Reset Warehouse**: To discard all the existing data in the warehouse and bring the warehouse to “factory” settings, you can reset the data warehouse. You must reactivate all the data pipelines for all the modules and reload data from the initial extract date. See Reset the Data Warehouse.

Order of Data Refreshes

For a given source, the pipeline can run only one refresh at a time.

For example, if a Scheduled Refresh is in progress, the system places the Frequent Data Refresh for that source in queue until the scheduled incremental refresh completes. Keep this in mind when setting refresh schedules and when initiating on-demand refreshes. Refreshes for different sources can run in parallel.

The system processes refresh requests in the order they’re received. If a refresh is already running, the system places additional requests in a queue. Scheduled incremental refresh has the highest priority and will run first if multiple requests are queued. See Schedule Incremental Data Refreshes. Frequent Data Refreshes are next in priority, and all other refreshes run in the order they were submitted. Contact Oracle customer support if you need a different order.

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About Monitoring Data Refreshes

Monitoring data refreshes is critical to ensuring your business analysts and decision-makers are working with the most current information. Because data pipelines can take several hours to execute, proactive monitoring helps you plan downstream tasks, maintain data integrity, and troubleshoot performance issues before they impact reporting.

To monitor the status of data refreshes, you can use the following:

- **Request History**: To view the details of one-time and recurring refreshes in the Administration Console, use the Request History tab on the Data Configuration page. For example, to view status of activations or on-demand ad hoc refreshes that are executed immediately, use the One-Time tab. For scheduled incremental refresh or frequent data refresh that the system processes at schedule time, use the Recurring tab. In addition to completion times, Request History can help you understand why a refresh is queued or if there is any action required by you. See View Request History.
- **Event Notifications with Oracle Cloud Infrastructure Events**: To take downstream actions based on the status of different requests, use the Oracle Cloud Infrastructure events generated in Oracle Fusion Data Intelligence. For example, you can send an email notification, using the Oracle Cloud Infrastructure event generated for DataPublished, when the scheduled incremental data refresh process publishes the data. See Enable Event Notifications (Preview) and Event Types, Attributes, and Attribute Values for Event Rules.
- **Warehouse Refresh Statistics**: Oracle Fusion Data Intelligence populates certain tables in the warehouse that you can use to understand different statistics related to data refreshes. You can query these tables or create your own visualizations to answer questions about data refresh completion trends, factors affecting data refresh, and tables refreshed for a certain period. See View the Warehouse Refresh Statistics.
- **Data Refresh Estimate**: You can view the estimated refresh completion time for daily pipelines on the Pipeline Settings page in the Estimated Refresh Completion field. In addition, you can get notified of changes in data refresh estimates using the Oracle Cloud Infrastructure events. See View the Estimated Data Refresh Time.
- You can use AI Concierge to ask questions about your data refreshes. See Access AI Concierge (Preview).

About Data Refresh Performance

Data refresh in Oracle Fusion Data Intelligence is a complex process. Some day-to-day variation in refresh duration is expected.

A typical data refresh includes the following processes:

- Extracting data from the Oracle Fusion Cloud Applicationsor other Third-party sources.
- Transforming the data into the prebuilt schema ready for analytics.
- Loading the data into Oracle Autonomous AI Lakehouse.
- Sharing data with external targets with the Data Share functionality.

Factors Affecting Data Refresh Performance

The time required to refresh the data and all the resulting key metrics and dashboards depends on several factors.

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These include:

- Source system availability – If the source system is unavailable, the refresh will pause and wait. The system sends a notification. If the system can determine that the access issue was caused by invalid credentials, the Request History and Warehouse Refresh Statistics display whether the refresh was queued due to source availability.
- Resource availability on the source system – If the source system resources are consumed by processes other than the Oracle Fusion Data Intelligence extraction process, it will cause delays in the Oracle Fusion Data Intelligence data refreshes. This is especially true for Oracle Fusion Cloud Applications.
- Size and complexity of the source data – In general, the volume of data processed during a refresh is a good indicator of how long the refresh will take, though this isn't always the case. The Warehouse Refresh Statistics includes the number of published records that can indicate the overall volume. See View the Warehouse Refresh Statistics.
- Activated functional areas – In general, the more the functional areas, the more data to be processed and hence longer refreshes.
- Custom SQL queries – If custom queries are running on Oracle Autonomous AI Lakehouse, they can consume resources needed by the pipeline, which may impact overall refresh performance.
- Table locks by custom downstream processing - If any downstream processes acquire locks on the Oracle Fusion Data Intelligence tables and hold them for too long, that can cause delays in data refresh performed by Oracle Fusion Data Intelligence.
- Customizations made on the source system objects – If the customizations require a full load for those objects, then refresh will take longer.
- Source and target system maintenance – System maintenance activities such as patching can pause or delay pipeline processes, which may extend the overall refresh time.
- Custom data pipelines – If complex transformation logic is used in the Data Augmentations Scripts for custom data pipelines, it may affect the overall refresh time.

Considerations for Data Refresh Performance

Given the variety of factors that influence data refresh, the completion times will differ from day to day. .

See Factors Affecting Data Refresh Performance .

Pipeline performance is a shared responsibility; hence, Oracle provides a scalable platform, configuration controls, and usage guidance, while you manage data volumes, source-system readiness, transformation design (if any custom data pipelines are used), scheduling, and environment-specific configurations. Optimal results require ongoing user involvement in configuration, proactive monitoring of different factors affecting data refreshes, and adherence to Oracle-recommended practices and tools.

To help keep refresh performance optimal, consider the following actions:

- **Activated Functional Areas** - Activate only the functional areas required for your analytics business needs. Start with what's necessary and add more as new requirements arise, rather than enabling everything upfront. See Activate a Data Pipeline for a Functional Area. Remove any functional areas not critical for your analytics. See Deactivate a Data Pipeline for a Functional Area.
- **Modules and Data Tables in Frequent Data Refresh** – Add only the modules that are required for your intraday operational analytics business needs using the Frequent Data Refresh functionality. Remove any modules not critical for your analytics. See Configure

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Frequent Data Refresh V2 (Preview) and Performance Considerations for Frequent Data Refresh.

- **Initial Extract Date** – This setting controls what data is extracted, transformed, and stored in the warehouse. Configure it carefully based on actual business requirements. Instead of an absolute Initial Extract Date, consider using a Relative Initial Extract Date. See About Pipeline Parameters. This is especially impactful if you're using the Configurable Account Analysis functionality. See Configurable Account Analysis.
- **Custom Extracts** – If custom data extractions are running on the source system, they can compete for resources and delay the data refresh. For example, custom Business Intelligence Cloud Connector (BICC) extractions running in parallel with the Oracle Fusion Data Intelligence extraction process may slow down Oracle Fusion Data Intelligence refreshes. To avoid delays, ensure no other custom refresh jobs are running during the Oracle Fusion Data Intelligence data refresh windows. When a certain refresh takes longer than expected, use the Warehouse Refresh statistics to determine if there are delays due to custom extracts during data refresh. See View the Warehouse Refresh Statistics.
- **High Service Sessions on Oracle Autonomous AI Lakehouse** – The data refresh process depends on available warehouse resources. If High service sessions are running, they can consume capacity and delay publishing data to the warehouse. See Usage Guidelines for Autonomous AI Lakehouse Associated with Oracle Fusion Data Intelligence. When a certain refresh takes longer than expected, use the Warehouse Refresh statistics to determine if there were any High sessions during data refresh. See View the Warehouse Refresh Statistics.
- **Downstream Custom ETL Processes** – The data refresh process requires uninterrupted access to the tables in the data warehouse. Any custom ETL processes accessing these tables and acquiring long-held locks should be scheduled outside the Oracle Fusion Data Intelligence refresh window.
- **Prioritized Refresh** – If you want to make certain data refreshed first even within the incremental refresh, you can select those warehouse tables for prioritized refresh . However, use this only for a limited set of tables that are truly critical to be refreshed before other datasets. See Prioritize Datasets for Incremental Refresh (Preview).
- **Functional Area Schedule Override** – Review the functional areas you've activated and consider staggering refresh times based on business need. This can reduce processing load from daily incremental pipeline refreshes. See Override Data Pipeline Schedules for Functional Areas (Preview).
- **Fusion Augmentations Source** – If your data augmentations are mainly used for downstream integrations, consider using Fusion Augmentations Source for Datasets. With this option, augmentation refreshes can run in parallel with the daily incremental refreshes for functional areas in Oracle Fusion Cloud Applications. This improves incremental refresh performance for the Oracle Fusion Cloud Applications source. It also enables a different refresh frequency for data augmentations using the Fusion Augmentations Source. Schedule the refreshes based on Oracle Fusion Cloud Applications source and Fusion Augmentations Source in a staggered manner to avoid resource contention on Oracle Fusion Cloud Applications. See Perform Data Augmentations with Fusion Augmentations Source.
- **Refresh Stage Priority Change on Request** – For scheduled incremental refresh, you can file a service request to move certain modules from Primary stage to Secondary stage. See Schedule Incremental Data Refresh . This enables data for higher critical business needs to be made available sooner.

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5

Validate Oracle Fusion Data Intelligence Data

As the cloud account administrator with the Functional Administrator or System Administrator application role, you validate the data after loading the source data from Oracle Fusion Cloud Applications into your data warehouse.

Topics:

- About Validating Your Data
- Data Validation Recommendations and Tips
- Create a User to Validate the Extracted Data
- Create a Custom BI Abstract Role
- Validate Your Data

About Validating Your Data

As a functional administrator, you can validate a library of metrics between your Oracle Fusion Data Intelligence instance and the Oracle Transactional Business Intelligence instance. The library of metrics is part of Oracle Fusion Data Intelligence.

To validate data between the source and warehouse, the Oracle Fusion Data Intelligence functional administrator and Oracle Fusion Cloud Applications user must have the same privileges. For example, if you're an administrator in Oracle Fusion Data Intelligence and Oracle Fusion Cloud Applications, then you can use those user IDs to perform data validation.

You can set and apply common parameters across multiple metrics within a validation set while maintaining the flexibility to adjust individual metrics as needed. This reduces redundancy and saves time in the process of creating and editing the validation set.

Prerequisites for Data Validation

Here's a list of prerequisites for validating your data as an administrator:

- If you're not authenticating with JWT, see Create a User to Validate the Extracted Data and create a user named `MyFAWValidationUser` who will perform data validation.
- Ensure that you can access Oracle Fusion Cloud Applications instance and run queries.
- Ensure that the user doing data validation exists in both Oracle Fusion Data Intelligence and Oracle Fusion Cloud Applications User must have same level of access in both Oracle Fusion Data Intelligence and Oracle Fusion Cloud Applications.
- Ensure that you have the same data security access privileges in Oracle Fusion Data Intelligence instance and the Oracle Fusion Cloud Applications.
- Ensure that you're assigned the Integration Specialist Group in Oracle Fusion Data Intelligence to access the Common folder in Oracle Analytics Cloud and to view the output of the data validation project.

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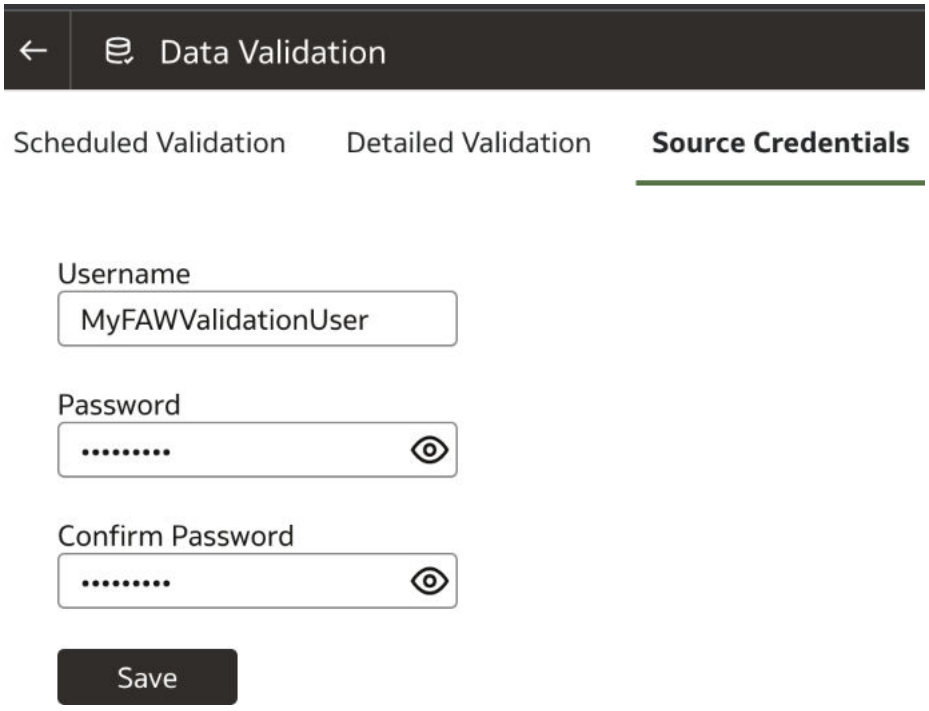
- If Location Based Access Control (LBAC) is enabled in the Oracle Fusion Cloud Applications instance, then you must ensure that the roles needed for the users who extract and validate the extracted data are public.
- Ensure that the user who validates the data in Oracle Fusion Data Intelligence also exists in the Oracle Fusion Cloud Applications identity domain if the identity domain used by Oracle Fusion Data Intelligence is different from the one used by Oracle Fusion Cloud Applications.
- If OAuth authentication is configured, source credentials aren't required. In the Source Credentials tab on the Data Validation page, you must leave the credential fields blank.
- In Oracle Fusion Data Intelligence, on the Source Credentials tab of the Data Validation page, provide the credentials of the applicable user, such as `MyFAWValidationUser`.

> **Note**
>
> If the password has expired, then set the new password using the Source Credentials tab. To navigate to the Source Credentials tab, open the **Navigator** menu, click **Console**, and then click **Data Validation** under **Application Administration**. You see the Scheduled Validation, Detailed Validation, and Source Credentials tabs.



Data Validation Recommendations and Tips

Here are some guidelines and tips related to data validation in Oracle Fusion Data Intelligence.

- Perform data validation daily, or as needed.
- You can run data validation for both open and closed periods.

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- If there is data validation mismatch between Oracle Fusion Cloud Applications and Fusion Data Intelligence, and data is refreshed more frequently than daily, only run your validation after the pipeline runs finish.
- Oracle Fusion Data Intelligence data is valid on the last pipeline run date only. Any changes in Oracle Fusion Cloud Applications after the pipeline run date aren't synced with Oracle Fusion Data Intelligence, causing a potential mismatch between Oracle Fusion Cloud Applications and Oracle Fusion Data Intelligence.
- If source records from Oracle Fusion Cloud Applications are deleted, you can review the rejected records in the Warehouse Refresh Statistics subject area.
- Data validation supports a maximum of 2,500 selected values for filter criteria. This limit helps prevent query timeouts in both Oracle Fusion Data Intelligence and Oracle Analytics Cloud while maintaining overall system performance. If a filter is optional and not required, leave it unselected. No selection will include all rows in the validation. When applying filters, use the search feature to locate and select only the values necessary for validation. Don't select null values as filter criteria.

Create a User to Validate the Extracted Data

Data validation in Oracle Fusion Data Intelligence uses basic authentication and you must provide credentials of a user who has the appropriate privileges to validate the extracted data.

After you create this user in Oracle Fusion Cloud Applications, you must provide this user's credentials in Oracle Fusion Data Intelligence for data validation. See Prerequisites for Data Validation.
Ensure that the password for this user doesn't contain any special characters or space.

1. Sign in to Oracle Fusion Cloud Applications and in the Navigator, click **Tools**, and then click **Security Console**.
2. In the Console, click the Users tab and create a user that you want to use to validate the extracted data; for example, `MyFAWValidationUser`.
3. Click the Roles tab and search for the custom data BI - Abstract Role that was created for data validation; for example, FAW_CUSTOM_DATA_VALIDATION_ROLE. See Create a Custom BI Abstract Role.
4. On the Users page, click **Add User**.
5. In the Add User dialog, search for and select the user to whom you want to assign this role; for example, `MyFAWValidationUser`. Click **Add Selected Users**, close the Add User dialog, and click **Next**.
6. Review the summary and click **Save and Close**.

Create a Custom BI Abstract Role

You create a BI Abstract role and associate it with an applicable user, such as `MyFAWValidationUser`, to validate the extracted data.

Use the Security Console of Oracle Fusion Cloud Applications.

1. Sign in to Oracle Fusion Cloud Applications with your administrator credentials.
2. Navigate to **Tools** and then to **Security Console**.
3. In the Security Console, select the Roles tab, and then click **Create Role**.

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4. In the Create Roles wizard, on the Basic Information page, enter a role name such as FAW Custom Data Validation Role and a role code such as FAW_CUSTOM_DATA_VALIDATION_ROLE, and select **BI - Abstract Roles** as role category.
5. In the Create Roles wizard, on the Role Hierarchy page, add the BI Impersonator role as a member of the newly created BI Abstract role.
6. In the Create Roles wizard, on the Users page, add the applicable user, such as `MyFAWValidationUser`, to the newly created BI Abstract role.
7. In the Create Roles wizard, on the Summary page, verify the details, save, and then close the wizard.

Validate Your Data

As a functional administrator, validate the data after loading the source data in to your data warehouse.

You can schedule the validation of your data using the prebuilt validation sets or custom validation sets that you create. You can create a validation set and define the subject area, metrics, and columns that you want to validate and schedule the validation frequency and date. You can set and apply common parameters across multiple metrics within a validation set. When you initiate the Create Validation Set process, the **Set Common Parameters** button is disabled by default. The button becomes enabled only after you select more than one metric. Upon clicking **Set Common Parameters**, the system automatically calculates the common parameters across the selected metrics. You can then select the desired parameter values from the available options and apply them across all the enabled metrics. You can override these settings by individually modifying metrics to add optional parameters or adjust the copied values. You see the validation sets that you create under Custom Validation Sets in the Scheduled Validation tab.

Ensure that you validate data from the initial extract date set up in the pipeline settings and avoid using any data before the initial extract date. For example, if the Initial Extract Date in the pipeline settings is January 1, 2026, even if there is data in your Oracle Fusion Cloud Applications source from January 1, 2025 to December 31, 2025, because there's nothing to validate it against in the warehouse, the data validation process won't produce correct results.

Based on the schedule and the validation set, Oracle Fusion Data Intelligence validates the data and stores the details in the Data Validation workbook available in the Common folder in Oracle Analytics Cloud. Use the report tabs such as **Validate data for ERP Analytics** and **Validate data for HCM Analytics** available in this workbook to view the data validation details.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Data Validation** under **Application Administration**.

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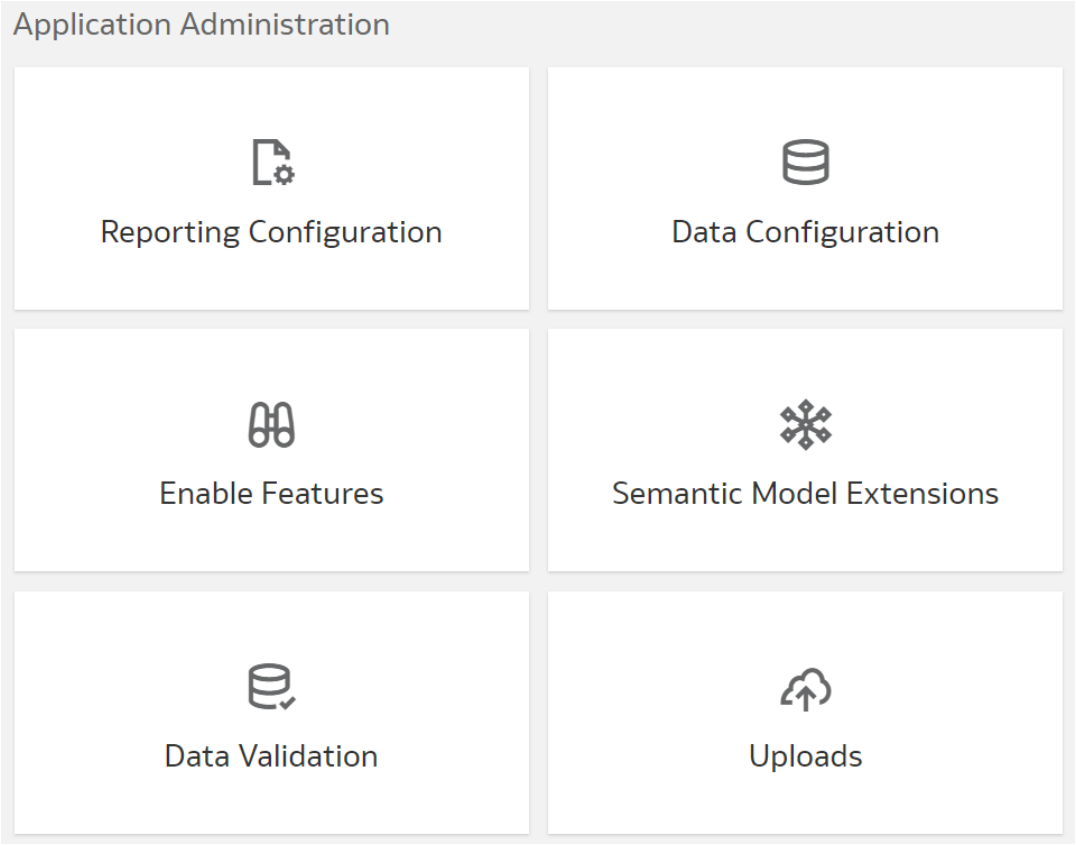
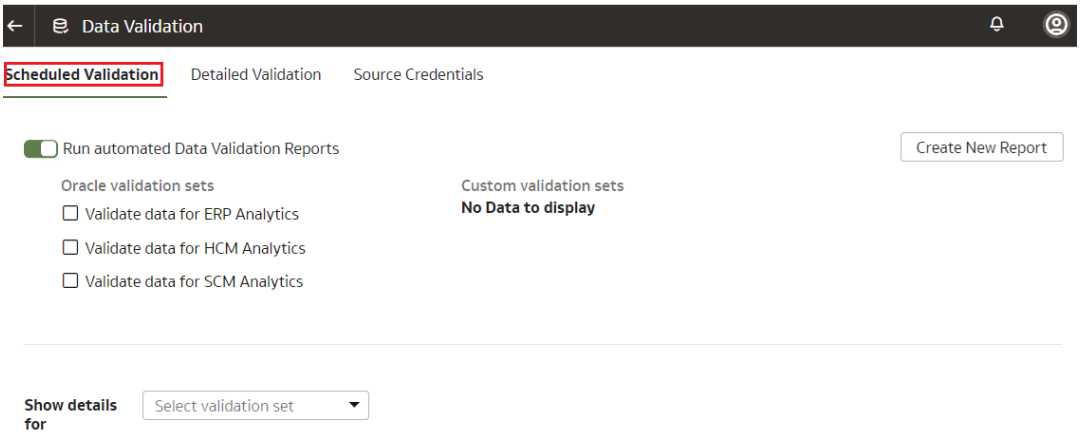


3. On the Data Validation page, in the Scheduled Validation tab, ensure that the **Run automated Data Validation Reports** toggle is enabled if you want to validate your data using the prebuilt validation sets or your custom validation sets. Select the checkbox for the specific validation sets.



4. To create a custom validation set, click **Create New Report**.

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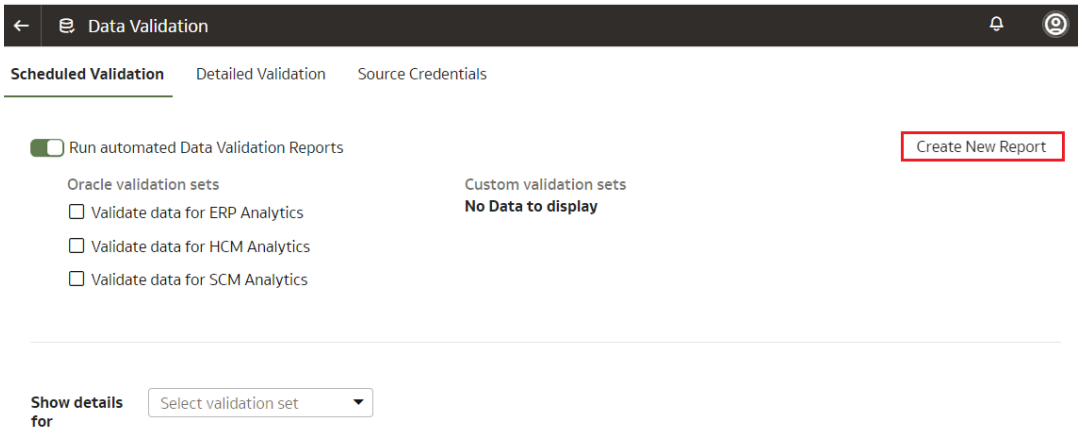
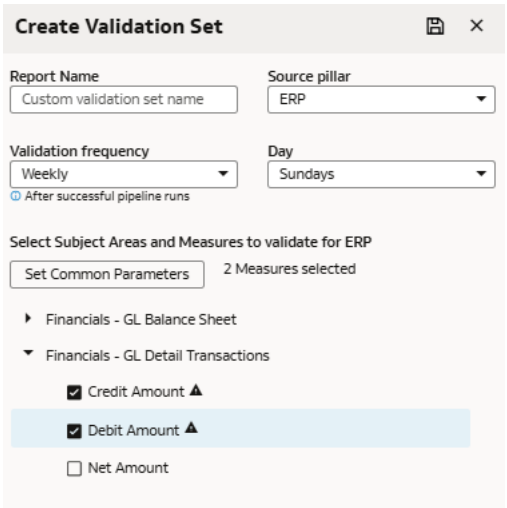


5. In Create Validation Set:
   a. Enter a name for your custom validated set.
   b. Select the source pillar.

      You see the subject areas for the selected pillars.
   c. Select the validation frequency and the corresponding day, month, and date as required.
   d. For each subject area, select the checkbox for the measures that you want.

      Ensure to select more than one metric to enable the **Set Common Parameters** button.
   e. Click **Set Common Parameters**, select the desired parameter values from the available options in Select Values, and then click **Apply**.
   f. Click the edit icon next to a measure to set specific values.
   g. In Select Values, select the values that are displayed, or search for values, or click **Show More Values**, and then move them to the **Selected Values** box using the arrows.
   h. Click **Select** to retain the selection.
   i. Click **Save**.



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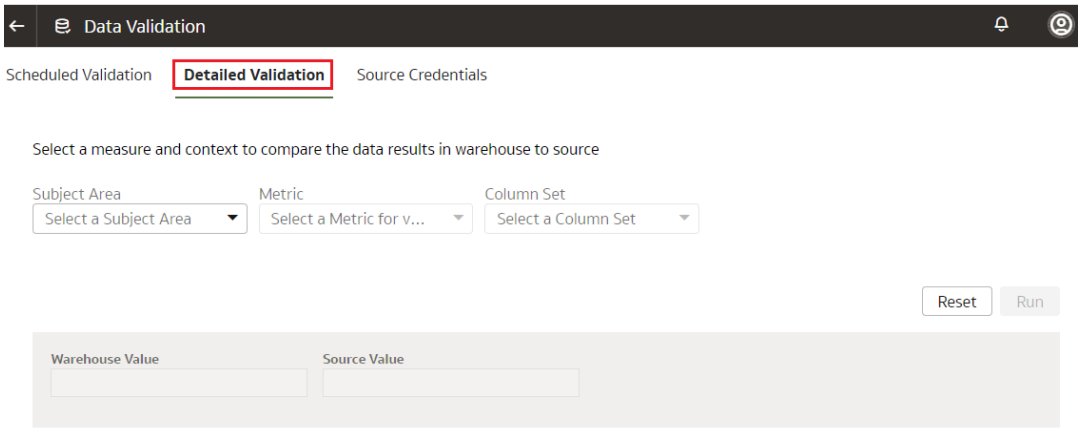
6. In Show details for, select the validation set to view the subject area and its measures that would be validated as part of this validation set.
7. On the Data Validation page, in the Detailed Validation tab, select the subject area such as Financials - GL Balance Sheet, a metric related to the selected subject area, and the column set that you want to validate.

   You see the columns listed from the selected Column Set.



8. For each column, click the + icon to open the Select Values dialog.
9. In Select Values, select the values that are displayed, or search for values, or click **Show More Values**, and then move them to the **Selected Values** box using the arrows.
10. Click **Select** to retain the selection.
11. In the Detailed Validation tab, click **Run** to show the metric values in the Oracle Fusion Data Intelligence instance and the Oracle Transactional Business Intelligence instance.
12. On the Data Validation page, click **Show Summary** to display the detail drill down of the metric values for Oracle Fusion Data Intelligence instance and the Oracle Transactional Business Intelligence instance.
13. Select the attribute columns that you would like to pivot the details on in the display.

    You see the Summary table with values for these categories:

    - Total Records in Analytics Warehouse
    - Total Records in Oracle Transactional Business Intelligence
    - Records Only in Analytics Warehouse
    - Records Only in Oracle Transactional Business Intelligence
    - Matched Records
    - Mismatched Records
14. On the Data Validation page, click **Show Details** to show the detail drill down of the metric values for the Oracle Fusion Data Intelligence instance and the Oracle Transactional Business Intelligence instance. The detail table gives the actual data for the differences between these instances using the pivot columns that you had selected previously.

    Note that having Mismatched Records is not necessarily an indication of an error. Pipeline settings or pipeline timing might cause a mismatch between the source and data warehouse.

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- When you configure the columns and values for data validation, make sure they match with the equivalent values in your pipeline settings. For example, if you mistakenly select a value in the Data Validation page that is not used in the pipeline, there will be a mismatch upon running your Data Validation. The warehouse expects those values, but they've never been pulled from the source.
- Source data could be updated in between pipeline runs. If you run Data Validation in this scenario, a mismatch is expected, because the changed source data doesn't exist yet in Oracle Fusion Data Intelligence.

15. Optional: Use the **Download Details** option to download the detail data into a csv file.
16. Optional: Use the **Change Columns** option to change the columns that you would like to pivot the detail data on.

    This regenerates the summary and the detail analysis.

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6

Manage Users, Groups, Application Roles, and Data Access

As the service administrator or security administrator, you manage users and their access to subject areas and data.

Topics:

- About Managing Users, Groups, Application Roles, and Data Access
- Typical Workflow to Manage Users, Groups, Application Roles, and Data Access
- Manage Users
- Manage Groups
- Manage Application Roles
- Manage Data Access
- Configure Permissions for Metadata and Front-End Objects
- View Activity History
- Manage Uploads and Downloads
- Set Up Custom Security

About Managing Users, Groups, Application Roles, and Data Access

As the service administrator or security administrator, one of your initial tasks is to ensure that users have appropriate access to use Oracle Fusion Data Intelligence.

Users need access to objects and data. Access to objects include subject areas or elements of subject areas such as folders and attributes, key metrics, workbooks, and the legacy Oracle BI Enterprise Edition dashboards and answers. You grant access to the users by assigning groups to them. The groups inherit the permissions from the application roles (data and duty) mapped to them. You can merge your security setup only with the main semantic model.

Enhanced Security Capabilities

The enhanced security capabilities available from release Platform 23.R4 enable you to:

- Create and manage users and groups only in the Oracle Identity Cloud Service associated with your Oracle Fusion Data Intelligence instance. As a security administrator, you can perform user-group management if you've the User Administrator role in Oracle Identity Cloud Service. See Managing Oracle Identity Cloud Service Users and Groups in the Oracle Cloud Infrastructure Console. In Oracle Fusion Data Intelligence, you can view the users and groups on the Security page but you can't create, modify, or delete them.
- Use the licensed application roles corresponding to the existing licensed groups made available in this release onwards. You can assign the licensed application roles to your custom groups. These licensed application roles are mapped by default to the existing

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prebuilt licensed groups and are associated with the system roles. When you assign these prebuilt licensed groups and custom groups to users, then the applicable users get the system privileges such as consumer, author, and administrator.

If your Oracle Fusion Data Intelligence is on a release prior to release Platform 23.R4 or you haven't yet up taken this security update, then you can continue to use the existing security capabilities until Oracle Fusion Data Intelligence automatically applies them as part of the release Platform 24.R2. Consult the information in Manage Users, Groups, Application Roles, and Data Access from a release prior to release Platform 23.R4.

These changes are mandatory and you can schedule the update sooner to enhance the security of your application using the Schedule Update option in the banner announcing these enhancements on the Security page. Ensure that you don't schedule the security update beyond May 2024. All current setups will be retained and available in Oracle Identity Cloud Service; you don't need to take any action other than scheduling.

About Users

Users accessing Oracle Fusion Data Intelligence must exist in Oracle Identity Cloud Service.

You can create the users or synchronize them with the Oracle Identity Cloud Service instance associated with your Oracle Fusion Data Intelligence instance from different sources:

- You can synchronize the Oracle Fusion Cloud Applications users with the Oracle Identity Cloud Service instance.
- You can manually create users in the Oracle Identity Cloud Service instance directly or create users in the Oracle Identity Cloud Service instance using the Oracle Fusion Data Intelligence user interface.
- You can synchronize the users from other 3rd-party systems with the Oracle Identity Cloud Service instance.

Users gain their access to Oracle Fusion Data Intelligence based on the Oracle Fusion Data Intelligence-specific system groups assigned to them. They gain access to different functionality, objects, and data in Oracle Fusion Data Intelligence based on the job-specific groups assigned to them.

You can assign the predefined system groups, groups available in the Oracle Identity Cloud Service instance associated with your Oracle Fusion Data Intelligence instance, and custom groups that you create in Oracle Fusion Data Intelligence. You must ensure that the groups that you assign to a user have valid data roles associated with them. The data roles enable users to access the applicable subject areas. If users aren't having valid data roles (through the assigned groups), they can't access any data in Oracle Fusion Data Intelligence.

About Groups

Oracle Fusion Data Intelligence uses groups to provide users access to subject areas, objects, and data.

Oracle Fusion Data Intelligence uses the following types of groups:

- System groups created in Oracle Identity Cloud Service specifically for Oracle Fusion Data Intelligence. These system groups are associated with system roles that provide a set of privileges to the users to perform system tasks after signing into Oracle Fusion Data Intelligence such as administering system settings, performing functional setup, managing security, and modeling data.

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- Job-specific groups such as Vice President of Sales, Human Resources Analyst, and Procurement Buyer. The job-specific groups are job roles from Oracle Fusion Cloud Applications mapped as groups in Oracle Identity Cloud Service. See Job-Specific Groups.
- Other groups that are generic groups created in Oracle Identity Cloud Service not specifically for Oracle Fusion Data Intelligence such as IDCS_Administrators and All_Tenant_Users.

System Groups

Oracle Fusion Data Intelligence creates the system groups also known as licensed groups in Oracle Identity Cloud Service while provisioning your Oracle Fusion Data Intelligence instance.

System groups are associated with system roles that provide a set of privileges to users. The enhanced security capabilities available from release Platform 23.R4 provide licensed application roles corresponding to the existing licensed groups and are mapped by default to the existing prebuilt system or licensed groups. The system roles or the licenses application roles (from release Platform 23.R4) serve two purposes:

- Authenticate a user for Oracle Fusion Data Intelligence.
- License a user to use Oracle Fusion Data Intelligence based on the system group they are assigned.

See Licensed Roles.

As a security administrator, you can perform user-group management if you've the User Administrator role in Oracle Identity Cloud Service. You must add the users to the corresponding system groups based on the tasks they perform in Oracle Fusion Data Intelligence. See Managing Oracle Identity Cloud Service Users and Groups in the Oracle Cloud Infrastructure Console. In Oracle Fusion Data Intelligence, you can view the users and groups on the Security page but you can't create, modify, or delete them. In Oracle Identity Cloud Service add users to these system groups:

System Group Code	System Group Name	Description	Associated System Role*	Associated Licensed Application Role from release Platform 23.R4 Onwards
FAW_FUNCTIONAL_ADMINISTRATORS	FAW Functional Administrator	Fusion Data Intelligence Functional Administrators	FunctionalAdmin	FAW Functional Administrator Role
FAW_SECURITY_ADMINISTRATORS	FAW Security Administrator	Fusion Data Intelligence Security Administrators	SecurityAdmin	FAW Security Administrator Role
FAW_MODELERS	FAW Modeler	Fusion Data Intelligence Modelers	Modeler	FAW Modeler Role
FAW_MODELER_ADMINISTRATORS	FAW Modeler Administrator	Fusion Data Intelligence Modeler Administrators	ModelerAdmin	FAW Modeler Administrator Role
FAW_SERVICE_ADMINISTRATORS	FAW Service Administrator	Fusion Data Intelligence Service Administrators	ServiceAdmin	FAW Service Administrator Role

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System Group Code	System Group Name	Description	Associated System Role*	Associated Licensed Application Role from release Platform 23.R4 Onwards
FAW_LICENSED_ERP_AUTHORS	FAW Licensed ERP Authors	Fusion Data Intelligence ERP Licensed Authors	Author	FAW Licensed ERP Authors Role
FAW_LICENSED_ERP_CONSUMERS	FAW Licensed ERP Consumers	Fusion Data Intelligence ERP Licensed Consumers	Consumer	FAW Licensed ERP Consumers Role
FAW_LICENSED_HCM_AUTHORS	FAW Licensed HCM Authors	Fusion Data Intelligence HCM Licensed Authors	Author	FAW Licensed HCM Authors Role
FAW_LICENSED_HCM_CONSUMERS	FAW Licensed HCM Consumers	Fusion Data Intelligence HCM Licensed Consumers	Consumer	FAW Licensed HCM Consumers Role
FAW_LICENSED_SCM_CONSUMERS	FAW Licensed SCM Consumers	Fusion Data Intelligence SCM Licensed Consumers	Consumer	FAW Licensed SCM Consumers Role
FAW_LICENSED_CX_CONSUMERS	FAW Licensed CX Consumers	Fusion Data Intelligence CX Licensed Consumers	Consumer	FAW Licensed CX Consumers Role
FAW_LICENSED_SCM_AUTHORS	FAW Licensed SCM Authors	Fusion Data Intelligence SCM Licensed Authors	Author	FAW Licensed SCM Authors Role
FAW_LICENSED_CX_AUTHORS	FAW Licensed CX Authors	Fusion Data Intelligence CX Licensed Authors	Author	FAW Licensed CX Authors Role

*See Licensed Roles.

Job-Specific Groups

Job-specific groups are job roles synchronized from Oracle Fusion Cloud Applications into Oracle Identity Cloud Service.

Oracle Fusion Data Intelligence uses the following job-specific groups:

- Common Job-Specific Groups
- Fusion HCM Analytics Job-Specific Groups
- Fusion ERP Analytics Job-Specific Groups
- Fusion SCM Analytics Job-Specific Groups
- Fusion CX Analytics Job-Specific Groups

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Common Job-Specific Groups

The common job-specific groups are applicable across the analytics applications that are part of Oracle Fusion Data Intelligence such as Oracle Fusion HCM Analytics and Oracle Fusion ERP Analytics.

Job-Specific Group Code	Job-Specific Group Name	Description	Associated Application Roles	Associated Application Role Names	Functional Area
ORA_FND_INTEGRATION_SPECIALIST_JOB	Integration Specialist	Individual responsible for planning, coordinating, and supervising all activities related to the integration of enterprise information systems. Has author privileges.	Author OA4F_COMMON_DATA_ADMIN_ANALYSIS_DUTY	Not applicable	Common

Other Groups

The Other Groups category refers to groups created for other purposes.

These groups aren't necessarily Oracle Fusion Data Intelligence-specific but you can use them in Oracle Fusion Data Intelligence. Examples of this category is the All_Tenant_Users" group.

About Application Roles

Application roles consist of duty and data roles.

Duty roles define the responsibilities of a job as an entitlement to perform a particular action, for example, a duty role that requires access to an AP transaction subject area. Data roles provide access to the row-level data in the autonomous data warehouse tables. Data roles categorize users based on the functional requirements of their job role and data needs. For example, you could organize users into a research and development data role to enable the users to track invoices related to their projects.

Duty Roles

The predefined duty roles to secure the predefined subject areas and the predefined front-end objects are:

- Common Duty Roles
- Fusion HCM Analytics Duty Roles
- Fusion ERP Analytics Duty Roles
- Fusion SCM Analytics Duty Roles
- Fusion CX Analytics Duty Roles

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Common Duty Roles

The common duty roles are applicable across the analytics applications that are part of the application such as Oracle Fusion CX Analytics, Oracle Fusion HCM Analytics, and Oracle Fusion ERP Analytics.

Duty Role Code	Duty Role Name	Details	Functional Area	Gets access to Subject Area Display Name OR Associated Role
OA4F_COMMON_DATA_ADMIN_ANALYSIS_DUTY	Data Warehouse Refresh and Usage Tracking Analysis Duty	Object security role to control access to Common - Warehouse Refresh Statistics subject area.	Common	Common - Warehouse Refresh Statistics
OA4F_COMMON_DATA_ADMIN_ANALYSIS_CONTENT_DUTY	Data Warehouse Refresh and Usage Tracking Analysis Content Duty	Object security role to control access to Warehouse Refresh Statistics and Data Validation workbooks.	Common	
OA4F_COMMON_USAGE_TRACKING_DUTY	Usage Tracking Analysis Duty	Object security role to control presentation catalog access to Common - Usage Tracking subject area.	Common	Common - Usage Tracking
OA4F_COMMON_USAGE_TRACKING_CONTENT_DUTY	Usage Tracking Analysis Content Duty	Object security role to control presentation catalog access to Usage Tracking workbook	Common	
OA4F_SECURITY_REPORTING_DUTY	Security Reporting Duty	Object security role to control access to Security Assignment and Security Audit History subject areas.	Common	Security Assignment Security Audit History
OA4F_SECURITY_REPORTING_CONTENT_DUTY	Security Reporting Analysis Content Duty	Object security role to control presentation catalog access to Security Audit workbook		
OA4F_STORAGE_USAGE_TRACKING_ANALYSIS_DUTY	Storage Usage Tracking Analysis Duty	Object security role to control access to the Tenant Metrics subject area	Common	

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Duty Role Code	Duty Role Name	Details	Functional Area	Gets access to Subject Area Display Name OR Associated Role
OA4F_STORAGE_USAGE_TRACKING_ANALYSIS_CONTENT_DUTY	Storage Usage Tracking Analysis Content Duty	Object security role to control presentation catalog access to Custom Data Usage workbook	Common	
OA4F_CONTENT_EXPLORER_ANALYSIS_DUTY	Content Explorer Analysis Duty	Object security role to control access to the Content Explorer subject areas	Common	
OA4F_CONTENT_EXPLORER_ANALYSIS_CONTENT_DUTY	Content Explorer Content Duty	Object security role to control presentation catalog access to the Content Explorer - Fusion Data Intelligence workbook	Common	

Data Roles

The predefined data roles used to secure the predefined objects, custom facts, and custom dimensions are:

- Fusion HCM Analytics Data Roles
- Fusion ERP Analytics Data Roles
- Fusion SCM Analytics Data Roles
- Fusion CX Analytics Data Roles

Licensed Roles

The licensed application roles corresponding to the existing licensed groups made available in Platform release 23.R4 and later are as follows.

The licensed application roles are by default associated with the applicable system roles described in Oracle Cloud Infrastructure Administrator Permissions, Oracle Fusion Data Intelligence Administrator Permissions, and Oracle Fusion Data Intelligence Non-Administrator Permissions.

If a licensed role isn't pre-mapped to a licensed group, the Oracle Cloud Infrastructure (OCI) security administrator can create a custom group in OCI Identity and Access Management (IAM). Then, either the Oracle Fusion Data Intelligence service administrator or security administrator can manually map the licensed role to that IAM group in the Oracle Fusion Data Intelligence Security console. Create the OCI IAM group with a unique name and don't include the word "licensed" in the name so that you avoid conflicts with the current or future licensed groups.

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Licensed Role	Associated System Role	Mapped to Licensed Group
FAW Service Administrator Role	Service Administrator	FAW Service Administrator
FAW Functional Administrator Role	Functional Administrator	FAW Functional Administrator
FAW Security Administrator Role	Security Administrator	FAW Security Administrator
FAW Modeler Administrator Role	Model Administrator	FAW Modeler Administrator
FAW Modeler Role	Modeler	FAW Modeler
FAW Licensed CX Authors Role	Author	FAW Licensed CX Authors
FAW Licensed ERP Authors Role	Author	FAW Licensed ERP Authors
FAW Licensed HCM Authors Role	Author	FAW Licensed HCM Authors
FAW Licensed SCM Authors Role	Author	FAW Licensed SCM Authors
FAW Licensed CX Consumer Role	Consumer	FAW Licensed CX Consumers
FAW Licensed ERP Consumer Role	Consumer	FAW Licensed ERP Consumers
FAW Licensed HCM Consumer Role	Consumer	FAW Licensed HCM Consumers
FAW Licensed SCM Consumer Role	Consumer	FAW Licensed SCM Consumers
FAW Licensed CX Viewer Role	Viewer	Not mapped
FAW Licensed ERP Viewer Role	Viewer	Not mapped
FAW Licensed HCM Viewer Role	Viewer	Not mapped
FAW Licensed SCM Viewer Role	Viewer	Not mapped
FAW Licensed CX Restricted Author Role	Restricted Author	Not mapped
FAW Licensed ERP Restricted Author Role	Restricted Author	Not mapped
FAW Licensed HCM Restricted Author Role	Restricted Author	Not mapped
FAW Licensed SCM Restricted Author Role	Restricted Author	Not mapped
FAW Licensed CX Non-AI Consumer Role	Non AI Consumer	Not mapped
FAW Licensed ERP Non-AI Consumer Role	Non AI Consumer	Not mapped
FAW Licensed HCM Non-AI Consumer Role	Non AI Consumer	Not mapped
FAW Licensed SCM Non-AI Consumer Role	Non AI Consumer	Not mapped
FAW Licensed CX Non-AI Viewer Role	Non AI Viewer	Not mapped
FAW Licensed ERP Non-AI Viewer Role	Non AI Viewer	Not mapped
FAW Licensed HCM Non-AI Viewer Role	Non AI Viewer	Not mapped
FAW Licensed SCM Non-AI Viewer Role	Non AI Viewer	Not mapped

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Oracle Cloud Infrastructure Administrator Permissions

Oracle Cloud Infrastructure administrators can create and manage Oracle Fusion Data Intelligence instances and users.

Category	Component	Permission Description	Oracle Cloud Infrastructure Account Administrator	Oracle Cloud Infrastructure User Administrator
Oracle Cloud Infrastructure	Instances	• Create and manage the Oracle Fusion Data Intelligence instance	✓	-
Security	Users and Groups	• Create and manage users and groups in the Oracle Identity Cloud Service associated with the Oracle Fusion Data Intelligence instance. See Managing Oracle Identity Cloud Service Users and Groups in the Oracle Cloud Infrastructure Console	-	✓

Oracle Fusion Data Intelligence Administrator Permissions

This topic lists the Oracle Fusion Data Intelligence administrator permissions.

Category	Component	Permission Description	Service Administrator	Functional Administrator	Security Administrator	Modeler Administrator
Administration	Administering Oracle Fusion Data Intelligence	• Access the Oracle Fusion Data Intelligence Console page	✓	✓	✓	✓
Service Administration	Managing release updates	• Access the user interface for the Oracle Fusion Data Intelligence release updates and the offering updates	✓	✓	-	-

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Category	Component	Permission Description	Service Administrator	Functional Administrator	Security Administrator	Modeler Administrator
Service Administration	Configuring Oracle Fusion Cloud Applications roles and security assignments	• Access the user interface of Oracle Fusion Data Intelligence security	✓	-	✓	-
Application Administration	Administering functionality	• Access the user interface of Data Configuration, Enable Features, Data Validation, Bundles, and Bundles Repository	✓	✓	-	-
Application Administration	Uploading objects	• Manage uploads	✓	✓	✓	-
Application Administration	Configuring reporting	• Access the user interface of reporting configuration	✓	✓	✓	✓
Application Administration	Publishing semantic model extensions	• Publish the semantic model	✓	-	-	✓
Application Administration	Customizing semantic model extensions	• Extend the semantic model (external applications, system extensions, user extensions)	✓	✓	✓	✓
Application Administration	Securing data in semantic model extensions	• Apply data security to the semantic model	✓	✓	✓	✓
Application Administration	Administering Oracle Fusion Data Intelligence AI Concierge	• Administer Oracle Fusion Data Intelligence AI Concierge	✓	-	-	-
Application Administration	Administering Oracle Fusion Data Intelligence MCP Server	• Administer Oracle Fusion Data Intelligence MCP Server	✓	-	-	-
Application Administration	Administering Oracle Fusion Data Intelligence Content Explorer	• Administer Oracle Fusion Data Intelligence Content Explorer	✓	-	-	-
AI Capability	Consuming Oracle Fusion Data Intelligence AI Concierge	• Use Oracle Fusion Data Intelligence AI Concierge	✓	✓	✓	✓

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Category	Component	Permission Description	Service Administrator	Functional Administrator	Security Administrator	Modeler Administrator
AI Capability	Consuming Oracle Fusion Data Intelligence MCP Server	• Use Oracle Fusion Data Intelligence AI clients	✓	-	-	✓
AI Capability	Consuming Oracle Fusion Data Intelligence Content Explorer	• Use Oracle Fusion Data Intelligence Content Explorer	✓	-	-	✓
Oracle Cloud Infrastructure	Creating Oracle Cloud Infrastructure Resource Principal connections	• Create and edit: – Data Science – Databases – Document Understanding – Functions – Language – Object Storage – Vision	✓	-	-	-
Oracle Analytics Cloud	Querying database	• Requests from Oracle Fusion Data Intelligence to Oracle Analytics Cloud routed through the Service Administrator	✓	-	-	-

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Category	Component	Permission Description	Service Administrator	Functional Administrator	Security Administrator	Modeler Administrator
Oracle Analytics Cloud	Administering Analytics	• Manage: – Content (view a list of everyone's content and change ownership) – Extensions (upload, download, and delete custom plug-ins) – LLMs (manage large language models) – Maps (set up map information for dashboards and analyses, so users can visualize and interact with data through maps) – Virus scanner configuration – Themes, layouts, and images – System settings – Content-sharing platforms – Uploading of shared images – Allowing advanced options in Iframe visualizations • Create and edit: – Shared layouts	✓	-	-	-

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Category	Component	Permission Description	Service Administrator	Functional Administrator	Security Administrator	Modeler Administrator
		– Shared themes • Schedule: – Workbooks – Workbooks with bursting – Workbooks with RunAs user				
Oracle Analytics Cloud	Modeling	• Create and edit: – Connections – Data Flows – Sequences – Datasets • Download file-based data • Set extracted data access mode for datasets based on local subject areas • Export content	✓	-	-	✓
Front-end Object	Managing key metrics	• Create, update, delete, and manage key metrics access levels.	✓	-	-	✓
Oracle Analytics Cloud	Authoring	• Create and edit: – Workbooks – Custom pages • Manage default landing page assignments	✓	-	-	✓
Oracle Analytics Cloud	Editing legacy reports	• Access the Classic menu • Create: – Oracle Analytics Publisher reports – Analyses and dashboards objects (analysis and interactive reporting)	✓	-	-	✓

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Category	Component	Permission Description	Service Administrator	Functional Administrator	Security Administrator	Modeler Administrator
Oracle Analytics Cloud	Reading legacy reports	• Access Classic menu • View (read-only access): – Oracle Analytics Publisher reports – Analysis and dashboard reports • Create Classic reporting jobs and actionable intelligence objects	✓	-	-	✓
Oracle Analytics Cloud	Configuring AI Assistant	• Use the AI Assistant to index datasets and subject areas • Grant access for others to use the AI assistant in workbooks	✓	-	-	✓
Oracle Analytics Cloud	Consuming AI Assistant	• Use the AI Assistant wherever available in workbooks to generate visualizations	✓	-	-	✓
Oracle Analytics Cloud	Exporting objects	• Export: – Workbook data (export data from workbooks) – Workbooks to documents (export workbooks to documents, such as PDF)	✓	-	-	✓

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Category	Component	Permission Description	Service Administrator	Functional Administrator	Security Administrator	Modeler Administrator
Oracle Analytics Cloud	Consuming content	• View and consume the curated list of prebuilt and custom dashboards and workbooks • View navigation menu	✓	-	-	✓

Oracle Fusion Data Intelligence Non-Administrator Permissions

This topic lists the Oracle Fusion Data Intelligence non-administrative user permissions.

Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
Administration	Administering Oracle Fusion Data Intelligence	• Access the Oracle Fusion Data Intelligence Console page	✓	-	-	-	-	-	-
Application Administration	Configuring reporting	• Access the user interface of reporting configuration	✓	-	-	-	-	-	-

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
Application Administration	Customizing semantic model extensions	• Extend the semantic model (external applications, system extensions, user extensions)	✓	-	-	-	-	-	-
Application Administration	Securing data in semantic model extensions	• Apply data security to the semantic model	✓	-	-	-	-	-	-
AI Capability	Consuming Oracle Fusion Data Intelligence AI Concierge	• Use Oracle Fusion Data Intelligence AI Concierge	✓	✓	✓	✓	✓	-	-

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
AI Capability	Consuming Oracle Fusion Data Intelligence MCP Server	• Use Oracle Fusion Data Intelligence AI clients	✓	✓	✓	✓	✓	-	-
AI Capability	Consuming Oracle Fusion Data Intelligence Content Explorer	• Use Oracle Fusion Data Intelligence Content Explorer	✓	✓	✓	✓	✓	-	-

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
Oracle Analytics Cloud	Modeling	• Create and edit: – Connections – Data Flows – Sequences – Datasets – AI Agents	✓	✓	-	-	-	-	-

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
		• Download file-based data • Set extracted data access mode for datasets based on local subject areas • Export content							
Front-end Object	Managing key metrics	• Create, update, delete, and manage key metrics access levels.	✓	✓	✓	-	-	-	-

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
Oracle Analytics Cloud	Authoring	• Create and edit: – Workbooks – Custom pages – Watchlists – Custom groups • Manage default	✓	✓	✓	-	-	-	-

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
		landing page assignments							

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
Oracle Analytics Cloud	Editing legacy reports	• Access the Classic menu • Create: – Oracle Analytics Publisher reports – Analyses and	✓	✓	✓	-	-	-	-

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
		dashboards objects (analysis and interactive reporting)							

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
Oracle Analytics Cloud	Reading legacy reports	• Access Classic menu • View (read-only access): – Oracle Analytics Publisher reports – Analysis	✓	✓	✓	✓	✓	✓	✓

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
		ndd ashb oard repo rts • Create Classic reporting jobs and actionable intelligence objects							

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
Oracle Analytics Cloud	Configuring AI Assistant	• Use the AI Assistant to index datasets and subject areas • Grant access for others to use the AI assistant in workbooks	✓	✓	✓	-	-	-	-
Oracle Analytics Cloud	Consuming AI Assistant	• Use the AI Assistant wherever available in workbooks to generate visualizations	✓	✓	✓	✓	-	✓	-

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
Oracle Analytics Cloud	Exporting objects	• Export: – Workbook data (export data from workbooks) – Workbooks	✓	✓	-	✓	✓	-	-

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
			to document workbooks to document, such has PDF)						

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Category	Component	Permission Description	Modeler	Author	Restricted Author	Consumer	Non-AI Consumer	Viewer	Non AI Viewer
Oracle Analytics Cloud	Consuming content	• View and consume the curated list of prebuilt and custom dashboards and workbooks • View navigation menu	✓	✓	✓	✓	✓	✓	✓

About Data Access Through Security Assignments

As a security administrator, you grant the data security assignments at the user-level.

Data security assignments apply data filters to display only the data corresponding to the security assignment values assigned to the users. For example, John Smith and Marie Pierce are both Accounts Payable Manager in an organization, but John Smith needs to see only the US business unit-specific data and Marie needs to see only the UK business unit-specific data. Even though both have the same functional role, their data security assignments differ. John is assigned all the US business units and Marie is assigned all the UK business units only.

You ensure data-level security with a combination of data roles, security context, and security assignments assigned to the user. Oracle Fusion Data Intelligence maps a security context to a data role. You grant the data security assignments within a security context. Users must have the data role through the group assigned to them in order to have access to the security context and its corresponding list of values to pick from. You assign a user one or more job-specific groups. The groups have data roles mapped to them, and when querying data, the semantic layer applies the data filters.

When you configure the Enterprise Resource Planning report parameters, you're restricting the ledgers, payables business units, and receivables business units to those specific values. To establish the security permissions, you'd need to map users to security assignments. If a user doesn't have security assignment values mapped, then the user doesn't get to see any

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datasets corresponding to the job role (and implicitly data role) assigned to them. When you add data security assignments to a user, you ensure that the user can access specific data within a security context, such as ledger, payables business unit, or receivables business unit.

For Human Capital Management, the data security is based on the line manager hierarchy defined in Oracle Fusion Cloud Applications for the user having the Line Manager role. For Human Capital Management, the data security is based on the talent acquisition hierarchy defined in Oracle Fusion Cloud Applications for the user having the Job Application or Job Requisition roles. All users can see their own records using the HCM Show context. A user with the HR Analyst role has access to all Human Capital Management data and no security restrictions are applied to the Human Capital Management data set. A user with the Hiring Manager role has access to non-restricted job applications, while users with the Recruiter and Recruiting Manager role can view all job applications. The business unit, legal employer, department, country security context, and related data roles are restricted by contexts and assigned predicate values. To establish the security permissions, you'd need to map users to security assignments

Typical Workflow to Manage Users, Groups, Application Roles, and Data Access

Follow these tasks as a guide to manage users, groups, application roles, and data access.

Task	Description	More Information
Create users for Oracle Fusion Data Intelligence in Oracle Identity Cloud Service	Users for Oracle Fusion Data Intelligence must exist in the Oracle Identity Cloud Service instance associated with your Oracle Fusion Data Intelligence instance. You create users in the Oracle Identity Cloud Service instance in several ways.	See Create Users
License the users to access Oracle Fusion Data Intelligence	An Oracle Fusion Data Intelligence user is an Oracle Fusion Data Intelligence licensed user. You license a user in Oracle Fusion Data Intelligence when you assign one of the Oracle Fusion Data Intelligence system groups to them. You must assign at least one system group to a user to enable them to perform relevant tasks in Oracle Fusion Data Intelligence.	See License the Users to Access Oracle Fusion Data Intelligence
Create groups	As a security administrator, you can perform user-group management if you've the User Administrator role in Oracle Identity Cloud Service. You can create custom groups to meet your business requirements.	See Managing Oracle Identity Cloud Service Users and Groups in the Oracle Cloud Infrastructure Console

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Task	Description	More Information
Create application roles	Application roles consist of data and duty roles. As a security administrator, you can create custom duty and data roles using the Security pages to secure subject areas and data respectively. However, as a modeler, you configure these custom application roles using the Security Configuration section of the Semantic Model Extensions pages.	See Create an Application Role
Associate groups and application roles	You must map the predefined and custom job-specific groups to the application roles (duty and data roles) to inherit the privileges and permissions to access the objects and data in Oracle Fusion Data Intelligence.	See Add Application Roles to a Group and Assign Groups to Application Roles
Associate users and groups	You must associate users and groups as the groups assigned to the users provide them the access to Oracle Fusion Data Intelligence. As a security administrator, you can perform user-group management if you've the User Administrator role in Oracle Identity Cloud Service.	See Managing Oracle Identity Cloud Service Users and Groups in the Oracle Cloud Infrastructure Console.
Add security assignments to a user	Access to data is granted at user level. Within a security context, users get assigned security assignments to filter their data access level. You can grant security assignments to the users for the predefined security contexts currently. For custom data access, the data filters are implicit through the custom data security framework. See Custom Security in Fusion Data Intelligence.	See Add Security Assignments to a User and Manage Users for a Data Security Assignment

Manage Users

As a service or security administrator, you must ensure that you add users with applicable permissions to work with Oracle Fusion Data Intelligence.

Topics:

- Create Users
- License the Users to Access Oracle Fusion Data Intelligence
- Assign Licensed Groups to Users
- Add Security Assignments to a User
- Remove Security Assignments Granted to a User

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- Copy Data Security Assignments
- View the Excluded Data Security Assignments

Create Users

Users for Oracle Fusion Data Intelligence must exist in the Oracle Identity Cloud Service instance associated with your Oracle Fusion Data Intelligence instance.

You create users in the Oracle Identity Cloud Service instance in the following ways:

- Synchronize users from your Oracle Fusion Cloud Applications instance to the Oracle Identity Cloud Service instance.
- Manually create users in the Oracle Identity Cloud Service instance.

Synchronize Users from Your Oracle Fusion Cloud Applications Instance

Synchronize users from your Oracle Fusion Cloud Applications instance to your Oracle Fusion Data Intelligence instance.

See Set Up User Access to Oracle Fusion Data Intelligence Using Single Sign-On .

Create Users in Oracle Identity Cloud Service

Create users in the Oracle Identity Cloud Service instance associated with your Oracle Fusion Data Intelligence instance.

See Create User Accounts in *Administering Oracle Identity Cloud Service*.

License the Users to Access Oracle Fusion Data Intelligence

You must assign at least one system group to a user to enable the user to perform the relevant tasks in Oracle Fusion Data Intelligence. System groups provide a set of privileges to perform tasks in Oracle Fusion Data Intelligence.

New licensed users with predefined job-specific groups get the Author role by default.

Based on the entitlements and the number of licenses that you purchased, you need to assign the users to the applicable Licensed Author and Licensed Consumer system groups. If the users need to perform administrative tasks, you must assign those respective users to the administration-related groups.

See System Groups.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, click the Users tab, and then click **Add User**.
4. In Add User, search for a user and select the user or select a user from the displayed list of users.
5. Click **Next**.
6. Click the checkbox for each of the licensed groups that you want to assign to the user and click **Finish**.

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Assign Licensed Groups to Users

You can assign the Oracle Fusion Data Intelligence licensed groups (also known as system groups) to the Oracle Fusion Cloud Applications users when they're synchronized from your Oracle Fusion Cloud Applications instance to the Oracle Identity Cloud Service instance to provide these users immediate access to Oracle Fusion Data Intelligence.

When you enable the synchronization of Oracle Fusion Cloud Applications with the Oracle Identity Cloud Service instance associated with your Oracle Fusion Data Intelligence instance, all the Oracle Fusion Cloud Applications groups are visible on the Security page in Oracle Fusion Data Intelligence. You must map the Oracle Fusion Cloud Applications custom groups to the Oracle Fusion Data Intelligence licensed groups. Later when you synchronize the users from Oracle Fusion Cloud Applications to Oracle Identity Cloud Service, Oracle Fusion Data Intelligence selects those users, checks if the mapped Oracle Fusion Cloud Applications custom groups are assigned to those users, and then assigns the corresponding licensed groups to those users. From release Platform 23.R4 onwards, the licensed groups are mapped by default to the licensed application roles which provide the applicable privileges to the users that have been assigned these groups. See Licensed Roles.

You must ensure that the custom roles are available in Oracle Fusion Cloud Applications and that you've assigned these roles to the users in Oracle Fusion Cloud Applications.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, click the Groups tab, and then search for the *FAW Licensed* groups.
4. Select a licensed group, for example FAW Licensed HCM Authors.
5. Click the Groups tab under the licensed group.
6. Click **Add Mapping**.
7. In Add Source System Role Mapping, search for and select the Oracle Fusion Cloud Applications custom groups that you want to map to the licensed group, for example the *FAW Licensed HCM Authors* licensed group.
8. Click **Save**.
9. After mapping the Oracle Fusion Cloud Applications custom groups to the Oracle Fusion Data Intelligence author and consumer licensed groups, under the Groups tab, select the frequency of the synchronization of the Oracle Fusion Data Intelligence licensed groups with the new Oracle Fusion Cloud Applications users.
10. Optional: Under the Groups tab, click **Apply Changes Now**.

    Oracle Fusion Data Intelligence adds the Oracle Fusion Data Intelligence licensed groups to the new Oracle Fusion Cloud Applications users.

Add Security Assignments to a User

Data security assignments filter data to match the user's assigned access. Users can't see data that isn't allowed according to their security assignment. You can assign a single user multiple security assignment values.

Before you add a security assignment to a user, you must ensure that:

- The user has the appropriate group assigned to them.
- The group has the appropriate data role to assign security values.

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1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, search for a user or select from the list of users displayed under the Users tab.
4. In Security Assignments, click **Grant Assignment**.
5. In Assign Security Assignments, select the security context for which you want to add data security assignments to the user. For example, security contexts such as ledgers or specific business units like AP business unit.
6. From the list of security assignments that you see based on the security context that you selected, select the values that you want to add to the selected user.

> **Note**
>
> The Grant Assignment process appends the values that you selected to the existing assignments.

Remove Security Assignments Granted to a User

As a security administrator, you can remove security assignments that are assigned to users.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, search for a user or select from the list of users displayed under the Users tab.
4. Select the checkbox for one or more security assignments that you'd like to remove from the selected users and click **Remove Assignment**.
5. In Remove Assignment, click **Remove Assignment**.

Copy Data Security Assignments

As a service administrator, you can copy data security assignments from one user to another user.

Copying bulk assignments could take some time to process. Monitor the Activity tab on the Security page.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, select a user from the users listed under the Users tab or search and select a user.
4. Click **Copy Assignments**.
5. In Copy Security Assignments From Another User:
   a. Under Copy From, search for and select a user to copy access from.

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b. Under Copy Security Access, you see the context-specific security assignments that would be copied.

6. Click **Copy**.

View the Excluded Data Security Assignments

View the data security assignments that are excluded for a user to know which data the specific user can't access.

When a user is excluded from certain data security assignments, the excluded assignments are visible in the user details section on the Security page. As a service or security administrator, you can set up exclusion rules to exclude certain data security assignments from a user. You can modify the exclusion rules to remove the excluded assignments for a user. See Set Exclusion Rules for Security Assignments.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, select a user from the users listed under the Users tab or search and select a user.
4. Click **Excluded Assignments**.

Manage Groups

Map application roles to groups, and add users to groups. This enables users to access the applicable objects and data in Oracle Fusion Data Intelligence and perform various tasks.

If you've set up synchronization of Oracle Fusion Cloud Applications with Oracle Identity Cloud Service, then users, job roles, and group memberships in Oracle Fusion Cloud Applications are synchronized as users, groups, and group memberships respectively. If you reassign a user to a different group in Oracle Identity Cloud Service while synchronization with Oracle Fusion Cloud Applications is enabled, then the synchronization process resets or erases such assignments during its next run.

Topics:

- Add Application Roles to a Group
- Copy Application Roles to a Group
- Remove Application Roles from a Group
- Create an Application Role While Mapping
- Enable Easy Data Access to People Leaders

Add Application Roles to a Group

As an Oracle Fusion Data Intelligence administrator, you can map the application roles available for Oracle Fusion Data Intelligence with the predefined and custom groups. This enables the groups to inherit the security setup at each application role level.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.

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3. On the Security page, click the Groups tab.
4. In the Groups region, search for a group and select it or select a group from the displayed list of groups.
5. In the group details region, click the Application Roles tab, and then click **Add Mapping**.
6. In Add Application Role Mappings, search for an application role and select it or select from the displayed list of application roles.

   You can filter the display to view only the data or duty roles or view both role types.
7. Click **Save**.

Copy Application Roles to a Group

As a service administrator, you can copy the application roles available from an existing group to another group.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, click the **Groups** tab.
4. In the Groups list, select the group to which you want to apply the application roles
5. On the Groups tab, click **Copy Role Mappings**.
6. In Copy Role Mappings From Another Group, search for a group that you want to copy roles from.
7. Click the roles in the Copy Roles area to select or deselect them, and then click **Copy**.
8. Click **Save**.

Remove Application Roles from a Group

You can remove capabilities inherited by a group from the application roles mapped to it.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, under the Groups tab, select a group from the displayed list of groups or search for a group.
4. In the group details region, click the Application Roles tab.
5. Select one or more roles from the displayed list or search for application roles and select the applicable role.
6. Click **Remove Mapping**.
7. In Remove Role Mapping, click **Remove Mapping**.

Create an Application Role While Mapping

While mapping application roles to a group, if you need an application role that isn't available in Oracle Fusion Data Intelligence, then you can create an application role.

The new role is mapped onto the specific group. You can map the new application role to other groups too. See Add Application Roles to a Group.

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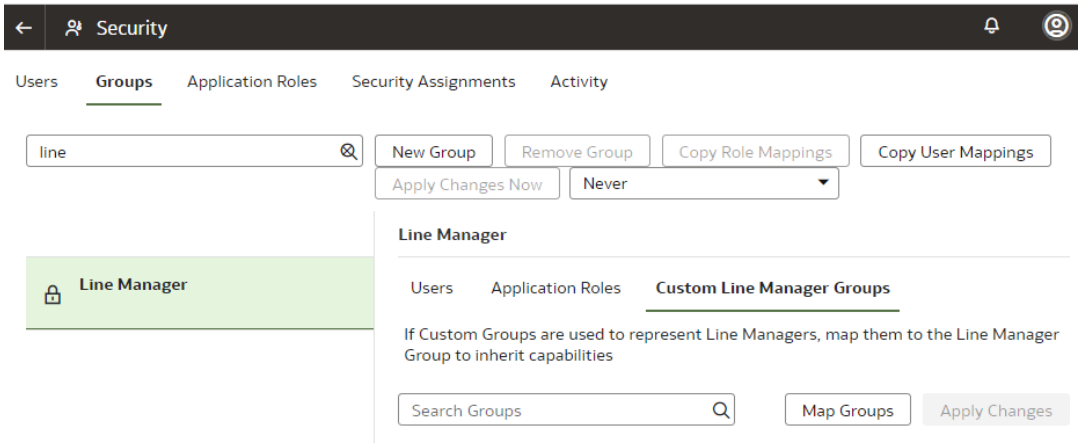
1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, under the Groups tab, select a group from the displayed list of groups or search for a group.
4. In the group details region, click the Application Roles tab, and then click **New Application Role**.
5. In Create a New Application Role , enter the application role name and specify the role type as data or duty.
6. Click **Save**.

Enable Easy Data Access to People Leaders

As a security administrator, you can provide data access to people leaders such as line managers. This access enables line managers to create indepth analytics that influence and guide finance and human resource related decisions.

You can provide easy access by mapping the custom line manager groups from Oracle Fusion Cloud Applications to theprebuilt line manager group available in Oracle Fusion Data Intelligence. This mapping ensures that the prebuilt line manager group inherits the capabilities of the custom line manager groups.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, click the Groups tab, and then search for the prebuilt **Line Manager** group.



4. Select the prebuilt **Line Manager** group and click the **Custom Line Manager Groups** tab.
5. In the **Custom Line Manager Groups** tabbed section, click **Map Groups**.
6. In the Map Custom Line Manager Groups dialog, select the custom groups and click **Assign Group Mapping**.

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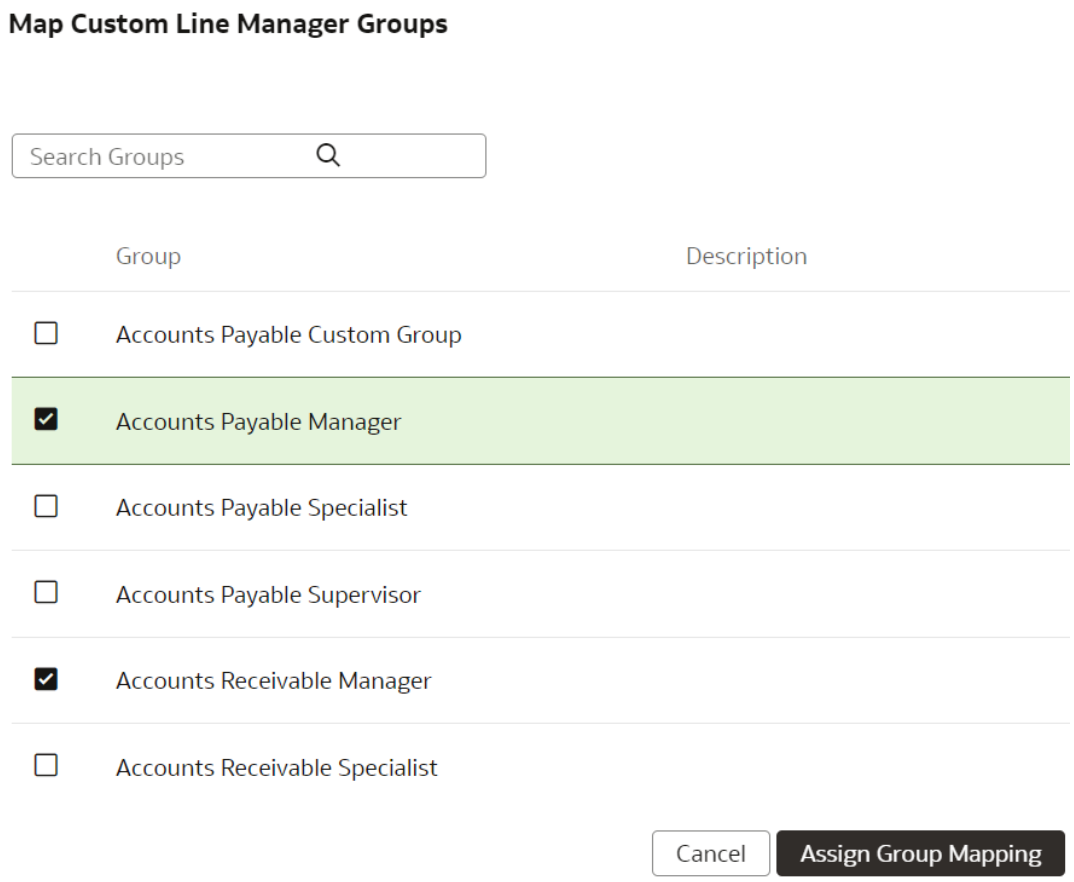
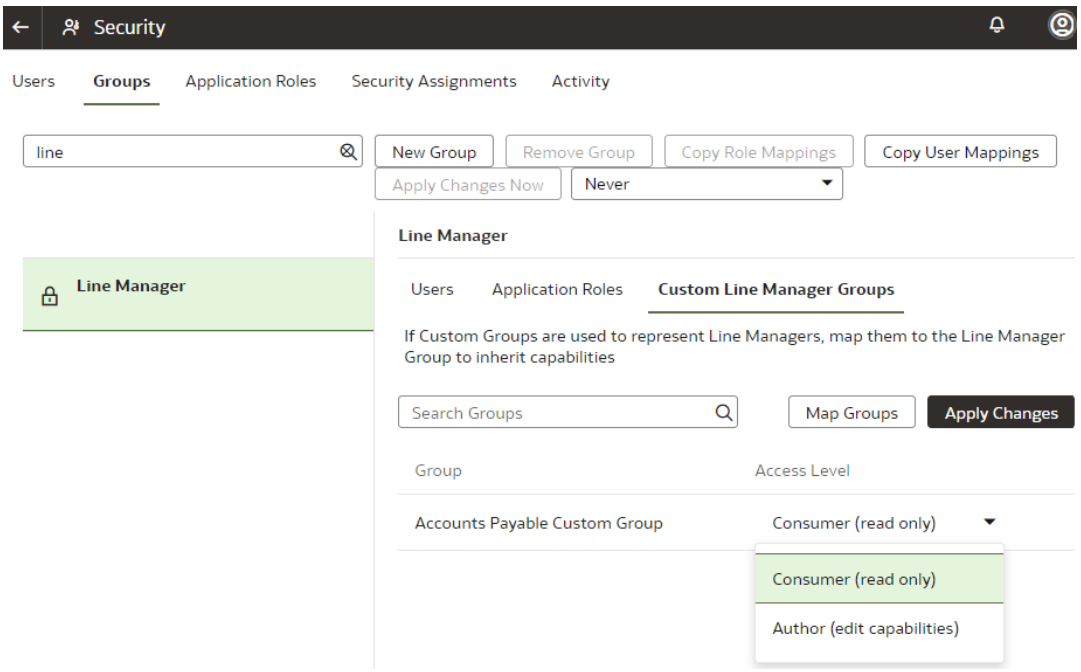


7. In the **Custom Line Manager Groups** tabbed section, for a selected custom line manager group, click the Access Level dropdown arrow and select the appropriate access level such as **Author (edit capabilities)** or **Consumer (read-only)**.



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8. In the **Custom Line Manager Groups** tabbed section, click **Apply Changes**.

Manage Application Roles

Application roles consist of duty roles for objects security and data roles for data access. You can create, update, and delete application roles and add or remove groups mapped to an application role.

You can map the ready-to use or custom application roles to groups to define the permissions associated with the group. See Create an Application Role.

Topics:

- Create an Application Role
- Delete an Application Role
- Assign Groups to Application Roles
- Remove a Group Mapped to an Application Role

Create an Application Role

You can create custom duty and data roles to secure subject areas, front-end objects, and row-level data respectively when the predefined application roles don't meet your business needs.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, click the Application Roles tab and then click **New Application Role**.
4. In Create a New Application Role, enter the application role name and specify the role type as data or duty.
5. Click **Save**.

Delete an Application Role

You can delete the custom application roles. Upon deletion of the custom application roles, Oracle Fusion Data Intelligence deletes the mappings to the groups.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, click the Application Roles tab.
4. Search for an application role or select from the displayed list of application roles.
5. Click **Remove Application Role**.
6. In the Delete Application Role? dialog, click **Delete Role**.

Assign Groups to Application Roles

Use these instructions to map application roles to groups.

1. Sign in to your service.

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2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, click the Application Roles tab.
4. Search for an application role or select from the displayed list of application roles.
5. In the application role details region, click **Assign Groups**.
6. In Add Group Mappings, search for a group and select it or select from the displayed list of groups.
7. Click **Save**.

Remove a Group Mapped to an Application Role

Use these instructions to remove a group mapped to an application role.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, click the **Application Roles** tab.
4. Search for an application role or select from the displayed list of application roles.
5. In the application role details region, select the checkbox for a displayed group or search for a group and select it, and then click **Remove Group**.
6. In the Remove Group Mapping? dialog, click **Remove Group**.

Download Security Configuration

You can download a CSV report detailing application roles and their mapped groups. The report also includes attributes that identify whether each entry is pre-configured or user-configured, also its role type.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, click the Application Roles tab.
4. On the Application Roles tab, click **Security Configuration Report**.

   The system downloads the role mappings as a ZIP file to your local machine. Extract the ZIP file to review the CSV report.

Manage Data Access

As a security administrator, you can manage data access by creating new security assignments or by applying existing Fusion security assignments.

Use the Security Assignments tab on the Security page to search for the currently set up data security assignments. You may either search for all records or narrow your search to a specific security context, security value, or user. You can remove a security assignment that you had set up or add new security assignments to a user.

Topics:

- Apply Existing Fusion Security Assignments

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- Create a Security Assignment
- Delete a Security Assignment
- Remove Users from a Security Assignment
- Manage Users for a Security Assignment
- Set Exclusion Rules for Security Assignments
- Update Security Assignments Automatically
- Define and Assign Custom Security Contexts
- Specify Data Access Rules

Apply Existing Fusion Security Assignments

To apply the existing Fusion security assignments within Fusion Data Intelligence for pillars other than Oracle Cloud HCM, you must map the data security roles to groups, and then upload the job role mappings using Upload Center.

As a part of implementing the Automated Fusion Security Assignments capability that brings the data security assignments for Ledgers and Business Units, you must manually upload the mapping for the job role code to the Oracle Fusion Data Intelligence data security role. Security assignments for the job role in Oracle Fusion Cloud Applications are then mapped to the Oracle Fusion Data Intelligence data security role. This doesn't eliminate the need for you to map users to the security contexts defined. If that mapping isn't done, then users in the new group that is assigned to the custom role get the same level of access to the Oracle Fusion Data Intelligence data security role and not the custom Oracle Fusion Cloud Applications job role and the corresponding group in Oracle Fusion Data Intelligence.

Perform these steps to apply existing Fusion Security Assignments for Ledgers and Business Units.

1. Manually map the job group to the Oracle Fusion Data Intelligence data security role.

   See Add Application Roles to a Group.

2. Upload the mapping for the Oracle Fusion Cloud Applications job role to the Oracle Fusion Data Intelligence data role using Upload Center.

   See Download and Upload Custom Job Roles Mappings.

   To find the appropriate Oracle Fusion Data Intelligence application role for a specific Oracle Fusion Cloud Applications job role, consult the role mapping tables for that functional area (pillar).

   - ERP Job Role Mappings
   - SCM Job Role Mappings
   - CX Job Role Mappings

3. You must create a pipeline for the **Security Configuration Option** functional area for the respective pillar.

   - ERP: How do I synchronize data security from Oracle Fusion Cloud Applications with Fusion Data Intelligence?
   - SCM: How do I synchronize data security from Oracle Fusion Cloud Applications with Fusion Data Intelligence?
   - CX: How do I synchronize data security from Fusion Sales Cloud (Cloud CX) with Fusion Data Intelligence?

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Create a Security Assignment

Use these instructions to create a security assignment in a specific security context.

Security contexts are categories that contain values that you can secure a user for. For example, you can define which users have access to which "ledgers" or "departments". In this example, "ledgers" and "departments" are security contexts. Within "ledgers", you can have "ledger A", ledger B", or "ledger C" as values. You first select "ledger", then select a value such as "ledger A", and then select the users to secure for "ledger A". The selected users can access "ledger A".

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.

   You see the Security page.
3. On the Security page, click the Security Assignments tab.

   You see all users who have been granted the security assignments in a specific security context.
4. Click **New Assignment**.
5. In New Security Assignment, under **Select Security Assignments**, select a security context, and then search for a security value or select from the displayed list.Move the selected security assignments to the column on the right.
6. Under **Select Users**, search for a user and select the user and move the user to the column on the right.

   Users are filtered based on the role associated with that context.
7. Click **Add to Cart** and then click **View Cart**.
8. In Security Assignments, click **Apply Assignments**.

   You can grant this security assignment to other users as required. Bulk assignments may take some time to process. See the Security Activity tab for details.

Delete a Security Assignment

Use these instructions to delete a security assignment. When you delete a security assignment, Oracle Fusion Data Intelligence removes all users associated with the security assignment.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.

   You see the Security page.
3. On the Security page, click the Security Assignments tab.
4. Select a security assignment from the displayed list of assignments or search for a security assignment and select it.
5. Click **Delete Assignment**.

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Remove Users from a Security Assignment

You can revoke the security assignment granted to one or more users.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.

   You see the Security page.
3. On the Security page, click the Security Assignments tab.
4. Select a security assignment from the displayed list of assignments or search for a security assignment and select it.
5. In the security assignment details region, select the users from the displayed list of users or search for and select the users.
6. Click **Remove User**.
7. In Revoke User Assignment, click **Revoke Assignment**.

Manage Users for a Security Assignment

As a security administrator, you can manage users for existing data security assignments. In the Manage Users dialog, you can revoke users for an existing assignment or add new users for that assignment.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.

   You see the Security page.
3. On the Security page, click the Security Assignments tab.
4. Select a security assignment from the displayed list of assignments or search for a security assignment and select it.
5. In the security assignment details region, click **Manage Users**.
6. In Manage Users:
   a. Under **Add User**, search for a user and select the user.
   b. Under **User**, click the **Delete** icon to revoke the user from the assignment.
7. Click **Save**.

Set Exclusion Rules for Security Assignments

You can set up data security to exclude access for specific users within a security context for specific security assignments.

For example, you can grant access to all security assignments but the business unit ABC. This enables you to have a single rule for a single user within a security context. You can also remove the indirectly derived security assignments of the specific user. Ensure that the users for whom you want to exclude assignments are members of a group related to the security context. You can automate the application of the security exclusion rules by downloading the DataSecurityExclusionAssignments_csv.zip, making changes, and then uploading it; see Download and Upload Data Security Exclusion Rules.

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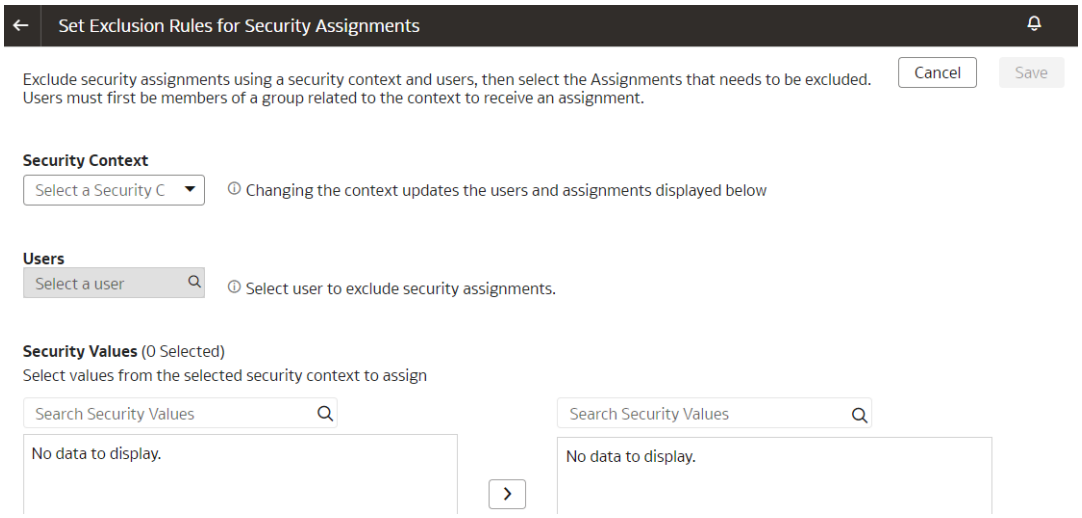
> **Note**
>
> You can't set Exclusion Rules for Custom Security Contexts.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under Service Administration.
3. On the Security page, click **Security Assignments**, and then click **Exclusion Rules**.
4. On the Set Exclusion Rules for Security Assignments page, select the security context such as Ledgers in **Security Context**, select a user to exclude security assignments in **Users**, and then in **Security Values**, select the assignments that you want to exclude from the selected user within the selected security context.



5. Click **Save**.

Update Security Assignments Automatically

As a security administrator, automate the updating of security assignments to effectively manage the regular security assignment changes in your organization.

If you want to automate the insertion and deletion of data in the format of USERNAME, SEC_OBJ_CODE, SEC_OBJ_MEMBER_VAL, Operation (to add or to remove the mapping), then configure the changes in the security assignments to be updated automatically and regularly.

To ensure that the changes in security assignment are updated automatically, you must create a table for the OAX_USER schema in Oracle Autonomous AI Lakehouse associated with your Oracle Fusion Data Intelligence instance. Ensure that you name the table "CUSTOMER_FAW_CONTENT_AUTOSYNC_ASSIGNMENT". You must seed data into this table regularly with the timestamp in universal time (UTC) format in the "CREATION_DATE" column of the table. The CREATION_DATE column ensures that the same records aren't processed repeatedly and no record is missed. Oracle Fusion Data Intelligence periodically scans the synonym (2 hours once), pick up the values, and based on the "CREATION_DATE" criteria, populates the FAW_CONTENT_AUTOSYNC_ASSIGNMENT table in the OAX$INFRA schema in Oracle Autonomous AI Lakehouse. Later, Oracle Fusion Data Intelligence

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processes the data and uploads the security assignments as per the FAW_CONTENT_AUTOSYNC_ASSIGNMENT table.

1. In Oracle Autonomous AI Lakehouse associated with your Oracle Fusion Data Intelligence instance, create the CUSTOMER_FAW_CONTENT_AUTOSYNC_ASSIGNMENT table in OAX_USER schema using the following script:

```
CREATE TABLE CUSTOMER_FAW_CONTENT_AUTOSYNC_ASSIGNMENT (
    "USERNAME"           VARCHAR2(256 CHAR),
    "SEC_OBJ_CODE"       VARCHAR2(256 CHAR),
    "SEC_OBJ_MEMBER_VAL" VARCHAR2(4000 CHAR),
    "OPERATION_TYPE"     VARCHAR2(65 CHAR),
    "CREATION_DATE"      TIMESTAMP(6)
);

-- Grant access from the schema OAX_USER

GRANT SELECT ON CUSTOMER_FAW_CONTENT_AUTOSYNC_ASSIGNMENT TO OAX$INFRA;
COMMIT;
```

2. In the CUSTOMER_FAW_CONTENT_AUTOSYNC_ASSIGNMENT table, specify the actual values for "USERNAME", "SEC_OBJ_CODE", "SEC_OBJ_MEMBER_VAL", "OPERATION_TYPE", and "CREATION_DATE". For "OPERATION_TYPE", enter "ADD" and enter the timestamp in "CREATION_DATE" in "2024-02-21 12:34:56.789" format.

Define and Assign Custom Security Contexts

As a security administrator, you can define custom security contexts and assign them to data roles. This enables you to assign additional security assignments to users along with the ready-to-use security assignments.

Security configurations for application roles enable you to define the data security filtering for an application role directly from the Security page. For example, if you want to secure GL data by county, which isn't a ready-to-use security context, you can create a custom security context.

You can export your custom security context configurations and secure objects properties to a CSV file for review. See Generate and Download a Security Report.

Before securing data within a dimension, confirm that it's connected through joins to every fact table containing the data you wish to protect. To verify the relationship between the fact table and the dimension table, refer to the logical star or relationship diagram for these:

- Relationship Diagram in Fusion CX Analytics.
- Relationship Diagram in Fusion ERP Analytics.
- Relationship Diagram in Fusion HCM Analytics.
- Relationship Diagram in Fusion SCM Analytics.

1. If you've the User Administrator role in the identity domain associated with your Oracle Fusion Data Intelligence instance, create a group such as "CustomSecContextGroup" in the identity domain. See Create a Group.
2. Sign in to your service.
3. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.

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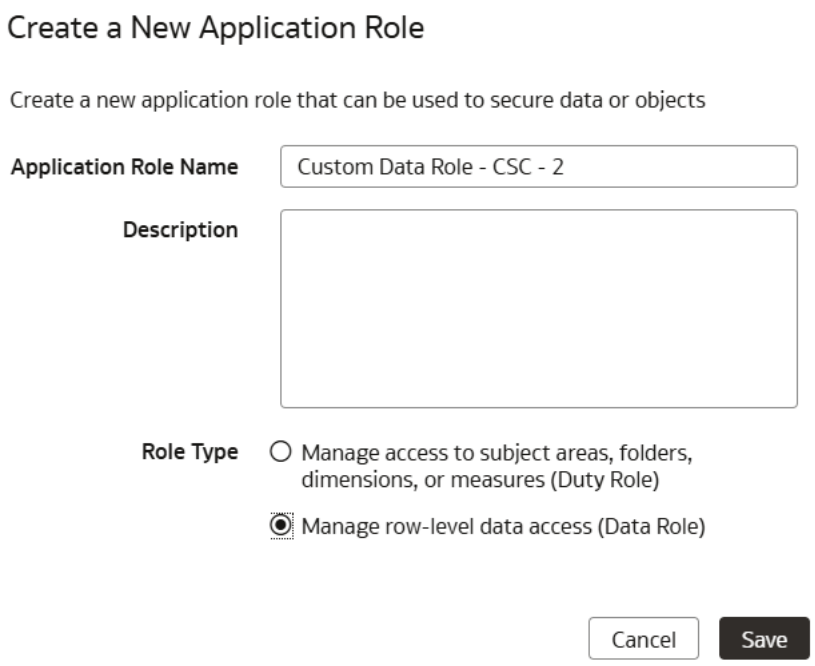
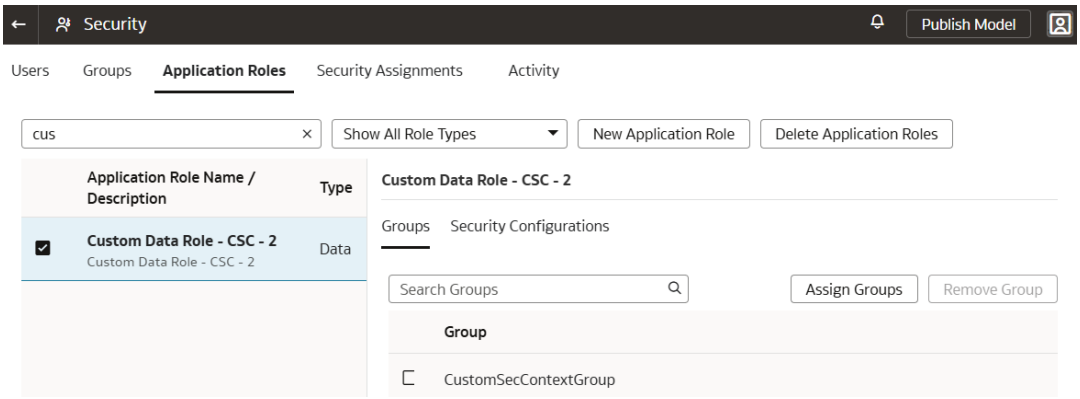
4. In the Application Roles tab, create a custom application role such as "Custom Data Role - CSC - 2".

   See Create an Application Role.



5. In the Application Roles tab, select the applicable role such as the "Custom Data Role - CSC - 2", click **Groups**, and then click **Assign Groups** to assign "Custom Data Role - CSC - 2" to "CustomSecContextGroup" that you created previously.



   See Assign Groups to Application Roles.

6. In the Application Roles tab, select the applicable role such as the "Custom Data Role - CSC - 2", and click **Security Configurations**.

7. In the Security Configurations tab, add the custom security as follows and then click **Save Configuration**:

   - **Security Context Name**: Provide a name for the custom security context, such as `Secure By Job Function`.
   - **Attributes Driving Security**: Click and in Select an object dialog, search for an object and select the attribute to drive the security, such as a **Job Function**.

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> **Note**
>
> The attributes from a degenerate dimension can't drive security context. Use only the conformed dimension attributes.

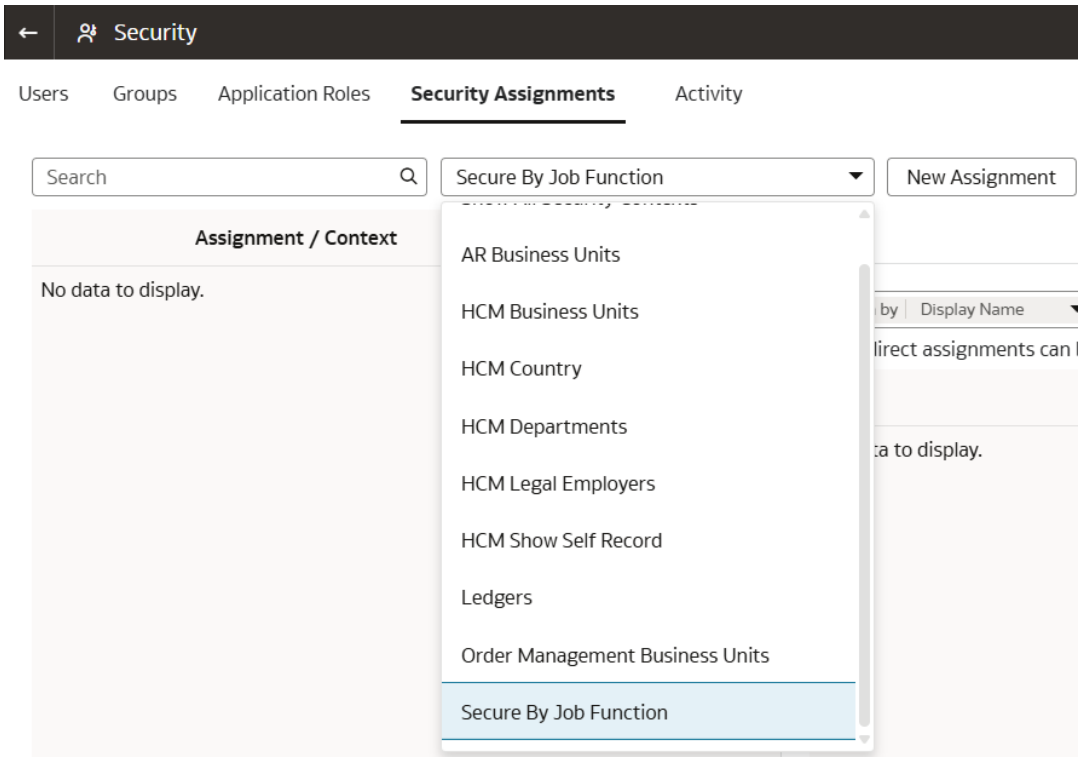
- **Functional Group**: Select a prebuilt functional group or enter a unique functional group name in the text box to create a custom functional group such as `CUSTOM_JOB_FUNC_FG`.

> **Note**
>
> The functional group drives the query. If you've selected an existing functional group, the query creates the OR condition and if you've selected a new functional group, the query adds the AND condition.

Before securing data with a prebuilt functional group, confirm its relationships with the associated data roles and fact tables. See the Prebuilt Functional Groups, Data Roles, and Fact Table Relationships data security relationship spreadsheet for details.

- **Objects to Secure**: Click and in Select an object dialog, search for an object, such as **Fact - Assignment**, and select it secure by the custom application role that you created.

8. For standard Security, in the Security Assignments tab, click the **Show All Security Contexts** dropdown list to verify that the custom security context that you created, such as **Secure By Job Function** is visible in the list.



9. On the Security page, click **Publish Model** to make the custom configurations available in the semantic model.

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10. Navigate to the Semantic Model Extensions page, and click the Activity tab to know whether the custom security configuration has been published.

    See View Activity History of Semantic Model Extensions.

11. Assign the custom security context to a user.

    See Add Security Assignments to a User and Manage Users for a Security Assignment.

12. Publish the semantic model. .

Specify Data Access Rules

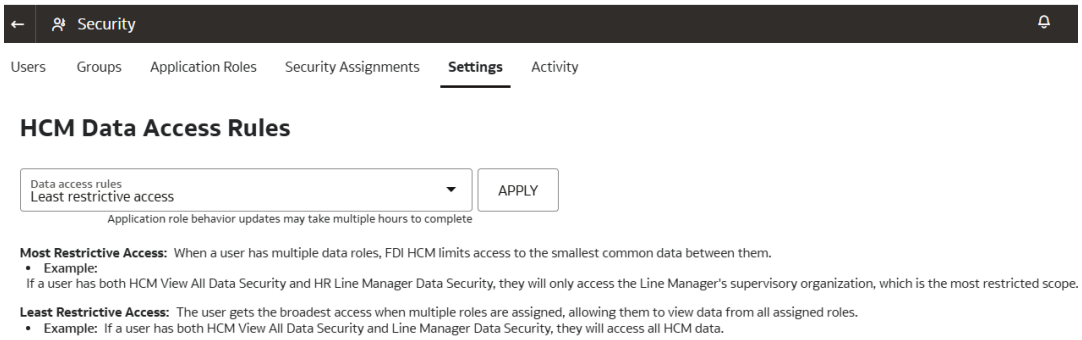
You can change the prebuilt behaviour of data roles from *Most Restrictive* to *Least Restrictive* to keep data access flexible to suit your business requirements.

You can change this setting as many times as required. However, the data role behavior updates may take multiple hours to complete. You can monitor the Activity tab on the Semantic Model Extensions page to verify the progress of this change. This capability is available for Fusion HCM Analytics currently.

When a user has multiple data roles, the Most Restrictive Access rule limits access to the smallest common data between them. For example, if a user has both HCM View All Data Security and HR Line Manager Data Security data roles, they can only access the Line Manager's supervisory organization, which is the most restricted scope.

With the Least Restrictive Access rule, the user gets the broadest access when multiple roles are assigned, allowing them to view data from all assigned roles. For example. if a user has both HCM View All Data Security and Line Manager Data Security data roles, they can access all Fusion HCM Analytics data.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, click the Settings tab.
4. From the **Data Access Rules** list, select the applicable rule.



5. Click **Apply**.
6. Navigate to the Semantic Model Extensions page, click the Activity tab, and observe the status of **Publish Customizations** activity. When the **State** changes to **Done**, the data access rules update is complete.

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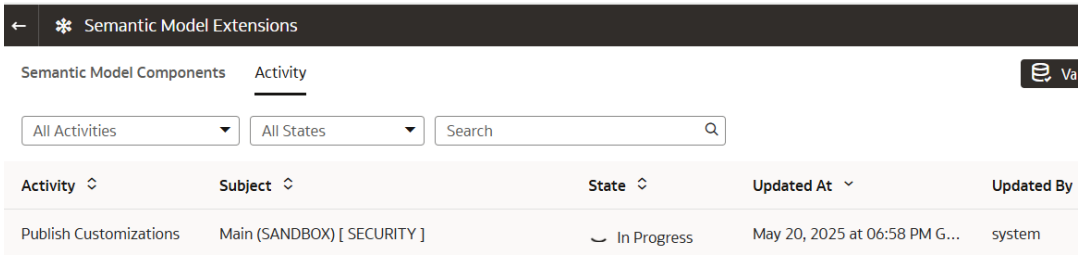

Enable AOR-Based Security

Enable AOR-based security in Oracle Fusion Data Intelligence to align with the AOR-based person security profile configured in Oracle Cloud HCM.

Key points to consider:

- Enable the **Security Configuration Data** functional area under **HCM Security Configurations** offering.
- Only the person security profiles associated with data roles in Oracle Cloud HCM are considered for auto-provisioning data roles in Fusion Data Intelligence.
- Fusion Data Intelligence data roles are automatically provisioned based on the Oracle Cloud HCM person security profiles configured with the scope of responsibility and responsibility type, and with or without additional criteria defined.

> **Note**
>
> Even though the data roles are provisioned for person security profiles configured with additional criteria, the additional criteria aren't included in the provisioned data roles. For person security profiles with additional criteria (custom criteria, exclusion criteria, or changes in the assignment type selection) defined, you must create custom data roles using configurable security context in Fusion Data Intelligence to apply the additional criteria.

- Any updates made to the responsibility type and scope of responsibility in a user's AOR-based person security profile in Oracle Cloud HCM, Fusion Data Intelligence automatically updates the Fusion Data Intelligence data roles.
- The following subject areas aren't secured by the AOR-based data roles:
  - HCM - Talent Acquisition
  - HCM - Succession Management
  - HCM - Diversity Analysis

For non-AOR based data roles, the four prebuilt context (Business Unit, Legal Entity, Country, and Department) dimensions are unsecured by default when a user has the corresponding prebuilt data roles.

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Configure Permissions for Metadata and Front-End Objects

Configure the permissions for metadata objects such as subject areas and its elements and front-end objects such as Oracle Analytics Cloud catalog items and key metrics with the prebuilt or the custom-created duty roles.

You secure the subject areas and their elements through "Configure Object Permissions", a prebuilt single step. See Configure Object Permissions.

Configure Permission for Oracle Analytics Cloud Objects

You can configure permissions for Oracle Analytics Cloud catalog objects such as folders, workbooks, datasets, data flows, sequences, connections, and machine learning models individually by adding the applicable duty role and assigning the appropriate level of access.

See Assign Shared Catalog Folder and Workbook Permissions.

Configure Permission for Key Metrics

Specific Administrator and Author licensed application roles are granted permissions to manage key metrics, including creating, updating, deleting, and managing their access levels. See Licensed Roles.

To consume a key metric, a user must have read access to the subject area and to any columns referenced in the key metric expression. You can define the access level by configuring object permissions in the Semantic Model Extensions security settings. See Configure Object Permissions.

> **Note**
>
> Because the Restricted Author system role is included in the Author system role, Authors inherit its permissions. If Authors need less access to key metrics than Restricted Authors, create a custom application duty role instead of using the system role.

You can control access to all key metrics within a subject area by configuring the subject area's shared object access permissions. Assign key metric access permissions to an application duty role within a subject area to define who can access its key metrics and other associated shared objects, and what actions they can perform.

> **Note**
>
> Updating access to a subject area's shared objects also affects all workbook shared objects, including key metrics, shared filter groups, shared data actions, and shared custom calculations.

1. On the Oracle Fusion Data Intelligence Console, click **Go to Home Page** to open Oracle Analytics Cloud.
2. On the Oracle Analytics Cloud home page, click inside the search bar and select **Subject Area**.
3. Find the subject area that you want to add permissions to or update permissions for, click **Actions**, and then click **Inspect**.

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4. Click the Access tab to manage which roles have full control or write access to the subject area's key metrics and shared objects. To provide consumer-only access, remove the role from the **Access** list. Access is then granted according to the licensed application role and Semantic Model object access level.

   See Manage a Subject Area's Permissions.

View Activity History

View all the security-related activities or filter them by object type and by date for security audit purposes.

The status icon next to each action shows whether it's in progress, in a warning state (if items in a bulk action failed), failed (and therefore incomplete), or completed successfully. You can also hover over error icons to read the full error message that might assist with troubleshooting.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.

   You see the Security page.
3. On the Security page, click the **History** tab.

   You see all the activities by object type and date, by default. You can organize the display by sorting columns, searching for descriptive text, selecting a specific object type, or selecting the number of days from the drop-down lists.

Manage Uploads and Downloads

As the cloud account administrator with security administrator or functional administrator or service administrator role, you can upload and download data to your data warehouse using the Upload tile on the Console.

Topics:

- About Uploading and Downloading Your Data
- Upload and Download Data Security Assignments
- Upload and Download Financial Categories
- Upload and Download Financial Category Assignments
- Download and Upload Area of Responsibility Data
- Download and Upload Custom Job Roles Mappings
- Download and Upload Data Security Exclusion Rules

About Uploading and Downloading Your Data

The Upload tile in the Console enables the cloud account administrators to upload and download the following:

- Data security assignments
- Financial categories
- Financial category assignments

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- User to group associations

You can upload and download only csv files.

Upload and Download Data Security Assignments

You can download security assignment template files to help you set up security assignments, and then upload the files to your environment.

You can download and upload files using the **Security** or **Uploads** tile in the Oracle Fusion Data Intelligence Administration Console

You have the following options to download the Data Security Assignments:

- **Sample** - provides a csv file with relevant headers to help familiarize you with the types of data you can expect.
- **Current** - provides a list of current data assignments you can download to your test or production environments.
- **Filter By** - provides you options to select specific data security contexts.

Regardless of the file you download, you need to populate these columns: USERNAME, SEC_OBJ_CODE, and SEC_OBI_MEMBER_VAL. Don't change any of the header names in the downloaded files. When you're done updating the files, you can upload them to your environment.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence Administration Console, click either: **Uploads** or **Security** .
    - **Uploads**
    - **Security** and then select the Security Assignments tab.
3. Click **Download File**, select **Data Security Assignments** and then select the type of file you want to download.
4. Open the csv file you downloaded and complete the fields as required:
    - USERNAME: The user name and user display name.
    - SEC_OBJ_CODE: The object code for which you're adding the data security assignment.
    - SEC_OBJ_MEMBER_VAL: The security assignment member for each context. See Security Object Tables.
5. When you're done updating the file, save your changes.
6. On the Uploads page or in the Security Assignments tab of the Security page, click **Upload** and the applicable file type.
    a. Select whether you want to **Merge to the existing settings** or **Replace existing configuration settings**.

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> **Note**
>
> **Replace existing configuration settings** deletes existing data security assignments.
>
> Ensure that these prerequisites are in place:
>
> - Security assignment has 1:1 mapping with application roles.
> - Application roles are assigned to groups.
> - Users who are being assigned to a security context are part of the group that's linked to the security context through the application roles.

b. Select the file you want to upload and click **Upload File**.

   You can review the status of the upload on the **Uploads** tab.

7. In the Uploads page, use **Actions** next to the file name to perform actions on a specific upload file:
   - Click **Properties** to check the upload statistics.
   - Click **Download** to download the file you just uploaded in the event you want to upload the file again.
   - Click **Delete** if a file fails to process and you want to remove the file history.

Security Object Tables

Use these security object codes and associated SQL to access the assignment member for each context.

Security Objects

Security Object	Code
AP Business Units	OA4F_SEC_FIN_AP_BUSINESSUNIT_LIST
AR Business Units	OA4F_SEC_FIN_AR_BUSINESSUNIT_LIST
Cost Organizations	OA4F_SEC_CST_COST_ORG_LIST
FA Asset Book	OA4F_SEC_FIN_FA_ASSET_BOOK_LIST
HCM Business Units	OA4F_SEC_HCM_BUSINESSUNIT_LIST
HCM Country List	OA4F_SEC_HCM_COUNTRY_LIST
HCM Departments	OA4F_SEC_HCM_DEPARTMENT_LIST
HCM Legal Employers	OA4F_SEC_HCM_LEGAL_EMPLOYER_LIST
HCM Show Self Record	OA4F_SEC_HCM_SEE_SELF_RECORD
Inventory Business Units	OA4F_SEC_INV_BUSINESSUNIT_LIST
Inventory Organizations	OA4F_SEC_INV_ORG_TRANSACTIONS_LIST
Ledgers	OA4F_SEC_FIN_LEDGER_LIST
Order Management Business Units	OA4F_SEC_OM_BUSINESS_UNIT_LIST
Project Business Units	OA4F_SEC_PPM_PROJECT_BUSINESSUNIT_LIST
Project Expenditure Business Units	OA4F_SEC_PPM_EXPENDITURE_BUSINESSUNIT_LIST
Project Organizations	OA4F_SEC_PPM_PROJECT_ORGANIZATION_LIST

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Security Object	Code
Requisition Business Units	OA4F_SEC_PROC_REQ_BUSINESSUNIT_LIST
Spend Procurement Business Units	OA4F_SEC_PROC_SPEND_PRC_BUSINESSUNIT_LIST

Assignment Member SQL

Security Object Code	SQL Code
OA4F_SEC_CST_COST_ORG_LIST	SELECT DISTINCT TL.ORGANIZATION_NAME AS NAME, TL.ORGANIZATION_ID AS VALUE FROM DW_CST_COST_ORG_BOOKS_D D, DW_INTERNAL_ORG_D_TL TL WHERE D.COST_ORG_ID = TL.ORGANIZATION_ID AND TL.LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANGUAGES') AND D. COST_ORG_ID <>-99999
OA4F_SEC_FIN_AP_BUSINESSUNIT_LIST	SELECT TL.ORGANIZATION_NAME AS NAME, TL.ORGANIZATION_ID AS VALUE FROM DW_INTERNAL_ORG_D D, DW_INTERNAL_ORG_D_TL TL WHERE (D.PAYABLES_INVOICING_BU_FLAG = 'Y' OR D.PAYABLES_PAYMENT_BU_FLAG = 'Y') AND D.ORGANIZATION_ID = TL.ORGANIZATION_ID AND TL.LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANGUAGES') AND D.ORGANIZATION_ID <> -99999

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Security Object Code	SQL Code
OA4F_SEC_FIN_AR_BUSINESSUNIT_LIST	SELECT TL.ORGANIZATION_NAME AS NAME, TL.ORGANIZATION_ID AS VALUE FROM DW_INTERNAL_ORG_D D, DW_INTERNAL_ORG_D_TL TL WHERE (D.BILLING_REVENUE_MNG_BU_FLAG = 'Y' OR D.CUSTOMER_PAYMENTS_BU_FLAG = 'Y') AND D.ORGANIZATION_ID = TL.ORGANIZATION_ID AND TL.LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANG UAGES') AND D.ORGANIZATION_ID <> -99999
OA4F_SEC_FIN_FA_ASSET_BOOK_LIST	SELECT BOOK_TYPE_CODE AS name, BOOK_TYPE_CODE AS value FROM DW_FA_MC_BOOK_CONTROLS_D WHERE MC_FLAG = 'N'
OA4F_SEC_FIN_LEDGER_LIST	SELECT ledger.ledger_name AS name, ledger.ledger_id AS value FROM dw_ledger_d ledger WHERE ledger.ledger_id <> - 99999
OA4F_SEC_HCM_BUSINESSUNIT_LIST	SELECT TL.BUSINESS_UNIT_NAME AS NAME, TL.BUSINESS_UNIT_ID AS VALUE FROM DW_BUSINESS_UNIT_D_TL TL WHERE TL.LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANG UAGES')

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Security Object Code	SQL Code
OA4F_SEC_HCM_COUNTRY_LIST	SELECT TL.COUNTRY_NAME AS NAME, TL.COUNTRY AS VALUE FROM DW_COUNTRY_D_TL TL WHERE TL.LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANGUAGES')
OA4F_SEC_HCM_DEPARTMENT_LIST	select TL.DEPARTMENT_NAME AS NAME, TL.DEPARTMENT_ID AS VALUE FROM DW_DEPARTMENT_D_TL TL where LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANGUAGES')
OA4F_SEC_HCM_LEGAL_EMPLOYER_LIST	SELECT TL.LEGAL_EMPLOYER_NAME AS NAME, TL.LEGAL_EMPLOYER_ID AS VALUE FROM DW_LEGAL_EMPLOYER_D_TL TL WHERE LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANGUAGES')
OA4F_SEC_HCM_SEE_SELF_RECORD	SELECT YESNO_LKP_CODE AS VALUE, NAME AS NAME FROM DW_YESNO_LKP_TL WHERE CODE_TYPE LIKE 'FA_YESNO' AND LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANGUAGES') AND YESNO_LKP_CODE IN ('NO')

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Security Object Code	SQL Code
OA4F_SEC_INV_BUSINESSUNIT_LIST	SELECT TL.BUSINESS_UNIT_NAME AS NAME, TL.BUSINESS_UNIT_ID AS VALUE FROM DW_BUSINESS_UNIT_D_TL TL WHERE TL.BUSINESS_UNIT_ID IN (SELECT DISTINCT(INV_BUSINESS_UNIT_ID) FROM DW_INV_ORGANIZATION_D) AND TL.LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANGUAGES') AND TL.BUSINESS_UNIT_ID <> '-99999'
OA4F_SEC_INV_ORG_TRANSACTIONS_LIST	SELECT INV_ORGANIZATION_NAME AS NAME, INV_ORGANIZATION_ID AS VALUE FROM DW_INV_ORGANIZATION_D_TL TL WHERE TL.LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANGUAGES') AND TL.INV_ORGANIZATION_ID <> '-99999'
OA4F_SEC_OM_BUSINESS_UNIT_LIST	SELECT TL.BUSINESS_UNIT_NAME AS NAME, TL.BUSINESS_UNIT_ID AS VALUE FROM DW_BUSINESS_UNIT_D_TL TL WHERE TL.LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANGUAGES') AND TL.BUSINESS_UNIT_ID<>-99999

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Security Object Code	SQL Code
OA4F_SEC_PPM_CONTRACT_BUSINESSUNIT_LIST	SELECT TL.ORGANIZATION_NAME AS NAME, TL.ORGANIZATION_ID AS VALUE FROM DW_INTERNAL_ORG_D D, DW_INTERNAL_ORG_D_TL TL WHERE (D.CUST_CONTRACT_MNGMNT_BU_FLAG = 'Y' AND D.BUSINESS_UNIT_FLAG = 'Y') AND D.ORGANIZATION_ID = TL.ORGANIZATION_ID AND TL.LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANG UAGES') AND D.ORGANIZATION_ID<>-99999
OA4F_SEC_PPM_EXPENDITURE_BUSINESSUNIT_LIST	SELECT TL.ORGANIZATION_NAME AS NAME, TL.ORGANIZATION_ID AS VALUE FROM DW_INTERNAL_ORG_D D, DW_INTERNAL_ORG_D_TL TL WHERE (D.PROJECT_ACCOUNTING_BU_FLAG = 'Y' AND D.BUSINESS_UNIT_FLAG = 'Y') AND D.ORGANIZATION_ID = TL.ORGANIZATION_ID AND TL.LANGUAGE = USERENV('LANG') AND D.ORGANIZATION_ID<>-99999
OA4F_SEC_PPM_PROJECT_BUSINESSUNIT_LIST	SELECT TL.ORGANIZATION_NAME AS NAME, TL.ORGANIZATION_ID AS VALUE FROM DW_INTERNAL_ORG_D D, DW_INTERNAL_ORG_D_TL TL WHERE (D.PROJECT_ACCOUNTING_BU_FLAG = 'Y' AND D.BUSINESS_UNIT_FLAG = 'Y') AND D.ORGANIZATION_ID = TL.ORGANIZATION_ID AND TL.LANGUAGE = USERENV('LANG') AND D.ORGANIZATION_ID<>-99999

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Security Object Code	SQL Code
OA4F_SEC_PPM_PROJECT_ORGANIZATION_LIST	SELECT TL.ORGANIZATION_NAME AS NAME, TL.ORGANIZATION_ID AS VALUE FROM DW_INTERNAL_ORG_D D, DW_INTERNAL_ORG_D_TL TL WHERE (D.PROJECT_ORGANIZATION_FLAG = 'Y') AND D.ORGANIZATION_ID = TL.ORGANIZATION_ID AND TL.LANGUAGE = USERENV('LANG') AND D.ORGANIZATION_ID<>-99999
OA4F_SEC_PROC_REQ_BUSINESSUNIT_LIST	SELECT TL.ORGANIZATION_NAME AS NAME, TL.ORGANIZATION_ID AS VALUE FROM DW_INTERNAL_ORG_D D, DW_INTERNAL_ORG_D_TL TL WHERE (D.REQUISITION_BU_FLAG = 'Y' AND D.BUSINESS_UNIT_FLAG = 'Y') AND D.ORGANIZATION_ID = TL.ORGANIZATION_ID AND TL.LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANG UAGES') AND D.ORGANIZATION_ID<>-99999
OA4F_SEC_PROC_SPEND_PRC_BUSINESSUNIT_LIST	SELECT TL.ORGANIZATION_NAME AS NAME, TL.ORGANIZATION_ID AS VALUE FROM DW_INTERNAL_ORG_D D, DW_INTERNAL_ORG_D_TL TL WHERE (D.PROCUREMENT_BU_FLAG = 'Y' AND D.BUSINESS_UNIT_FLAG = 'Y') AND D.ORGANIZATION_ID = TL.ORGANIZATION_ID AND TL.LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANG UAGES') AND D.ORGANIZATION_ID<>-99999

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Security Object Code	SQL Code
OA4F_SEC_SCM_MFGORG_LIST	SELECT MFG_ORGANIZATION_NAME AS NAME, MFG_ORGANIZATION_ID AS VALUE FROM DW_MFG_ORGANIZATION_D_TL TL WHERE TL.LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANG UAGES') AND TL.MFG_ORGANIZATION_ID <> '-99999'
OA4F_SEC_SCM_MNTORG_LIST	SELECT INV_ORGANIZATION_NAME AS NAME, INV_ORGANIZATION_ID AS VALUE FROM DW_INV_ORGANIZATION_D_TL TL WHERE TL.LANGUAGE = (SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE PARAMETER_CODE='PARAM_GLOBAL_FAW_LANG UAGES') AND TL.INV_ORGANIZATION_ID <> '-99999'

Upload and Download Financial Categories

You can download financial category template files to help you set up financial categories, and then upload the files to your environment.

You can download **Sample** or **Current** files. Sample provides a csv file with relevant headers to help familiarize you with the types of data you can expect. Current provides a list of current data assignments you can download to your test or production environments. Regardless of the file you download, you need to populate the FINANCIAL_CATEGORY column. Don't change any of the header names in the downloaded files. When you're done updating the files, you can upload them to your environment.

> **Note**
>
> **Replace existing configuration settings** deletes existing data security assignments.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Uploads** under Application Administration.

   You see the Uploads page.

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3. On the Uploads page, click **Download File**, select **Financial Categories** and then select the type of file you want to download.
4. Open the csv file you downloaded and populate the fields as required:
   - FINANCIAL_CATEGORY: The financial category code.
5. When you're done updating the file, save your changes.
6. On the Uploads page, click **Upload File** and the applicable file type.
7. Select whether you want to **Merge to the existing settings** or **Replace existing configuration settings**.
8. Select the file you want to upload and click **Upload File**.

   You can review the status of the upload on the **Uploads** tab.
9. Use **Actions** next to the file name to perform actions on a specific upload file:
   - Click **Properties** to check the upload statistics.
   - Click **Download** to download the file you just uploaded in the event you want to upload the file again.
   - Click **Delete** if a file fails to process and you want to remove the file history.

Upload and Download Financial Category Assignments

You can download financial category assignment template files to help you set up financial categories, and then upload the files to your environment.

You can download **Sample** or **Current** files. Sample provides a csv file with relevant headers to help familiarize you with the types of data you can expect. Current provides a list of current data assignments you can download to your test or production environments. Prior to downloading a file, you must select the segment combination you want to use to map your financial categories in the Select Columns dialog. The list prepopulates the segments defined in your chart of accounts that are BI enabled. Regardless of the file you download, you need to populate the FINANCIAL_CATEGORY column. Don't change any of the header names in the downloaded files. When you're done updating the files, you can upload them to your environment.

> **Note**
>
> **Replace existing configuration settings** deletes existing data security assignments.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Uploads** under Application Administration.

   You see the Uploads page.
3. On the Uploads page, click **Download File**, select **Financial Category Assignments** and then select the type of file you want to download.
4. Open the csv file you downloaded and populate the fields as required:
   - CHART_OF_ACCOUNTS – Name of your chart of accounts.
   - Actual segment values.

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- FINANCIAL_CATEGORY: The financial category code. This can be a predefined category or a custom category defined using the Financial Categories upload option.

5. When you're done updating the file, save your changes.
6. On the Uploads page, click **Upload File** and the applicable file type.
7. Select whether you want to **Merge to the existing settings** or **Replace existing configuration settings**.

> **Note**
>
> If you want to change the segment combination for your financial category definition, then ensure to provide the data for all chart of accounts and use the replace option. The data is completely replaced. Different segment combinations for different chart of accounts is NOT supported.

8. Select the file you want to upload and click **Upload File**.

   You can review the status of the upload on the **Uploads** tab.
9. Use **Actions** next to the file name to perform actions on a specific upload file:
   - Click **Properties** to check the upload statistics.
   - Click **Download** to download the file you just uploaded in the event you want to upload the file again.
   - Click **Delete** if a file fails to process and you want to remove the file history.

Download and Upload Area of Responsibility Data

If you use Oracle Fusion HCM Analytics, then you can manage the area of responsibility (AOR) data in the Oracle Autonomous AI Lakehouse associated with the Oracle Fusion Data Intelligence instance for security setups.

You can use the AOR-related data in custom security setups and for mass assignment. You can download the latest AOR data security assignment files to make changes to the existing data and upload it back. This enables you to avoid using other methods to get the AOR data into Oracle Autonomous AI Lakehouse.

The downloaded AOR data security assignment file supports only the prebuilt security contexts. For custom contexts, you can utilize the AOR data available in the DW_ASG_RESPONSIBILITY_D table while configuring custom security. The format of the AOR file that you download is different from the data security assignment file that you can upload, hence you must copy the required columns from the AOR file to the security assignment file prior to uploading it as the AOR-related security assignment file. For example, the AOR file has additional columns like AOR TYPE, which is for your reference only.

When you run the data pipeline for the Area of Responsibility functional area after activating it, Oracle Fusion Data Intelligence loads the AOR-related data from the DW_ASG_RESPONSIBILITY_D view, transforms it, and uses this data to populate the AOR file. The data in the AOR-related downloadable file is formatted as per the current data security assignment .csv file and pertains to the prebuilt security contexts of business unit, country, legal entity, and organization.

After uploading the security assignments data to Oracle Autonomous AI Lakehouse, if the AOR assignment ends, then you must download the AOR and data security assignment files, compare mismatches between the two files, and take necessary actions of adding or removing contexts from the data security context and upload the correct data as and when required. The

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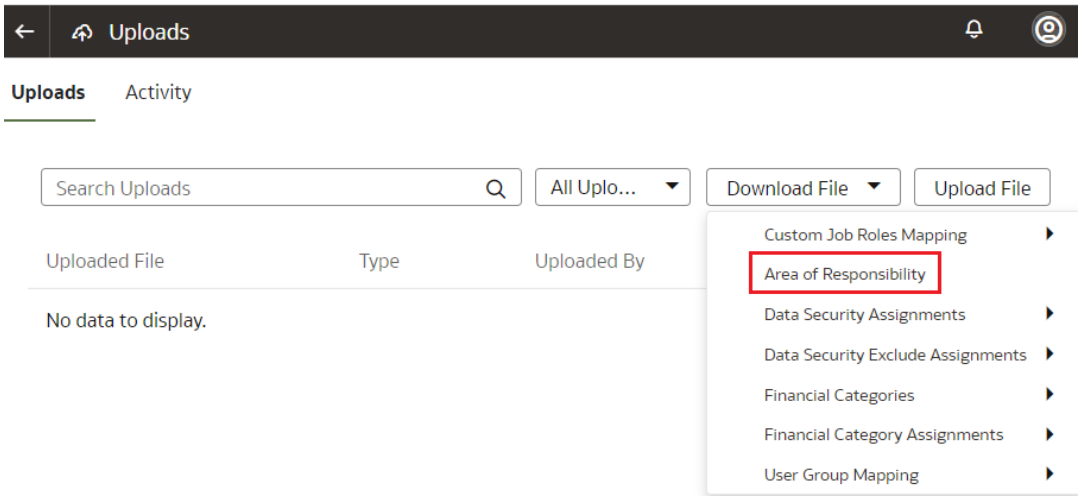
AOR file has only the current effective records; hence any end-dated record won't be available in this file.

> **Note**
>
> **Replace existing configuration settings** deletes existing data security assignments.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Uploads** under Application Administration.
3. On the Uploads page, click **Download File** and select **Area of Responsibility**.



4. Unzip the DataSecurityAssignmentAOR_csv.zip file you downloaded and edit the csv file as required.

   When you're done updating the file, save your changes.
5. On the Uploads page, click **Upload File** and select **Data Security Assignments** in **File Type**.

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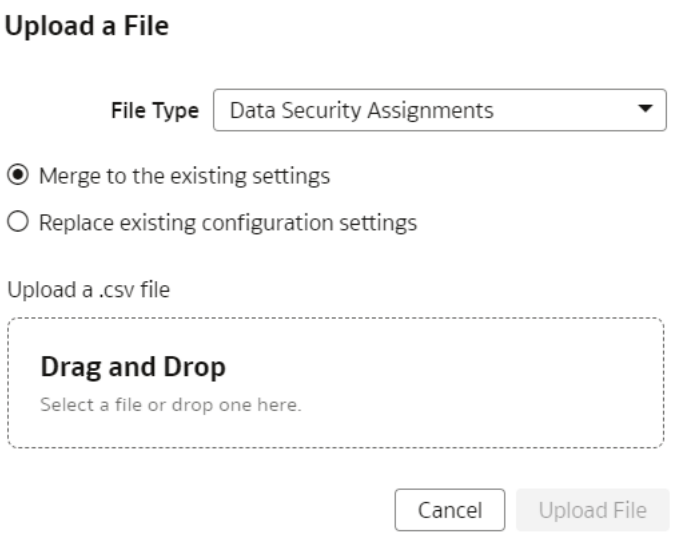

6. Select whether you want to **Merge to the existing settings** or **Replace existing configuration settings**.
7. Select the file you want to upload and click **Upload File**.

   You can review the status of the upload on the Uploads tab.
8. Use **Actions** next to the file name to perform actions on a specific upload file:
   - Click **Properties** to check the upload statistics.
   - Click **Download** to download the file you just uploaded in the event you want to upload the file again.
   - Click **Delete** if a file fails to process and you want to remove the file history.

Download and Upload Custom Job Roles Mappings

If you've custom job roles in Oracle Fusion Cloud Applications and want to use them as data roles in Oracle Fusion ERP Analytics, then you can map the job roles to the data roles, and upload the mappings.

Oracle Fusion Data Intelligence uses the mappings to apply the security assignments to the applicable Oracle Fusion Cloud Applications users in Oracle Fusion Data Intelligence during the automatic synchronization of the data security assignment configurations between Oracle Fusion Cloud Applications and Oracle Fusion Data Intelligence.

During the next data pipeline run, Oracle Fusion Data Intelligence applies this mappings.

> **Note**
>
> **Replace existing configuration settings** deletes the existing custom role mappings.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Uploads** under Application Administration.
3. On the Uploads page, click **Download File** and select **Custom Job Roles Mapping**, and then select the sample or current type of file that you want to download.

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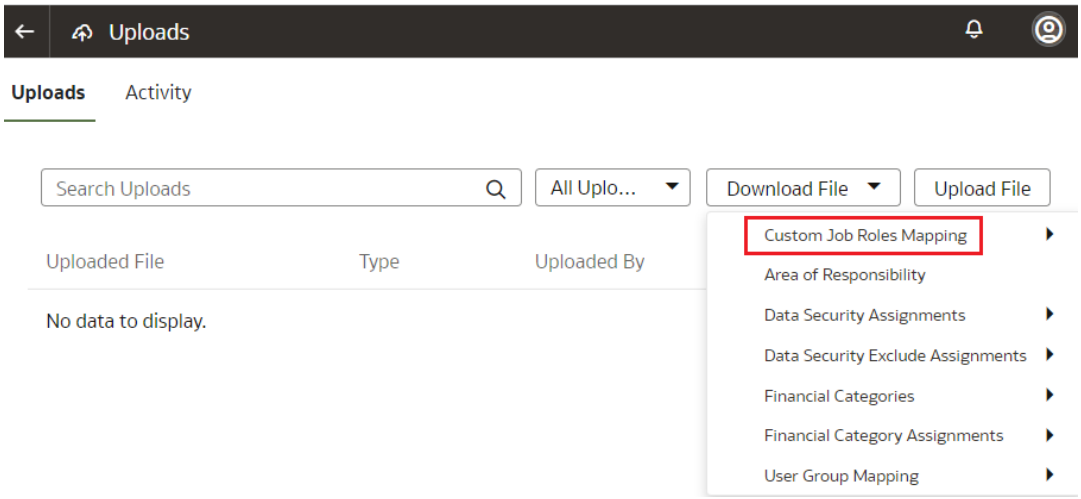
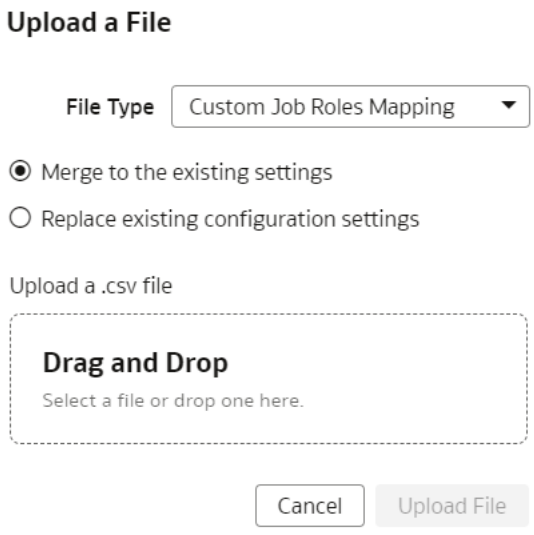


4. Unzip the CustomRoleMapping_csv file you downloaded and create the mapping by entering the Oracle Fusion Cloud Applications jobe role in the FA_JOB_ROLE column and a corresponding Oracle Fusion Data Intelligence data role in the FAW_ROLE column.

   When you're done updating the file, save your changes.

5. On the Uploads page, click **Upload File** and select **Custom Job Roles Mapping** in **File Type**.



6. Select whether you want to **Merge to the existing settings** or **Replace existing configuration settings**.
7. Select the file you want to upload and click **Upload File**.

   You can review the status of the upload on the Uploads tab.
8. Use **Actions** next to the file name to perform actions on a specific upload file:
   - Click **Properties** to check the upload statistics.
   - Click **Download** to download the file you just uploaded in the event you want to upload the file again.

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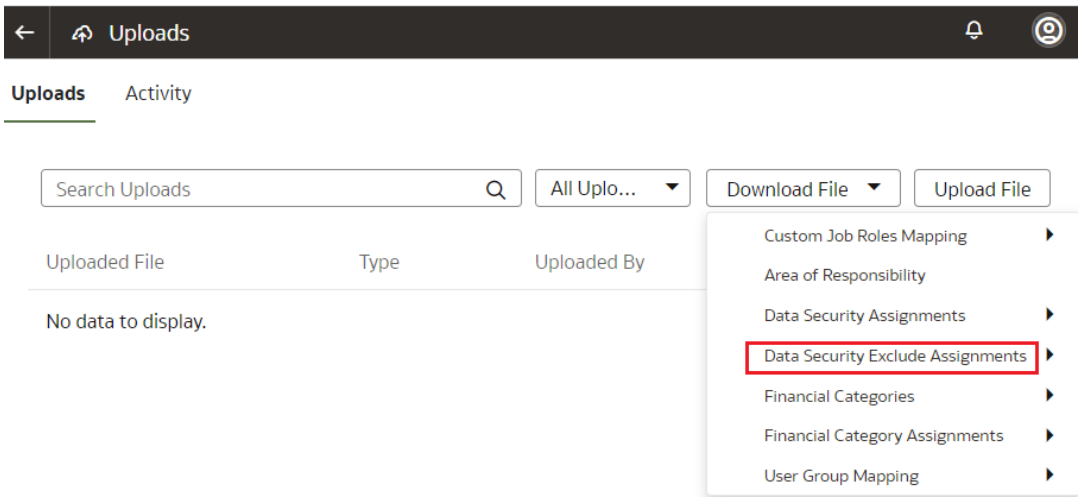
- Click **Delete** if a file fails to process and you want to remove the file history.

Download and Upload Data Security Exclusion Rules

If you want to automate the application of the security exclusion rules, then download the file to make the changes and upload it.

> **Note**
>
> **Replace existing configuration settings** deletes existing data security assignments.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Uploads** under Application Administration.
3. On the Uploads page, click **Download File** and select **Data Security Exclude Assignments**, and then select the sample or current type of file that you want to download.



4. Unzip the DataSecurityExclusionAssignments_csv.zip file you downloaded and edit the csv file as required.

   When you're done updating the file, save your changes.
5. On the Uploads page, click **Upload File** and select **Data Security Exclude Assignments** in **File Type**.

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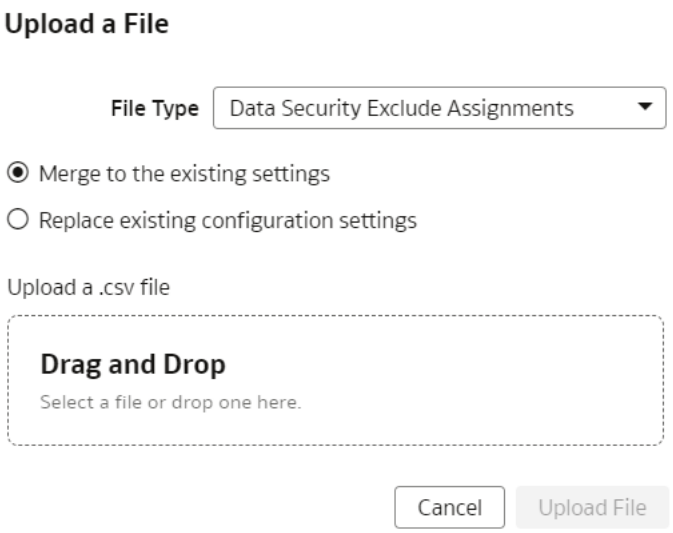

6. Select whether you want to **Merge to the existing settings** or **Replace existing configuration settings**.
7. Select the file you want to upload and click **Upload File**.

   You can review the status of the upload on the Uploads tab.
8. Use **Actions** next to the file name to perform actions on a specific upload file:
   - Click **Properties** to check the upload statistics.
   - Click **Download** to download the file you just uploaded in the event you want to upload the file again.
   - Click **Delete** if a file fails to process and you want to remove the file history.

Set Up Custom Security

You can set up custom security to meet your business requirements.

Setting up custom security involves:

- Creation of job-specific custom groups. As a security administrator, you can perform user-group management if you've the User Administrator role in Oracle Identity Cloud Service. See Managing Oracle Identity Cloud Service Users and Groups in the Oracle Cloud Infrastructure Console.
- Creation of custom duty and data roles. See Create an Application Role.
- Mapping of custom application roles to either the predefined or custom job-specific groups. See Add Application Roles to a Group and Assign Groups to Application Roles.
- Configure the custom application roles. See Custom Security in Fusion Data Intelligence. Ensure that you're signed into Cloud Customer Connect prior to viewing this document.

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7

Customize Oracle Fusion Data Intelligence

You can customize the semantic model to extend it for your business requirements.

As a user with any Oracle Fusion Data Intelligence administrator role, you can customize your semantic model in the development instance or test instance, and add security configurations to secure the subject areas and data with prebuilt and custom duty and data type of application roles. As a service administrator or modeler administrator, you can publish semantic models and make them available in Workbooks. Customization enables you to make the data that you moved into the analytics warehouse more useful for reporting. See Oracle Fusion Data Intelligence Administrator Permissions.

In the production environment, direct modifications to the Oracle Fusion Data Intelligence semantic model, including security configurations, aren't permitted. You can modify the Oracle Fusion Data Intelligence semantic model in the development instance or test instance, and then migrate to the production environment using bundles. See Move Your Customizations to Another Environment.

Topics:

- About Semantic Model Customization
- Recommendations and Tips to Extend the Semantic Model
- Extend the Semantic Model Using the Sandbox Framework
- Extend the Semantic Model Using the Branch Framework
- Add Security Configurations
- View Activity History of Semantic Model Extensions
- Move Your Customizations to Another Environment
- Merge Your External Applications
- Manage Frequently Refreshed Data in the Workbooks

About Semantic Model Customization

You can customize the semantic model to extend it for your business requirements. You extend the semantic model to make the data that you moved into the warehouse more useful for reporting.

Before customizing the semantic model, you must create a data pipeline for the functional area. See Create a Data Pipeline for a Functional Area.

Oracle Fusion Data Intelligence currently provides these methods for extending the semantic model:

- Extend the Semantic Model Using the Sandbox Framework
- Extend the Semantic Model Using the Branch Framework
- Merge Your External Applications

Migrate to the Sandbox Framework

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If your Oracle Fusion Data Intelligence instance has the semantic model extensions Branch framework, then you must migrate to the semantic model extensions Sandbox framework because the Branch framework is planned to be deprecated in a future release. See Migrate to the Sandbox Framework for Semantic Model Extensions.

If your production and lower environments such as development and test environments are on different Semantic Model Extensions frameworks; for example, production is on Sandbox and development or test is still on Branch, you have two options:

- Recommended: Migrate all instances to the Sandbox framework.
- If you have a business case that prevents migration to the Sandbox framework, log a support ticket to have the instance on the Sandbox downgraded to Branch.

Continuing to use the Branch framework presents several critical challenges:

- The Branch framework no longer receives updates. So, no new features available for the Branch framework.
- Limited time to adequately prepare and migrate from the Branch framework to the recommended and enhanced Sandbox framework.
- Limited capabilities to validate the Branch framework and generate reports.
- No access to the External Application objects from the Branch framework.

Benefits of the Sandbox Framework

You should migrate to the Sandbox framework to take advantage of the new capabilities and features, including:

- Model centric/graphical view:
  - Enhanced user experience.
  - Related steps are grouped together making it easier to complete a fully consistent unit of work.
  - Has the concept of a sandbox that can contain fully formed dimensional models or “stars”. All objects within a star are related.
  - Complete graphical view of each star that shows the ready-to-use and custom objects.
  - All customizations done to an object are visible together. You see the result of all operations at any time.
- Avoid development delays:
  - You can manually apply system extensions if you want to run the system steps manually instead of running automatically based on the configurations such as data augmentations, applications, and data applications (for example, Descriptive Flex Fields, Configurable Account Analysis, Fusion Accounting Hub, and Supply Chain Planning Application). See Set Up the Global Report Parameters and Apply System Extensions.
- Improved validation and reporting:
  - You can validate your sandbox to proactively identify all potential errors before you apply changes. See Validate Sandbox and View Validation Report.
  - You can generate and download a CSV report of the semantic model data lineage where it exports the customizations for a given sandbox. See Generate and Download the Sandbox Report.
- Configurable deployment features:

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  - You can migrate and publish customized sandboxes to other instances. See Deploy a Bundle.
  - When you're deploying the semantic extensions bundle or the composite bundle, you can either merge the sandbox content and security in the target environment or replace it. See Create a Bundle and Deploy a Bundle.
- Leverage advanced functionality:
  - You can use these customization options to expand subject areas beyond the previous limitation of only being available in the custom subject areas. See Manage Subject Areas.
    * Reordering, renaming, and removing columns
    * Adding sub-folders to custom dimensions available in the prebuilt subject areas
  - You can define a specific column to control the sorting order of a logical column while adding and extending dimensions as a part of extending the semantic model using the Sandbox framework. See Add a Dimension and Extend a Dimension.

Choose the Right Method to Extend Your Semantic Model

As an organization, selecting the most suitable method for extending your semantic model is crucial for success.

You should use the Sandbox framework when you:

- Manage a small number of semantic model customizations.
- Have a small number of semantic model developers.
- Your developers prefer developing in a user-friendly graphical interface.

You should use External Applications when you:

- Need to merge semantic models from Oracle Analytics Cloud (OAC), Oracle Analytics Server (OAS), or Oracle Business Intelligence Enterprise Edition (OBIEE).
- Manage a large number of semantic model customizations.
- Require multiple developers to work concurrently on the semantic model.
- Have a development team that is highly technical or familiar with advanced tools.

Advantages and Limitations of External Applications

Advantages of External Applications

Leveraging external applications and tools for Semantic Model development rather than relying solely on the Sandboxes framework offers several key advantages:

- Accelerated Development: External Applications can significantly reduce overall development time, allowing for faster iteration and deployment of customizations.
- Efficient Quality Assurance: Consistency checks and data validations run more quickly, helping to ensure the quality and reliability of changes.
- Familiar Development Environment: Users already experienced with Oracle Analytics tools, such as the desktop-based Administration Tool or Oracle Analytics Cloud Semantic Modeler, will find the development process familiar and intuitive.
- Comprehensive Functionality: Most features of the Oracle BI Administration tool are accessible, supporting advanced modeling and configuration tasks.
- Source Control Integration: Using external version control systems (e.g., Git) enables collaborative development, detailed change tracking, and parallel feature work, offering a

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more flexible, enterprise-grade source management approach compared to the Sandbox framework.

- Model Reuse and Merging: You can easily reuse and merge semantic models across platforms such as Oracle Analytics Cloud (OAC), Oracle Analytics Server (OAS), and Oracle Business Intelligence Enterprise Edition (OBIEE) with minimal reconfiguration.
- These two new features enable far more use cases for External Applications than previously possible:
  - With the application of the 25.R4.P1 content patch, the Semantic Model Template expands to encompass all dimensions, enabling more extensive customizations. To utilize this feature with your external applications, apply patch 25.R4.P1, download your most recently imported Semantic Model from the External Application tab, then apply your future changes to this newly downloaded semantic model. See Download the Imported Semantic Model.
  - The External Applications Merge capability enables you to import your custom dimensions into the external application and then link them with the existing prebuilt facts in the sandbox.

Limitations of External Applications

- The Sandbox framework is still required for:
  - Facilitating logical joins between custom dimensions and prebuilt fact tables within the semantic model.
  - Managing security for prebuilt objects.

Semantic Model Components

The semantic model consists of these components:

- Oracle Content: This is the base model provided by Oracle. Your customizations are layered on this.
- External Applications: You can create extensions with objects created using the merged external application.
- System Extensions: Your descriptive flexfield and data augmentation changes are available in this component. See View Activity History of Semantic Model Extensions to know about the scenarios in which Oracle Fusion Data Intelligence applies the system extensions.
- User Extensions: Your extensions are available in this component.
- Security Configurations: You can secure the objects of all the other components against the application roles in this component.

Keep your Customization Error-Free

Oracle Fusion Data Intelligence periodically evaluates the customizations and sends notifications to the users with Modeler Administrator and Modeler privileges to correct errors and warnings in the extensions as soon as possible to prevent errors during patching.

See Validate Model and Resolve Common Errors in Semantic Model Extensions.

If these errors aren't fixed and a patch is initiated (or a mandatory patch is auto-applied), then patching may encounter issues. In that case, customizations that haven't been merged to the main branch are removed and the factory semantic model is upgraded. You must reapply the applicable customizations after the patching is complete.

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Recommendations and Tips to Extend the Semantic Model

Before extending your semantic model, review the recommendations and tips to ensure that your extensions work as expected.

Semantic Model Extensions Framework

Branch Framework

If you're still on the Semantic Model Branch framework, now is the time to migrate to the Sandbox framework. See Migrate to the Sandbox Framework for Semantic Model Extensions.

Sandbox Framework

Only retain the *in use* sandboxes. Delete the sandboxes that you used for testing and aren't in use any longer. Maintaining additional unused sandboxes degrades performance of the system.

Database Objects

Database Naming Standards for Autonomous AI Lakehouse Objects

- Prefix a custom object with `X_ZZZ_` where `ZZZ` is an abbreviation of your organization.
- Suffix different objects as:
  - _A = Aggregate
  - _D = Dimension
  - _DH = Dimension Hierarchy
  - _F = Fact
  - _H = Helper
  - _M = Map Dimension
  - _MD = Mini Dimension
  - _V = Views
  - _MV = Materialized View
  - _DS = Data Augmentation Dataset
  - _EXT = Data Augmentation Extension
- Don't create any custom database objects starting with "DW" because this may result in conflicts with the prebuilt object names. Custom database objects starting with "DW" may cause inconsistent behavior in the in the Semantic Model Extensions wizard.
- Don't use these system-reserved suffixes for the custom schema names: DW, OAC, INFRA, SECURITY, USER, or CORE.
  If you use one of these system-reserved suffixes for the custom schema names, you risk granting unintended privileges to your custom schema during pipeline processing.

Data Augmentation Datasets and Flexfields

- Ensure that the changes in source are addressed in your Oracle Fusion Data Intelligence instance. For example, if a descriptive flexfield used in a custom subject area has been disabled in the source, then you must replace or remove the applicable descriptive flexfield in Oracle Fusion Data Intelligence or else the applicable semantic model extension fails.

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- You can reference synonyms from the data augmentation datasets in the semantic model extensions after the initial full load for the data augmentation has completed. Use the **Run Immediately** option in the data augmentation to execute the full load straightaway.

Extending

General

- When naming objects (dimensions, facts, and columns) remove all leading and trailing spaces. You can use underscores and spaces in names but avoid all other special characters.
- When adding custom attributes or defining keys used for joining, ensure that the display name is unique and doesn’t conflict with any of the prebuilt column names.

Extend Dimension

- *Important*: You must keep the extensions to a minimum and combine them to prevent unnecessary overhead and degraded performance. When extending a dimension (if the extension granularity is one to one [1:1] with the prebuilt dimension) combine multiple extensions for the same dimension in a single source (table/view/synonym) in Autonomous AI Lakehouse. It's preferable to have one extension with many columns, rather than have multiple extensions per column.
- *Important*: You'll receive a warning when you add multiple extensions to the same dimension. You must keep the extensions to a minimum.
- *Caution*: When extending a dimension, it's highly recommended to join with the base dimension key. If it isn't possible to join on the base dimension key, you can join to another base column with caution, validating data grain and cardinality. It's strongly not recommended to join on another extension column. The system processes the extensions with dependencies sequentially, lengthening the time taken to apply and publish the sandbox, and could have a negative impact on the query performance.
- When extending DEGEN Dimensions ("Details" folders), always maintain the same level of granularity by joining on the Primary key(s) of the fact with a one to one [1:1] relationship. Don't define many to many [M:M] joins because it may cause performance degradation and data duplication.
- Be cautious when extending dimensions that have one to many (1:M) relationships (such as multi-select), because:
  - They may result in data duplication due to the extended data being of a lower grain than the parent dimension.
  - Maximum extension index length may be exceeded.

  To avoid the constraint, name the table/view/synonym as short as feasible. For example, FDI_X_SZ_V (Size) and FDI_X_PR_V (Price).
- Before extending a logical object, validate that the associated presentation table is exposed in the subject area. Refer to the applicable semantic model lineage spreadsheets.
  - Fusion CX Analytics Data Lineage
  - Fusion ERP Analytics Data Lineage
  - Fusion HCM Analytics Data Lineage
  - Fusion SCM Analytics Data Lineage
- While extending a dimension, if the table that you select is an augmentation table, select it from the OAX$OAC schema instead of OAX_USER. The main schema for augmentation tables is OAX$OAC even though the augmentation tables are present in the OAX_USER as well.

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- Extended attribute column size can't exceed 256 characters.
- When extending dimensions, choose a join type based on your dimension type (degenerate or conformed) and the relationship between the base and extension tables. Your choice depends on whether you want to retain or discard the unmatched records.
  - Left Outer: Recommended for most extensions to preserve all rows from the base table, especially for 1:many relationships or when the extended table is incomplete. This avoids unintentionally dropping of base rows.
  - Inner: Best for a true 1:1 relationship when you only want records that exist in both tables and are comfortable excluding the non-matching rows. Not recommended when extending degenerate dimensions.
  - Right Outer: Infrequently used. Choose this when you need to preserve all rows from the extended table and only pull the matching rows from the base table.
  - Full Outer: Use with caution to retain all rows from both tables regardless of matches. Don't use Full Outer on degenerate dimensions because they can introduce data duplication and performance degradation.

Create Dimension

- When creating a custom dimension, you may deselect **Add hierarchy to Subject Area**. However, it's still necessary to define a Hierarchy Primary Key and Display Attribute. Click the Selected Data Elements Detail folder, then the Properties edit icon to define the Hierarchy Primary Key and Display Attribute.

Create Degenerate Dimensions

- Avoid adding non-degenerate dimension attributes to fact tables. Instead, select the degenerate flag for the attribute when defining the fact table definition. Non-flagged dimension attributes within fact tables will negatively impact your report structure, increase the risk of runtime errors, and complicate system maintenance.

Create Fact

- When adding a custom fact, always set the content levels for the custom dimensions that are joining to the custom fact.
- When joining facts to dimensions, ensure that the columns being joined are of compatible data types.

Create Hierarchy

- When adding a custom hierarchy, avoid aiming to display the grand total levels in visualizations because custom hierarchies are exposed only from the first level. The prebuilt hierarchies too don’t expose the total levels. The Grand Total level just gives the grand total amount; hence use it only when there is no join between a fact and dimension and the metric has to be set at a total level.
- When defining a hierarchy it's necessary to map all available data elements to a level or details.
- Before editing a hierarchy (such as add, remove, or change levels), first remove the hierarchy from the Subject Area, edit the hierarchy, and then add the hierarchy back to the Subject Area.
- The Sandbox framework currently doesn't support creating custom value-based hierarchies. It supports presetting and joining to prebuilt value-based hierarchies.

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Adding Columns

- Apply functions and aggregations directly to base columns. Avoid nesting derived columns to prevent unnecessary dependencies, processing overhead, delays, and potential calculation errors in the semantic model.
- Avoid adding columns that are already present in the existing Semantic Model; this creates redundant joins and increases processing overhead.
- When working with custom facts and dimensions, avoid using derived columns. Instead, perform the necessary calculations within the database layer, or define the expression directly on the object during its creation process.

Using Data Applications

- If you utilize a specialized data application such as Configurable Account Analysis, Fusion Accounting Hub, or Supply Chain Planning Application, you should implement all necessary customization exclusively within the application. Avoid creating duplicate configurations in the semantic model, as this introduces redundant dependencies and unnecessary processing overheads.

Deployment

- Migrations must flow in a single direction only. Choose one environment to be the master Development environment. After user acceptance testing, generate and deploy a Semantic Extensions bundle to migrate changes to Production and other environments.
- If the semantic model secures objects with newly configured application roles, groups, or users, ensure to import and deploy the Security bundle prior to importing and deploying the Semantic Model bundle.

Create a Custom Database Schema

Create a custom database schema in Oracle Autonomous AI Lakehouse associated with your Oracle Fusion Data Intelligence instance.

> **Note**
>
> When you define your custom schema, make sure the custom schema name remains consistent across all environments. Avoid including environment-specific tags such as "TEST," "DEV," or "PROD". Inconsistent custom schema naming will prevent the deployment of your semantic model to other instances that use a different schema name.

While importing the objects, create a physical schema for the custom schema and import the objects into this physical schema. See Manage User Roles and Privileges on Autonomous Database and Create Users on Autonomous Database to create a custom database schema.

1. Connect to the Autonomous AI Lakehouse corresponding to your Oracle Fusion Data Intelligence instance.

   See Connect to an Autonomous AI Lakehouse.

2. Create a custom schema to store the customization data.

   Syntax: `create user <custom_schema-name> identified by <custom_schema-password>;`

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For example, `create user example_schema identified by abcDEF123654;`

> **Note**
>
> Don't use any of these system-reserved terms as postfix in the custom schema names: DW, OAC, INFRA, SECURITY, USER, or CORE.

Migrate or Create Database Objects

Migrate or create database objects such as tables, views, and synonyms in the custom schema that you created.

Import or migrate your external warehouse data to the Oracle Autonomous AI Lakehouse associated with Oracle Fusion Data Intelligence using the Oracle database utilities or any ETL tool.

- Create one or more tables in the custom schema that you created.

  Syntax: `CREATE TABLE <custom_schema-name>.<custom_extent_table_name> (<parameters>));`

  Example: `CREATE TABLE example_schema.ABC_EXTN ("DATE" DATE, "CATEGORY" VARCHAR2(1024 BYTE) , "MANAGER" VARCHAR2(1024 BYTE) );`

Grant Semantic Model Access

Ensure that the OAX$OAC user can access each of the database objects that you plan to merge.

1. Grant access to the OAX$OAC user to each object using this SQL:

   ```
   GRANT SELECT ON "CUSTOM_SCHEMA"."MY_TABLE" TO "OAX$OAC";
   ```

2. If you plan to merge views that reference multiple schemas, use the WITH GRANT OPTION as follows:

   ```
   GRANT SELECT ON "CUSTOM_SCHEMA"."MY_VIEW" TO "OAX$OAC" WITH GRANT
            OPTION;
   ```

3. Optional: Grant view access to OAX_USER using this SQL:

   ```
   GRANT SELECT ON "CUSTOM_SCHEMA"."MY_TABLE" TO "OAX_USER";
   ```

About the Semantic Model Extensions Banner

Use the banner on the Semantic Model Extensions page to understand the health of your semantic model.

The banner provides details of the errors in your semantic model. The initial banner provides a Learn More option to understand how to validate the semantic model. You can use the Validate Model option to refresh the error list on the banner and examine the validation messages in the Activity tab on the Semantic Model Extensions page. You can also click View Errors to see the detected issues and then download the errors by exporting them to Excel for easier analysis.

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If you close the initial banner without correcting errors, a second, more urgent warning will appear that states “Leaving errors uncorrected will cause semantic model upgrades to fail. Your pipeline may be disabled, release updates halted, update offerings blocked, and usability and support may be lost as a result. Please view the errors and make corrections as soon as possible or click Acknowledge to accept the impacts described.” When you acknowledge the warning, the system records the action in the Activity tab.

The Administration Console displays a banner regarding the health of your semantic model the first time you access the Console or when you refresh your browser. However, on the Semantic Model Extensions page, the banner persists until you resolve or all errors or acknowledge the warning.

Extend the Semantic Model Using the Sandbox Framework

The Sandbox framework enhances the development process with its intuitive graphical modeling capabilities. It enhances the user experience by visually organizing related elements within each logical star and subject area. The logical task organization and minimal steps make customization easy and efficient.

The Sandbox framework streamlines development by allowing changes to be made without requiring chronological order, eliminating the need to wait for compilation until all modifications are complete. This framework promotes greater consistency in the semantic model, supporting adherence to best practices.

Multiple users can work concurrently in separate or the same customization sandboxes. Limit the customizations within each sandbox to a single logical star and corresponding subject area. To ensure your work incorporates the latest changes, compare the update date of your sandbox with the main sandbox. If your sandbox was updated before the main sandbox, review common artifacts that may have been amended and published prior to your changes.

If common artifacts have been modified, create a customization sandbox, transfer your changes, and then delete the previous sandbox to avoid conflicts before merging to the main sandbox. Publish only one sandbox at a time. Publishing a sandbox ensures that unchanged components remain, while any modifications within the sandbox overwrite their corresponding versions in the main published sandbox. Only retain the in-use sandboxes. Delete the sandboxes that you used for testing and aren't in use any longer. Maintaining additional unused sandboxes degrades performance of the system.

A typical workflow to create extensions involves these:

1. Understand the common use cases of extending the Semantic Model using the Sandbox Framework. See Use Cases: Extend the Semantic Model Using the Sandbox Framework.
2. Optionally, apply system extensions if you had enabled to delay system extensions, but now want to apply the system extensions. See Apply System Extensions.
3. Manage Your Sandbox. See Manage Your Sandbox.
4. Prepare Your Sandbox. See Prepare Your Sandbox.
5. Add Security Configurations. See Add Security Configurations.
6. Prepare Your Model. See Prepare Your Model.
7. Integrate Your Sandbox. See Integrate Your Sandbox.
8. If required, generate and download the sandbox report. See Generate and Download the Sandbox Report.
9. In Oracle Analytics Cloud associated with your Oracle Fusion Data Intelligence instance, verify if the changes are reflected in the subject area.

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10. Move your customizations to another environment. See Move Your Customizations to Another Environment.

Topics:

- Apply System Extensions
- Manage Your Sandbox
- Prepare Your Sandbox
- Prepare Your Model
- Integrate Your Sandbox
- Use Cases: Extend the Semantic Model Using the Sandbox Framework
- Generate and Download the Sandbox Report

Apply System Extensions

If you have enabled **Manual Execution of Apply System Extensions** in the Reporting Configuration page, you must manually run the Apply System Extensions process to make the newly created objects available for reference in the semantic model.

To enable **Manual Execution of Apply System Extensions** in the Reporting Configuration page, see Set Up the Global Report Parameters.

Running the Apply System Extensions process ensures that the semantic model is refreshed and updated to include the new objects such as data augmentations, applications, and data applications (for example, Descriptive Flex Fields, Configurable Account Analysis, Fusion Accounting Hub, and Supply Chain Planning Application).

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **System Extensions**.
4. From the Actions Menu (…) next to the Status column, select **Apply System Extensions**.
5. In the Activity tab, review the status of the Apply System Extensions process.

Manage Your Sandbox

In your sandbox, you can manage logical star, organize the entities and attributes available for reporting in subject areas, and manage the custom session variables that you can use in your semantic model.

Topics:

- Create a Sandbox
- Manage a Logical Star
- Manage Subject Areas
- Manage Variables

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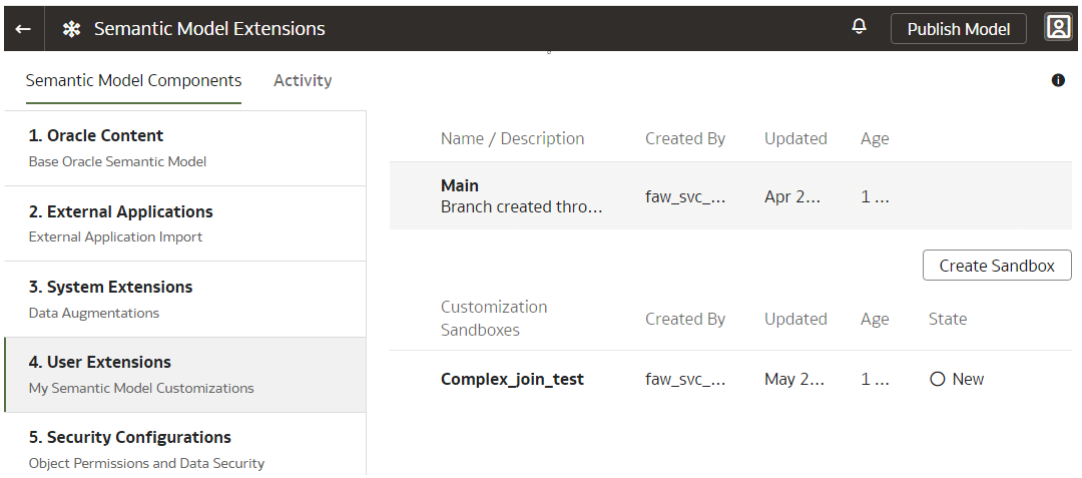
Create a Sandbox

To begin customizing your semantic model, create a sandbox.

You can add customizations in the non-production environments such as development or test. After your customizations are ready, use the Bundles functionality to move the desired objects to other environments. See Bundle Your Application Artifacts.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **User Extensions**.
4. In the User Extensions region, for Customization Sandboxes, click **Create Sandbox** to create your customizations.



5. In Create a Sandbox, enter a **Name** having up to 80 characters or less, provide a **Description**, and click **Done**.

   The sandbox is in Preparing state while being generated. Wait until the sandbox is ready to perform additional actions.
6. On the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view **Actions**, click **Manage Sandbox**, and then click **View Sandbox**.
7. On the selected sandbox Details page, click **Perform Action**, and select as applicable.

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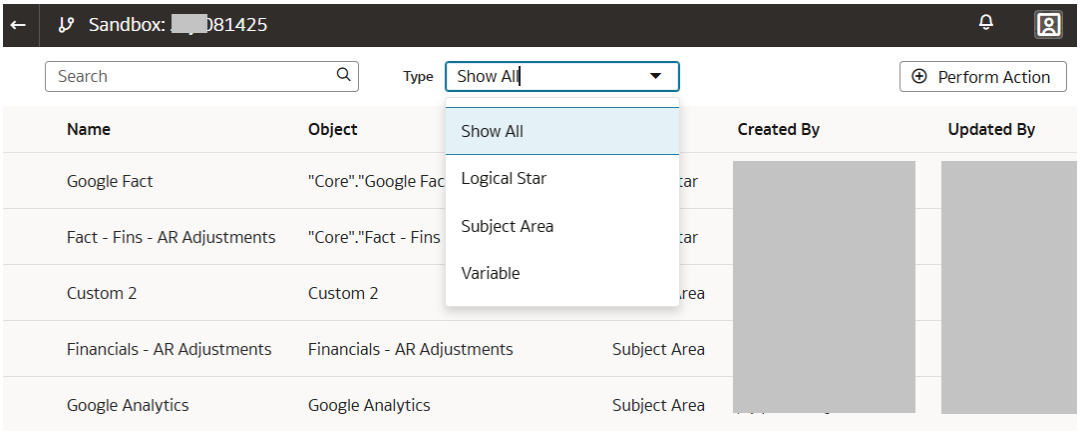

See:

- Manage Subject Areas
- Manage a Logical Star
- Manage Variables

8. Validate the sandbox. See Validate Sandbox and View Validation Report.

Manage a Logical Star

A logical star is the basic complete unit of a dimensional model with a fact at the center and joined to the surrounding dimensions. Manage a logical star by adding and updating objects, attributes, joins, and calculations.

Facts contain elements that you can measure such as count, aggregate, and perform statistical operations on; while dimensions contain elements that provide context to those measurements. Each logical star has one fact and one or more dimensions. You can manage your own custom star or you can manage a prebuilt star by adding dimensions. You do these operations to extend the model to make use of custom data objects or elements that you've added to the warehouse or to create calculations or joins to address your reporting needs.

You can use the standard prebuilt tables in the semantic model extensions without creating custom SQL views and issuing grant statements. This simplifies the process of working with the prebuilt tables for frequent data refresh and aliasing dimension tables.

Within the Sandbox you can zoom and focus on specific areas of the logical star using the graphic tab on the logical star page. You can rearrange the objects in the logical star using the graphic tab on the logical star page. Additionally, you can view all the joins in a tabular format using the tabular tab on the logical star page.

Create a Logical Star

Create a custom logical star to use custom data objects or elements that you have added to the warehouse or to create calculations or joins to address your reporting needs.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **User Extensions**.

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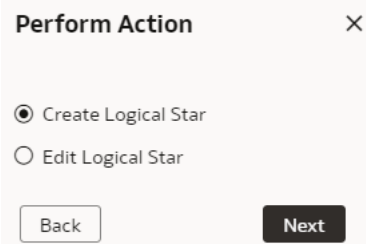
4. On the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view **Actions**, click **Manage Sandbox**, and then click **View Sandbox**.
5. On the selected sandbox Details page, click **Perform Action**, and then select **Manage Logical Star**.
6. In Perform Action, select **Create Logical Star**, and then click **Next**.



You're now ready to add facts, dimensions, hierarchy, and additional columns.

Manage Facts

Add elements that you can measure such as count and aggregate, and perform statistical operations to your custom logical star using the Add Fact option.

While selecting an aggregation rule for each fact column to set the aggregation behavior, use a time-balanced aggregation when the added measure mustn't be "aggregated" by default across a time dimension. Oracle Fusion Data Intelligence supports non-aggregation types like "Last" or "First" in place of the "SUM" aggregation type when required. Use a level-based aggregation when the underlying measure must always be calculated to a specific level of a predefined dimensional hierarchy. For example, in a product hierarchy that has the Product Total, Product Category, Product Sub-Category, and Product Details levels, you add a new measure called "Revenue" and need this "Product Category Revenue" measure to be aggregated to Product Category, then you must use the level-based aggregation and choose the right level of the Product Dimension. This setting enables Oracle Fusion Data Intelligence to always aggregate and show the value of the measure at the Product Category level. This is useful when you need to calculate Product Revenue as a % of Category Revenue. Refer to the *Create Fact* section in Recommendations and Tips to Extend the Semantic Model.

1. Navigate to the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view **Actions**, click **Manage Sandbox**, and then click **View Sandbox**.
2. On the selected sandbox Details page, click **Perform Action**, select **Manage Logical Star**, and then select **Create Logical Star**.
3. On the Logical Star page, click **Add Fact**, and in step 1 of the Add a Fact wizard, select the schema, and then select a view or table or synonym as the object. For example, FCT_CALC_Extensions.

   You see the fact table for the selected object.
4. In the details of the fact table for the selected source table, click the **Select Fact** and **Use for Key** checkboxes for the source columns that you want to add to your new fact table in the target subject area.
5. Optional: In the details of the fact table for the selected source table, under **Select Degen Attribute**, click the checkbox for the attributes for which you need the degenerate dimension to be created.

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6. If any of the selected attributes have been removed or modified in the source table since the last refresh, then you see such columns highlighted and a message asking whether you want to update the table. Select **OK** in the message to reload the source columns. If you want to review the changes to the source columns, then click **Cancel** in the message, and later click **Refresh** to reload the source columns.

   If any of the attributes that you haven't selected have been removed or modified in the source table, then you see the refreshed list of source columns. If any of the custom columns fail validation during the refresh, then you see a message asking you to resolve the cause of failure and revalidate.

7. Optional: Click Create Column to add a new column to your new fact table in the target subject area using these instructions:

   a. In Create Column, enter a display name.

   b. Under **Data Elements**, search for a data element from the physical table of the selected dimension table.

   c. From the search results, double-click the data element to place it in the text pane.

   d. Under **Functions**, search for a function to construct a column using expressions. For example, search for functions like "substring" or "concatenate" to construct new expression-based columns. From the search results, double-click the applicable result to add it to the central text pane.

   e. Click **Validate**, and then click **Save**.

8. Select the aggregation rule for each fact column to set the aggregation behavior. You can set the time-balanced aggregation rule for a time dimension and hierarchy level-based aggregation rule for a dimension using these steps:

   a. For a fact column, click the **Time-Balanced Aggregation** icon.

   b. In the Time-Balanced Aggregation dialog, click **Add Time Dimension**, adjust the aggregation rule, and then click **OK**.

   c. For a fact column, click the **Hierarchy Level-Based Aggregation** icon, select the dimension and level. Click **Add Dimension** to add more dimensions. Click **OK**.

Manage Dimensions

You can create a custom dimension, join it to the prebuilt or custom facts, and add the custom dimension to any subject area to meet your business requirements.

Within the logical star, you can filter and focus on dimensions that are custom by selecting **Show Customizations Only**. Additionally, you can search and filter on the objects within the logical star. You can create a dimension or add an existing dimension in the logical star. Refer to the *Create Dimensions* section in Recommendations and Tips to Extend the Semantic Model.

1. Navigate to the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view **Actions**, click **Manage Sandbox**, and then click **View Sandbox**.

2. On the selected sandbox Details page, click **Perform Action**, select **Manage Logical Star**, select **Edit Logical Star**, select the applicable fact and then select **Next**.

3. On the Logical Star – Fact page, click **Add Dimension**, and select either **Create New Dimension** or **Add Existing Dimension**.

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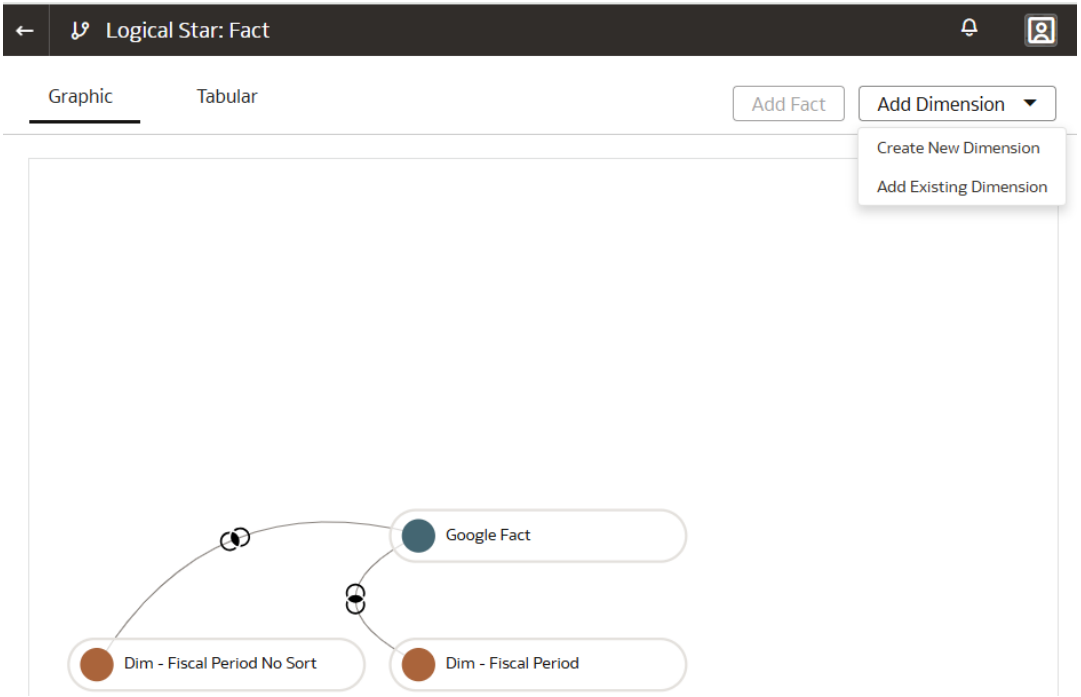

Create a Dimension

Create and add dimensions to facts to complete a new star or to update existing stars. You can create joins from your custom dimension to a prebuilt fact.

You can define a sort order column to control the sorting order of a logical column, especially when the desired sort order doesn't match the natural sort order of the data. This is useful for situations like sorting months in a specific chronological order or sorting descriptive columns based on a code or hierarchy.

1. In step 1 of the Add a Dimension wizard, select the schema, and then select the dimension table in **Object**. For example, COST_CENTER_VIEW1, and add a name in **Dimension Name**.

> **Note**
>
> If you don’t see the schema or table, then ensure that you have granted select permission to the OAX$OAC schema in the autonomous data warehouse. For example, `grant select on <schema>.<table>` to OAX$OAC. See Load Customization Data to the Autonomous Data Warehouse.

   You see the attributes available in the selected dimension table. You can use the **Search** and **Filter** fields to limit the attributes displayed for the dimension table.

2. Select the attributes that you want to use from the dimension table and indicate an attribute to be used as the key for joining with a fact table in the target subject area.

3. If any of the selected attributes have been removed or modified in the source table since the last refresh, then you see such columns highlighted and a message asking whether you want to update the table. Select **OK** in the message to reload the source columns. If you want to review the changes to the source columns, then click **Cancel** in the message, and later click **Refresh** to reload the source columns.

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If any of the attributes that you haven't selected have been removed or modified in the source table, then you see the refreshed list of source columns. If any of the custom columns fail validation during the refresh, then you see a message asking you to resolve the cause of failure and revalidate.

4. Optional: Click **Create Column** to add another column to your dimension table in the target subject area using these instructions:
    a. In Create Column, enter a display name.
    b. Under **Data Elements**, search for a data element from the physical table of the selected dimension table.
    c. From the search results, double-click the data element to place it in the text pane.
    d. Under **Functions**, search for a function to construct a column using expressions. For example, search for functions like "substring" or "concatenate" to construct new expression-based columns. From the search results, double-click the applicable result to add it to the central text pane.
    e. Click **Validate**, and then click **Save**.
5. In step 2 of the wizard, assemble the product hierarchy using the attributes from this dimension and click **Next**. See Add Hierarchy.
6. In step 3 of the wizard, select applicable values in **Sort Order Column** for the columns that you selected to expose or use as a key.

    Ensure that the sort order column is within the same hierarchical level as the display column. For columns not requiring a custom sort, leave the sort order column in the default **Select** state.
7. On the Logical Star: Fact page, in the Graphic tab, click on the prebuilt fact and drag drop on the custom dimension that you created to open the Join dialog.
8. In the Join dialog, select the join type, and then select the dimension keys to join them with the extended dimension keys. If you want to provide expressions as join conditions, then click **Complex Join** and in Create Joins, select applicable **Content Level**, click **Add Joins**, select the target and source logical tables, enter the join condition as an expression, and then click **OK**.
9. Click **Finish**.

Add an Existing Dimension

If you want to provide additional context to facts, you can create your own dimension and join to an existing available column in a fact.

For example, if you want to report on invoice categories, create a dimension called "Invoice Category" and join to a column in the fact that has that information. It's important to remember that one dimension record must join to one or more fact records; it should be a 1-many join. You shouldn't have many to one or many to many joins between a dimension and fact table.

1. On the Logical Star – Fact page, click **Add Dimension**, and select **Add Existing Dimension**.
2. In Add Table, select the dimensions to add.

Manage Extensions

After adding the extension, you can extend the dimensions, add hierarchy, and add columns to ensure that your custom logical star meets your business requirements..

Refer to the *Extending* section in Recommendations and Tips to Extend the Semantic Model.

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On the Logical Star – Fact page, right-click an extension, click **Manage Extension**, and select any of these:

- Extend Dim
- Add Hierarchy
- Add Column

Extend Dimension

Extend prebuilt dimensions with additional attributes from another data source. For example, you can create a category column that isn't available in the prebuilt dimensions.

You can define a sort order column to control the sorting order of a logical column, especially when the desired sort order doesn't match the natural sort order of the data. This is useful for situations like sorting months in a specific chronological order or sorting descriptive columns based on a code or hierarchy. Refer to *Extend Dimension* in the *Extending* section in Recommendations and Tips to Extend the Semantic Model.

1. In step 1 of the Extend a Dimension wizard, select a schema and table from the database.
2. Select the columns that you want to expose or use as a key for creating the join, or sort by.
3. Click in the **Display Name** table field to enter a new name for the column or to edit an existing one and then click **Enter** to accept or click **Esc** to cancel.
4. In **Sort Order Column**, select applicable values in **Sort Order Column** for the columns that you selected to expose or use as a key.

   Ensure that the sort order column is within the same hierarchical level as the display column. For columns not requiring a custom sort, leave the sort order column in the default **Select** state.
5. If any of the selected attributes have been removed or modified in the source table since the last refresh, then you see such columns highlighted and a message asking whether you want to update the table. Select **OK** in the message to reload the source columns. If you want to review the changes to the source columns, then click **Cancel** in the message, and later click **Refresh** to reload the source columns.

   If any of the attributes that you haven’t selected have been removed or modified in the source table, then you see the refreshed list of source columns. If any of the custom columns fail validation during the refresh, then you see a message asking you to resolve the cause of failure and revalidate.
6. Optional: Click **Create Column** to add another column to your dimension table in the target subject area using these instructions:
   a. In Create Column, enter a display name.
   b. Under **Data Elements**, search for a data element from the physical table of the selected dimension table.
   c. From the search results, double-click the data element to place it in the text pane.
   d. Under **Functions**, search for a function to construct a column using expressions. For example, search for functions like "substring" or "concatenate" to construct new expression-based columns. From the search results, double-click the applicable result to add it to the central text pane.
   e. Click **Validate**, and then click **Save**.
7. Click **Next**.
8. In step 2 of the wizard, select the join type, and then select the dimension keys to join them with the extended dimension keys. If you want to provide expressions as join conditions,

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then click **Complex Join** and in Create Joins, click **Add Joins**, select the target and source logical tables, enter the join condition as an expression, and click **OK**.

9. Click **Finish**.

Add Hierarchy

Assemble the product hierarchy using the attributes from a dimension table. Hierarchies enable you to define aggregations and drill downs. This makes it easier to report on summary level and drill into details easily and within the same visualization.

Refer to the *Create Hierarchy* section in Recommendations and Tips to Extend the Semantic Model.

1. In step 1 of the Add a Hierarchy wizard, name your hierarchy in **Hierarchy Name**.
2. Select, drag, and drop available data elements into the Selected Data elements pane to design a hierarchy for the dimension.
3. In the Selected Data Elements pane, click a level to update its primary key and set its display attribute in the Properties pane.

   You can add multiple levels in your hierarchy by right-clicking at a level and selecting Add Child or Add ‘n’ Child Levels. For example, your Region Hierarchy can have Region Total at Level 1, Region at Level 2, Country at Level 3, State at Level 4, and City at Level 5.
4. Ensure **Add hierarchy to Subject Area** is selected and click **Finish**.

Add Columns

You can create columns to provide additional data elements or calculations. You can add derived and physical columns. While adding physical columns, you can filter available columns and tables to narrow down your selection.

1. On the Add Column page, select **Add Derived Column**, and complete these steps:
   a. In Create Column, enter a display name.
   b. Under **Data Elements**, search for a data element from the physical table of the selected dimension table.
   c. From the search results, double-click the data element to place it in the text pane.
   d. Under **Functions**, search for a function to construct a column using expressions. For example, search for functions like "substring" or "concatenate" to construct new expression-based columns. From the search results, double-click the applicable result to add it to the central text pane.
   e. Click **Validate**, and then click **Save**.
2. On the Add Column page, select **Add Physical Column**, and complete these steps:
   a. In Select Physical Column, select the columns and click **OK**.
   b. On the Add Columns page, for the physical columns, select the **Display** checkbox to expose the columns, and click the **Logical Level** icon to set the required level.
   c. In Set Logical Level, select the dimension, select the level of the dimension hierarchy, and then click **OK**.

Edit a Logical Star

Edit your logical star to modify any of the extensions that you had previously added or to add further extensions.

1. Navigate the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view **Actions**, click **Manage Sandbox**, and then click **View Sandbox**.

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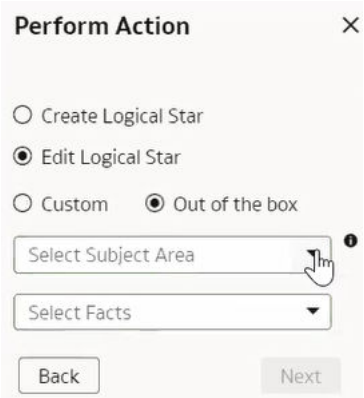
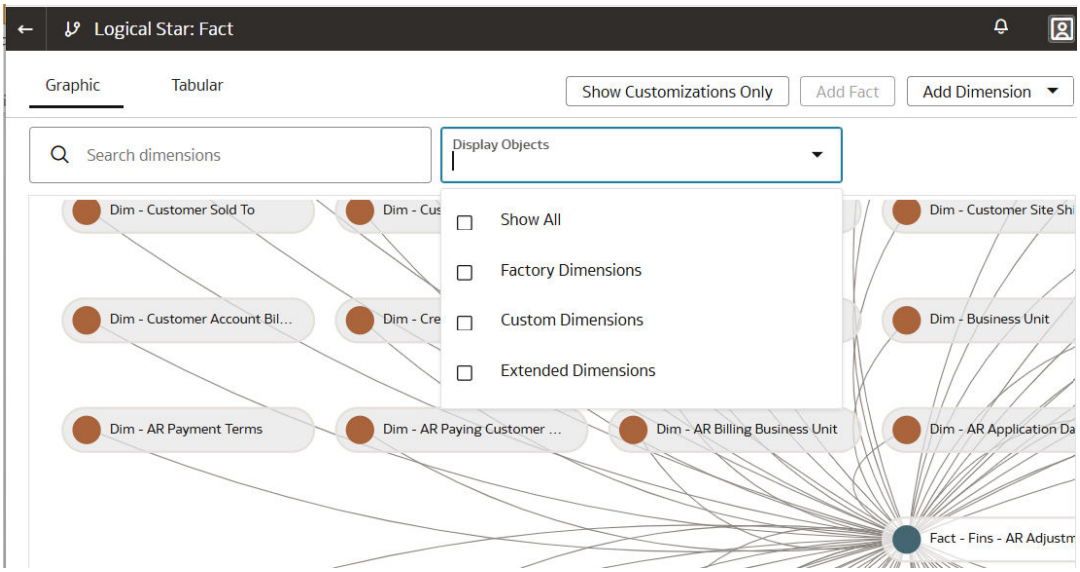
2. On the selected sandbox Details page, click **Perform Action**, and then select **Manage Logical Star**.
3. In Perform Action, select **Edit Logical Star**.
4. To select the prebuilt objects, select **Out of the box**, select a subject area and an applicable fact within the selected subject area, and then click **Next**. Select **Custom** to add custom objects to the logical star, select the applicable fact, and then click **Next**.



5. On the Logical Star – Fact page, click **Add Dimension** and proceed with the steps discussed in Manage Dimensions.



Manage Hierarchies

You can create a custom dimension with a hierarchy, join the custom dimension hierarchy to prebuilt or custom facts, and add the hierarchy to any subject area to meet your business requirements.

Assemble the product hierarchy using the attributes from a dimension table. Hierarchies enable you to define aggregations and drill downs. This makes it easier to report at a summary level and then drill into details easily within the same visualization.

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Within the logical star, you can filter and focus on custom dimensions by selecting **Show Customizations Only**. Additionally, you can search and filter on the objects within the logical star. You can create dimension or add an existing dimension with hierarchy in the logical star. See the recommendations for creating a hierarchy in Recommendations and Tips to Extend the Semantic Model.

1. Navigate to the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view **Actions**, click **Manage Sandbox**, and then click **View Sandbox**.
2. On the selected sandbox Details page, perform these steps:
    a. Click **Perform Action** and then select **Manage Logical Star**.
    b. Click **Edit Logical Star** and select the applicable fact.
    c. Click **Next**.
3. On the Logical Star – Fact page, click **Add Dimension**, and then select either **Create New Dimension** or **Add Existing Dimension**.
4. On the Add a Dimension page, in step 1 of the wizard, perform these steps: .
    a. Select the schema and object, and then enter a name for your dimension in **Dimension Name**.
    b. Select the **Use for Key** checkbox for all the keys required to join to the fact.
    c. Select the **Add Attributes** checkbox for all the columns that you need to add to the logical star.
    d. If required, rename columns by changing the **Display Name**.
    e. Click **Next**.
5. If any of the selected attributes have been removed or modified in the source table since the last refresh, then you see those columns highlighted and you get a message asking whether you want to update the table.
    - Select **OK** in the message to reload the source columns.
    - If you want to review the changes to the source columns, then click **Cancel** in the message, and later click **Refresh** to reload the source columns.
6. Click **Create Column** to add another column to your dimension table in the target subject area using these instructions:
    a. In Create Column, enter a display name.
    b. Under Data Elements, search for a data element from the physical table of the selected dimension table.
    c. From the search results, double-click the data element to place it in the text pane.
    d. Under Functions, search for a function to construct a column using expressions. For example, search for functions like "substring" or "concatenate" to construct new expression-based columns. From the search results, double-click the applicable result to add it to the central text pane.
    e. Click **Validate**, and then click **Save**.
7. In step 2 of the wizard, assemble the product hierarchy using the attributes from this dimension and click **Next**.
    a. Select **Add hierarchy to Subject Area**.
    b. Type the name for your hierarchy in **Hierarchy Name**.

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c. Select, drag, and drop the available data elements into the Selected Data elements pane to design a hierarchy for the dimension.

d. In the Selected Data Elements pane, click a level to update its primary key and set its display attribute in the Properties pane.

   You can add multiple levels in your hierarchy by right-clicking at a level and selecting Add Child or Add ‘n’ Child Levels. For example, your Region Hierarchy can have Region Total at Level 1, Region at Level 2, Country at Level 3, State at Level 4, and City at Level 5.

e. Optional: Select a **Type**.

   If you select Time as Type, you can't select other Type options. You can use **Ragged** and **Skipped Levels** together.

   - Select **Time** to define a hierarchy that is used specifically for a time-based hierarchy. A time hierarchy is required if you want to use time series calculations such as AGO and TODATE.
   - Select **Ragged** to define an unbalanced level-based hierarchy where not all data is present at all levels of the hierarchy.
   - Select **Skipped Levels** to define a hierarchy where not all members of the hierarchy have ancestors at all levels.

   For illustrated examples on types of dimensional hierarchies, see Dimensional Hierarchies, Level Keys, and Content Levels.

f. Click **Next**.

8. In step 3 of the wizard, perform these steps:

   a. In **Sort Order Column**, select applicable values for the columns that you selected to expose or use as a key.

   b. Ensure that the sort order column is within the same hierarchical level as the display column. For columns not requiring a custom sort, leave the sort order column in the default Select state.

   c. Click **Finish**.

Replace the Referenced Database Object

You can replace the database object referenced by a customization when you need to switch to a different table, view, or synonym, or when the object schema has changed.

The **Replace Object** option lets you update the referenced database object without deleting and recreating the customization. This preserves the existing configuration and settings, so you don’t need to re-enter them. Before replacing the object, ensure that the new table, view, or synonym includes all currently selected columns required by the customization.

1. Navigate to the Semantic Model Extensions page.
2. Under Customizations Sandbox, hover over the sandbox to display **Actions**, click **Manage Sandbox**, and then click **View Sandbox**.
3. On the selected sandbox Details page, click **Perform Action**, and then select **Manage Logical Star.**
4. In Perform Action, select **Edit Logical Star**.
5. Select the logical star that contains the customization whose referenced database object you want to replace, and then click **Next**.
6. Right-click the customization, and then select **Edit**.

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7. Click **Replace Object**.
8. If required, select a different schema from the Schema drop-down list, and then select the new database object from the **Object** drop-down list.
9. If the new object contains all required columns, review the changes, click **Next** through the remaining steps.
10. Click **Finish** and save your changes.

    If the new object doesn't contain all required columns, an error message is displayed and the customization is automatically reverted to the original object.

Generate Logical Star Using AI

Use AI guidance to quickly generate a customized logical star in a semantic model extension.

1. Navigate to the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view Actions, click **Manage Sandbox**, and then click **View Sandbox**.
2. On the selected sandbox Details page, click **Perform Action**, select **Manage Logical Star**, and then select **Create Logical Star.**
3. On the Logical Star page, click **Auto Generate Logical Star**.
4. Select schema and physical table, provide a fact table name to display in the Semantic Model, and then click **Next**.
5. Optional: Provide the business context for what the fact represents, such as SALES or FINANCE.
6. Review the list of suggested and selected entities after the columns in the fact are analyzed.
7. Click **Select** to include the entities you want and click **Selected** to remove any entities you want to exclude, and then click **Next**.

   The fact is analyzed further, and a list of suggested and selected dimensions is displayed for your review. The join column that'll be used to connect the fact to each dimension is also identified.
8. Click **Select** to include the dimensions you want and click **Selected** to remove any dimensions you want to exclude, and then click **Next**.
9. Review the selected dimensions and their join columns, then click **Finish** to generate the logical star.

   The generated star schema is fully editable and extensible. Refine or extend it as required.

Manage Subject Areas

The Manage Subject Areas action enables you to organize all entities and attributes available for reporting in subject areas.

You can create business-friendly names and organize them in a desired order within folders to make it easier to find and include in the reports. The typical organization is to have each dimension organized in a folder with all its attributes within it, followed by folder for facts and calculations. You can rearrange columns based on your organizational preferences. You can reorder, rename, remove columns, and add folders to the custom dimensions and facts in the custom and prebuilt subject areas.

You can create a subject area or modify a subject area.

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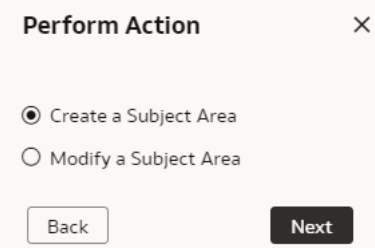
Create Subject Area

You can create a subject area as a container and later add facts and dimensions to your newly created subject area or create a subject area based on an existing one. The subject area enables you to organize all entities and attributes available for reporting.

1. On the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view **Actions**, click **Manage Sandbox**, and then click **View Sandbox**.
2. On the selected sandbox Details page, click **Perform Action**, and then select **Manage Subject Areas**.



3. In Perform Action, select **Create a Subject Area**, and then click **Next**.



4. In step 1 of the wizard, create a subject area using one of the methods:
   - Select **Create a Subject Area** to create a subject area container, and provide these details:
     a. Enter a name without any leading or trailing white spaces, add a description, and then click **Next**.
     b. In step 2 of the wizard, click **Add Elements**, and then click either **New Custom Elements** to select custom elements that you created or **Pre-built Custom Extensions** to select factory data elements to rearrange the subject area elements that are delivered by Oracle.
     c. Click **Add Subject Area** to select and add data elements from multiple subject areas.
     d. In step 3 of the wizard, organize and rename the data elements in your new subject area, and then click **Next**.
     e. In step 4 of the wizard, review your new subject area and click **Finish** to create it.
   - Select **Create a Subject Area based on an existing one** to create a subject area using an existing one in the system, select an existing subject area, name your subject area, and then click **Next**. Complete steps 2, 3, and 4 of the wizard. See Modify Subject Area.

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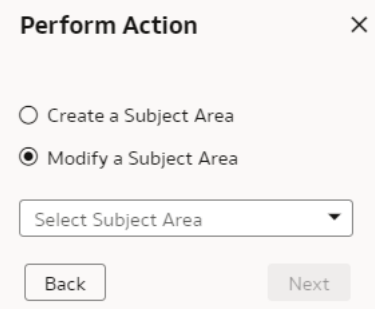
Modify Subject Area

You can modify custom and prebuilt subject areas. Modify a custom subject area to change the previously selected data elements or add more data elements and modify a prebuilt subject area to add more data elements.

Ensure to create custom elements if you want to add them to the custom subject area and add additional columns to the prebuilt subject area prior to modifying either of them.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **User Extensions**.
4. On the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view **Actions**, click **Manage Sandbox**, and then click **View Sandbox**.
5. On the selected sandbox Details page, click **Perform Action**, and then select **Manage Subject Areas**.
6. In Perform Action, select **Modify a Subject Area**, select a custom or prebuilt subject area that you want to modify, and then click **Next**.



7. In step 1 of the wizard, view the selected subject area details and click Next.
8. In step 2 of the wizard,
   - If you're modifying a custom element, click **Add Elements** and then click **New Custom Elements** to search and select custom elements that you created.
   - If you're modifying a prebuilt element, click **Add Elements** and then click **Extend Pre-built Elements** to search and select the prebuilt elements that you extended.

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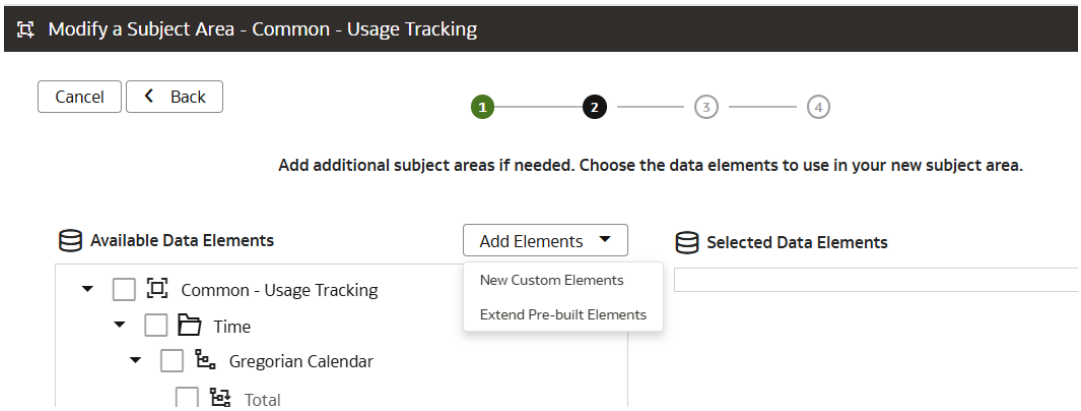

9. Click **Add Subject Area**, select a subject area, and click **Add** to display the elements from the selected subject area under **Available Data Elements**. Select the elements to add them to the **Selected Data Elements** list.
10. In step 3 of the wizard, drag or right-click to organize and rename elements within the subject area.
11. In step 4 of the wizard, review the Subject Area and verify your customizations.
12. Click **Finish**.

Delete a Sandbox

You must delete all sandboxes that are no longer required.

Before you delete your sandbox, make sure you remove the unnecessary customizations such as dimensions and joins within the Logical Stars to avoid creating orphans that can cause errors in the semantic model. Start deletion at the lowest level. To unblock deletions of the referenced objects in the Logical Star, first delete the specific objects within the Subject Area, or delete the entire Subject Area.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **User Extensions**.
4. Under Customizations Sandboxes, hover over the sandbox you want to delete, view **Actions**, click **Manage Sandbox**, and then click **Delete Sandbox**.
5. In the Confirm Delete dialog box, click **Delete** to permanently delete the sandbox.

Manage Variables

Use the Manage Variables action to control the behaviour of sessions and queries. You can create and modify the custom variables.

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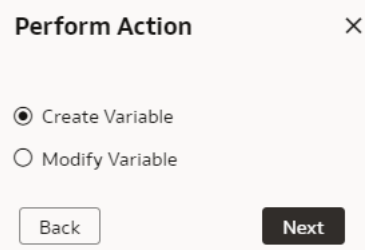
Create Variable

Create custom session variables that you can use in your semantic model. The custom session variables are available for use only after you have merged the applicable sandbox into the main sandbox.

The SQL query that you define is executed by user OAX$OAC. If you're using another schema in the query, then you must mention the schema name as prefix. You must ensure to grant user OAX$OAC access to all the database objects used in the query.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **User Extensions**.
4. On the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view **Actions**, click **Manage Sandbox**, and then click **View Sandbox**.
5. On the selected sandbox Details page, click **Perform Action**, select **Manage Variables**, and then select **Create Variable**.



   You see the wizard sequence to add the session variables and a list of existing session variables.
6. In step 1 of the wizard, check if any of the existing session variables serve your purpose. If yes, then you can exit the wizard and use the applicable existing session variables in your analyses. If no, then continue with the next steps to create the session variables that you require.
7. In **Initialization Block Name**, enter a name such as `Add a Session variable using Invoice Received Date`, add a brief description, and select a preceding initialization block in **Preceding Block**.
8. In **SQL Query**, enter the SQL query that would be executed in the autonomous data warehouse and return a value that you can use in the reports and click **Next**. For example, if you want to get the Exchange Rate Type that's defined in the system into a session variable, then you can use the following SQL script:

   Copy
   ```
   SELECT PARAMETER_VALUE FROM DW_CONTENT_PARAM_CONFIG WHERE
   PARAMETER_CODE='PARAM_GLOBAL_EXCHANGE_RATE_TYPE'
   ```
9. In step 2 of the wizard, create the session variables using the output of the initialization block created in step 1 of the wizard. Select **Row-wise Initialization** to reset variable value for each row and **Use caching check boxes** to improve performance.
10. Click **Finish**.

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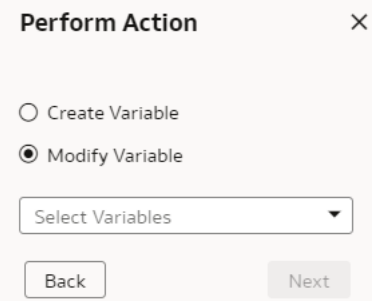
Modify Variable

Modify a custom variable to update the SQL query that would be executed in the autonomous data warehouse and return a value that you can use in the reports.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **User Extensions**.
4. On the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view **Actions**, click **Manage Sandbox**, and then click **View Sandbox**.
5. On the selected sandbox Details page, click **Perform Action**, and then select **Manage Variables**.
6. In Perform Action, select **Modify Variable**, select the variables that you want to modify, and then click **Next**.



7. Follow through the wizard to modify the variable and click **Finish**.

Prepare Your Sandbox

Before you merge or publish a Sandbox, ensure it is prepared by validating it, correcting any errors, and applying all the changes.

Utilize the verification and debugging features to ensure the sandbox is free of errors. Before you merge your sandbox, validate your sandbox to proactively catch errors and prevent issues from propagating to the main Sandbox.

Topics:

- Validate Sandbox and View Validation Report
- Apply Changes

Validate Sandbox and View Validation Report

Validate your sandbox to proactively identify all potential errors before you apply changes.

When you validate a sandbox, if there are any errors, you get a list of errors in the Sandbox. You need to review and resolve the errors in the Sandbox.

1. Sign in to your service.

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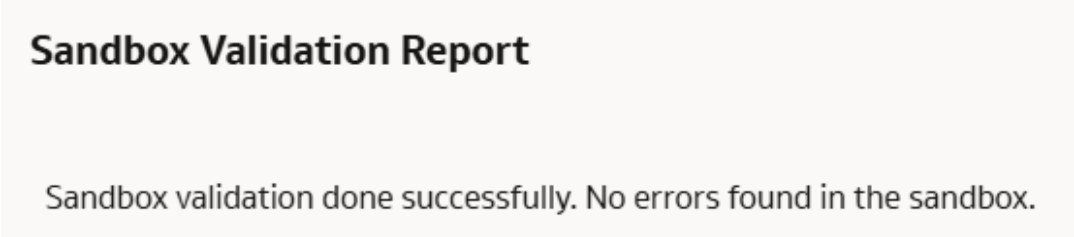
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **User Extensions**.
4. From the Actions menu of the sandbox you wish to validate, click **Prepare Sandbox**, and then click **Validate Sandbox**. This option is available for both Main and Customization Sandboxes.
5. Click **Prepare Sandbox**, and then click **View Validation Report**.

   You get the following message if the sandbox validation is successful.



   If there aren't any errors, the **Subject** in the **Activity** tab shows as **Validated with no detected errors** and you can proceed with using the Sandbox.

Synchronize Customization Sandbox with Main Sandbox

If your sandbox contains conflicts with the main sandbox, and your sandbox was created before a merge in the main sandbox, you must resolve these conflicts before you apply and merge your changes into the main sandbox.

Validate your sandbox to identify and resolve errors, and then synchronize your sandbox with the main sandbox's latest changes to prevent inadvertently overwriting another developer's work.

This practice is also useful if another developer merged a new object into Main and you need to include that new object in your own customization.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **User Extensions**.
4. On the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view Actions, click **Prepare Sandbox**, and then click **Sync With Main Sandbox**.

   To enable **Sync With Main Sandbox**, you must first run **Validate Sandbox** and resolve any errors detected.
5. On the Synchronize Conflicts page, for each conflict, choose a resolution action to retain, delete, keep the sandbox version, or synchronize with the version in Main.
6. After you select all the desired resolution actions, click **Sync with Main** to update your Sandbox with your choices.
7. If you need to start over after an incorrect choice, select the **Reset Resolutions** option to restore all the resolution actions to their default settings.

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Resolve Sandbox Errors

If the Sandbox has errors, review the list of errors and take action.

See Resolve Common Errors in Semantic Model Extensions.

Apply Changes

Apply changes to validate the sandbox before you merge to main or publish your sandbox.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **User Extensions**.
4. On the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view **Actions**, click **Prepare Sandbox**, and then click **Apply Changes**.

Prepare Your Model

Before you create a semantic model bundle, make sure the semantic model is free of errors.

Topics:

- Validate Model
- Resolve Common Errors in Semantic Model Extensions

Validate Model

Prior to creating a semantic model bundle to deploy to another instance, you can validate the semantic model to confirm that it's error free.

Use the Validate Model option when:

- You want to confirm that there are no errors in the model.
- You see a banner on the Semantic Model Extensions page alerting you about errors in the model.

The initial banner provides a Learn More option linking to this information e Validate Model chapter, which references the Resolve Common Errors in Semantic Model Extensions appendix that can be used to debug and resolve your semantic model errors.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **Validate Model** and monitor the status of this activity on the on the Activity tab.
    - If there aren't any errors, the **Subject** in the **Activity** tab shows as **Validated with no detected errors** and you can proceed with creating a semantic model bundle.
    - If there are errors, the **Subject** in the **Activity** tab shows as **Errors Detected. Refresh your browser to review**.

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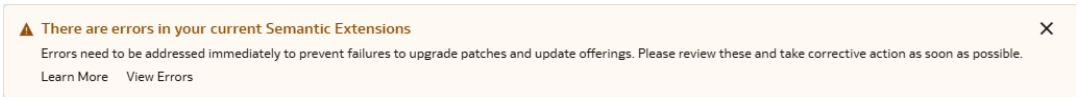
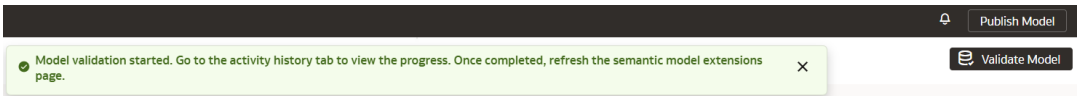
4. On the Semantic Model Extensions page, if there are errors in your semantic extensions since the last system error check was preformed, an initial banner appears alerting you to address the errors immediately to prevent failures to upgrade the patches and update offerings.



5. Click **Learn More** in the initial banner to learn how to debug and resolve your semantic model errors.
6. Click **View Errors** in the initial banner to review the detected issues and then click **Download Errors** to download and export the errors as a spreadsheet for easier analysis
7. Address each error in the semantic model by identifying the specific error and its location within the model.

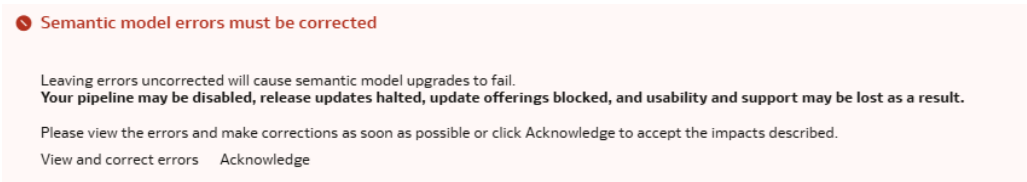
   These debugging tips can help you address common errors in your semantic model; see Resolve Common Errors in Semantic Model Extensions.
8. Click **Validate Model** to refresh the list of errors on the banner.



9. After the validation process is complete, return to the semantic model components tab, reload the Semantic Model Extensions page to verify if any semantic model extension errors are identified.

   If errors are present, the banner appears. If errors are resolved, the banner doesn't appear.
10. If you've closed the initial banner without correcting errors, review the second more urgent warning that alerts you about the adverse impact of your decision to ignore the errors, and:
    - Click **View and correct errors** to immediately export, review, and resolve all semantic model errors.
    - Click **Acknowledge** to ignore the errors.

> **Note**
>
> This option has a downstream effect on the pipeline, upgrades, offering updates, and usability, and is recorded as **Upgrade Warning Acknowledged** in the **Activity** tab.



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Resolve Semantic Model Errors

If the Semantic Model has errors, review the list of errors and take action.

See Resolve Common Errors in Semantic Model Extensions.

Integrate Your Sandbox

To integrate your sandbox changes with the Semantic Model, you can either merge your sandbox into the main sandbox and publish the main sandbox, or you can publish your individual sandbox.

Topics:

- Merge Customization Sandbox to Main Sandbox
- Publish Model

Merge Customization Sandbox to Main Sandbox and Publish

You can merge your customized sandbox with the main sandbox and publish.

The **Merge to Main Sandbox and Publish** option is available when the main sandbox is published or the selected custom sandbox is published.

Make sure you have prepared, validated, and applied the latest changes to your customized sandbox.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **User Extensions**.
4. On the Semantic Model Extensions page, under Customizations Sandboxes, hover over the applicable sandbox you want to merge, view **Actions**, click **Integrate Sandbox**, and then click **Merge to Main Sandbox and Publish**.
5. In Confirm Merge with Main, review the message and click **Merge**.

Merge Customization Sandbox to Main Sandbox

After you prepare, validate, and apply the latest changes to your sandbox, you can merge your sandbox with the main Sandbox.

The **Merge to Main Sandbox** option is available when the other custom sandbox has been published.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **User Extensions**.
4. On the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view **Actions**, click **Integrate Sandbox**, and then click **Merge to Main Sandbox**.

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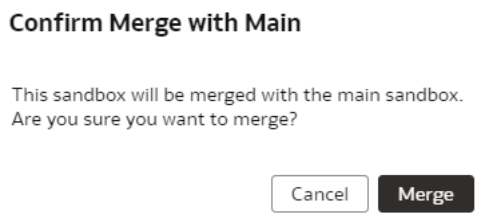
5. In Confirm Merge with Main, review the message and click **Merge**.



Publish Model

You can publish the sandbox in the non-production environments such as development or test to ensure that there are no errors.

While publishing the data model, you can select the user extensions and security configurations that you added as part of customizing the semantic model. If you select the security configurations, then the system applies them on the user extensions that you selected. If the security configurations refer to elements in the model that aren't part of the user extensions, then the system excludes them at the time of publishing the model.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **Publish Model**.
4. In Publish Model, select a sandbox, select the user extensions and security configurations that you want to publish.

> **Note**
>
> You can publish a specific sandbox or the main sandbox. If you select **None - Unpublish custom extensions**, the semantic model reverts to factory configuration.

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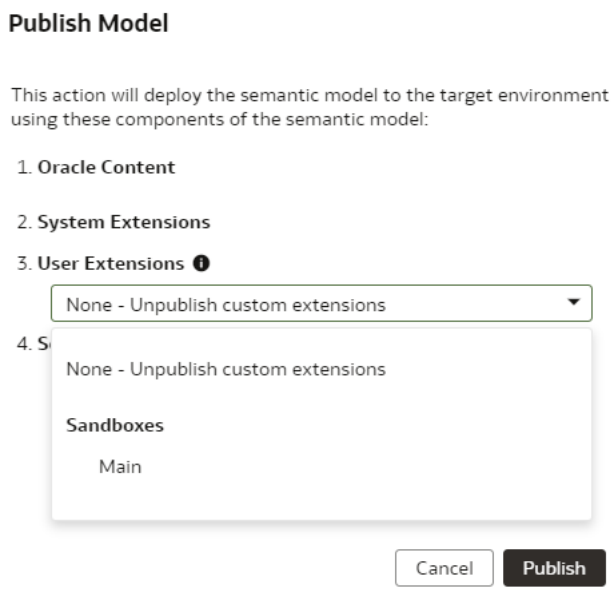

5. Click **Publish**.

Use Cases: Extend the Semantic Model Using the Sandbox Framework

These uses cases show you how to extend the semantic model using the Sandbox framework.

The use cases assume that you have created a sandbox, for example titled *MySandbox5Mar25*.

Task	Action
1. Extend a Conformed Dimension	Add attribute columns to an Dimension folder such as Customer, Item Category, and Time.
2. Extend a Degenerate Dimension	Add attribute columns to Transaction Details such as Dim - OM Sales Order Details. Folder names mostly end in *Details*.
3. Add Custom Dimension (to a prebuilt fact)	Create a folder containing dimensional attribute columns.
4. Add a Custom Fact (join to prebuilt dimensions)	Create a folder containing fact measure columns.
5. Add a Custom Fact (containing both attributes and measures)	Create two folders, one containing fact measure columns and another containing dimension attribute columns.
6. Add Derived Columns	Add a calculated column to a folder.
7. Create Custom Dimension with Hierarchy	Add workbook that can expand and collapse to dimension attributes.
8. Create Custom Subject Area – Based on Existing One	Create a subject area to either: 1. Reuse elements from an existing subject area 2. Refine or clean up an existing subject area
9. Create a Subject Area – Add Custom Fact and Custom Dimension	Create an empty subject area with all custom elements (examples Salesforce, Quickbooks, Google Analytics subject areas.)

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Topics:

- Use Case 1: Extend a Conformed Dimension
- Use Case 2: Extend a Degenerate Dimension
- Use Case 3: Add Custom Dimension to a Prebuilt Fact
- Use Case 4: Add a Custom Fact
- Use Case 5: Add a Degen Custom Fact
- Use Case 6: Add Derived Columns
- Use Case 7: Create Custom Dim with Hierarchy
- Use Case 8: Create a Subject Area Based on an Existing Subject Area
- Use Case 9: Create a Subject Area

Upload Samples for the Semantic Model Extensions Use Cases

For learning purposes, use the samples mentioned in the use cases and perform the user extensions.

Prior to using the samples in the user extensions, you must ensure that the samples mentioned in the use cases are available in the applicable autonomous data warehouse.

1. Download these samples to your local machine.
2. Connect to the applicable autonomous data warehouse using SQL Developer Client and the OAX_USER credentials. See Connect Fusion Data Intelligence to an Autonomous AI Lakehouse with SQL Developer Desktop Client.
3. Create the sample table in the autonomous data warehouse using either of the options:
   - In SQL Developer Client, import the applicable .xlsx file, based on the use case, from your local machine into the applicable autonomous data warehouse using these steps:
     a. Right-click **Tables** and then click **Import Data**.
     b. In step 1 of the Data Import Wizard, select **Local File** in **Source**, click **Browse for File**, and select the applicable `.xlsx` file, based on the use case; for example, FDI_X_COUNTRY.xlsx, from your local machine, and then click **Next**.
     c. In step 2 of the Data Import Wizard, enter a name in **Table Name**, review the file contents in the File Contents section, and then click **Next**.
     d. In steps 3 and 4 of the Data Import Wizard, review and click **Next**.
     e. In step 5 of the Data Import Wizard, click **Finish**.
   - Based on the use case, if the sample table is a `.sql` file, execute the data definition language (DDL) `.sql` using these steps:
     a. Click **File**, click **Open**, and then select the applicable `.sql` file, based on the use case, that you saved on your local machine; for example, FDI_X_COUNTRY.sql.
     b. Under SQL Worksheet on the right pane, click the **Run Script** icon.
     c. View the script output in the Script output area.
4. Create an SQL view using these steps:
   a. Right-click **Views** and click **New View**.

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b. In Create View, verify that you see the appropriate value in **Schema**, provide an applicable name for the view based on the use case in **Name**, under the SQL Query tab, in the SQL Query area, provide the SQL script mentioned in the applicable use case, and then click **OK**.

5. Grant semantic model access to the database object for the OAX$OAC schema using these steps:
   a. In **Views**, right-click the applicable view, click **Privileges**, and then click **Grant**.
   b. In Perform Grant Action, click SQL tab, provide the SQL script mentioned in the applicable use case, and then click **Apply**.
6. Under SQL Worksheet on the right pane, provide the SQL script mentioned in the applicable use case, and then click the **Run Statement** icon to validate that the data is loading from the sample table as expected.

Use Case 1: Extend a Conformed Dimension

You can extend a dimension folder by adding new columns that represent additional descriptive attributes related to the conformed dimension.

The *Customer Bill-to Details* folder, (a sub-folder of *Customer Site* folder, of the prebuilt Subject Area *Financials - AR Adjustments*), already contains the attribute *Bill-to-Country* containing the two-letter country abbreviation. However, it's missing the additional descriptive attribute *Country Full Name*.

In this use case, you add the *Country Full Name* column from an external source into the prebuilt *Customer Bill-to Details* folder to associate the full country attribute with the customer site. You join the custom extension to the prebuilt *Dim – Customer Bill To Location* conformed dimension using *Customer Location ID*.

This use case requires the Fusion ERP Analytics subscription. However, you can apply the concepts covered in this use case to any other Fusion Data Intelligence subscription. The use case may reference the Autonomous AI Lakehouse prebuilt tables and synonyms and mock custom database tables and views. If you've activated the specified Fusion Data Intelligence subscription, you may use the samples provided. The recommendation is to substitute the sample objects for your own custom Autonomous AI Lakehouse objects such as custom table, materialized view, view, custom synonym, or data augmentation dataset synonym.

In this task, you:

1. Add a Dimension Extension to the Semantic Model
2. Present the Dimension Extension in the Semantic Model
3. Apply and Publish the Customizations
4. Validate the Results

Use the following to complete this task:

- Sample dimension extension table - FDI_X_COUNTRY_D
- Attribute - Country FullName
- Subject area - AR Adjustments
- Parent Dimension Folder - Customer
- Dimension folder - Dim - Customer Bill To Location
- Prebuilt ADW table - DW_CUSTOMER_LOCATION_D

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Ensure that you refer to Upload Samples for the Semantic Model Extensions Use Cases and complete these prerequisites:

1. Create a sandbox titled MySandbox5Mar25. See Create a Sandbox. Or, edit an existing sandbox on the Semantic Model Extensions page; for example, by clicking the MySandbox5Mar25 sandbox.
2. Create the sample dimension extension table, FDI_X_COUNTRY_D, in the autonomous data warehouse associated with your Fusion Data Intelligence instance using the sample files FDI_X_COUNTRY_D.xlsx or FDI_X_COUNTRY.sql.
3. Create a view titled FDI_X_CUSTOMER_LOCATION_D_V to join the custom table FDI_X_COUNTRY_D to the prebuilt dimension table DW_CUSTOMER_LOCATION_D that contains the primary key CUSTOMER_LOCATION_ID, which will be used to join when extending the dimension. Use the following SQL script to create the view:

```
CREATE OR REPLACE FORCE EDITIONABLE VIEW
"OAX_USER"."FDI_X_CUSTOMER_LOCATION_D_V" ("CUSTOMER_LOCATION_ID",
"COUNTRY_FULLNAME") DEFAULT COLLATION "USING_NLS_COMP"  AS
  (
SELECT p.CUSTOMER_LOCATION_ID, NVL(c.COUNTRY_FULLNAME,'~NOVALUE~') AS
COUNTRY_FULLNAME
FROM OAX$OAC.DW_CUSTOMER_LOCATION_D p
LEFT JOIN FDI_X_COUNTRY_D c
ON p.COUNTRY_CODE = c.COUNTRY_CODE
);
```

4. Grant semantic model access to the FDI_X_CUSTOMER_LOCATION_D_V view for the OAX$OAC schema using the following SQL script:

```
GRANT SELECT ON "OAX_USER"."FDI_X_CUSTOMER_LOCATION_D_V" TO "OAX$OAC";
```

5. Validate that the data is loading from the sample as expected using the following SQL script:

```
SELECT * FROM OAX_USER.FDI_X_CUSTOMER_LOCATION_D_V;
```

Add a Dimension Extension to the Semantic Model

You edit the logical star to define the autonomous data warehouse object, attributes, display labels, and keys, and then join the custom object to the prebuilt conformed dimension being extended.

In this task, you edit *Fact – Fins – AR Adjustments* logical star to add a dimension extension on *Dim – Customer Bill To Location* referencing the autonomous data warehouse object *FDI_X_CUSTOMER_LOCATION_V*. The custom extension is joined to the prebuilt *Dim – Customer Bill To Location* conformed dimension using *Customer Location ID*.

1. On the Semantic Model Extensions page, click the **MySandbox5Mar25** sandbox.

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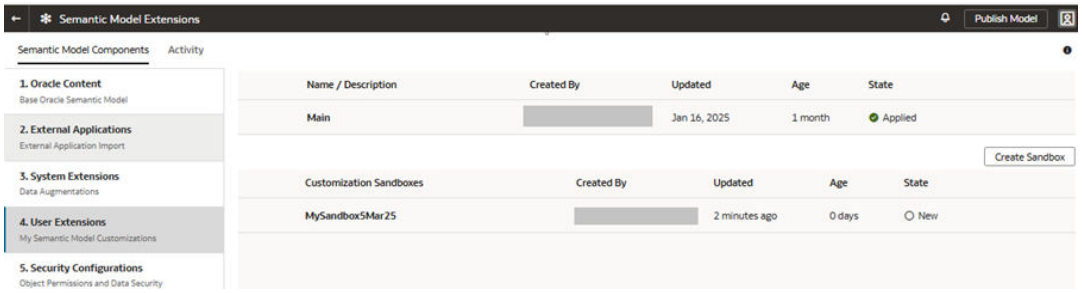
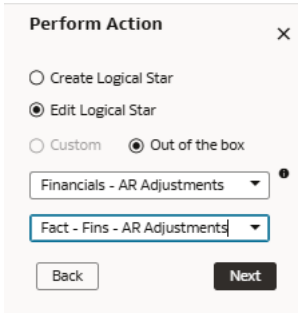
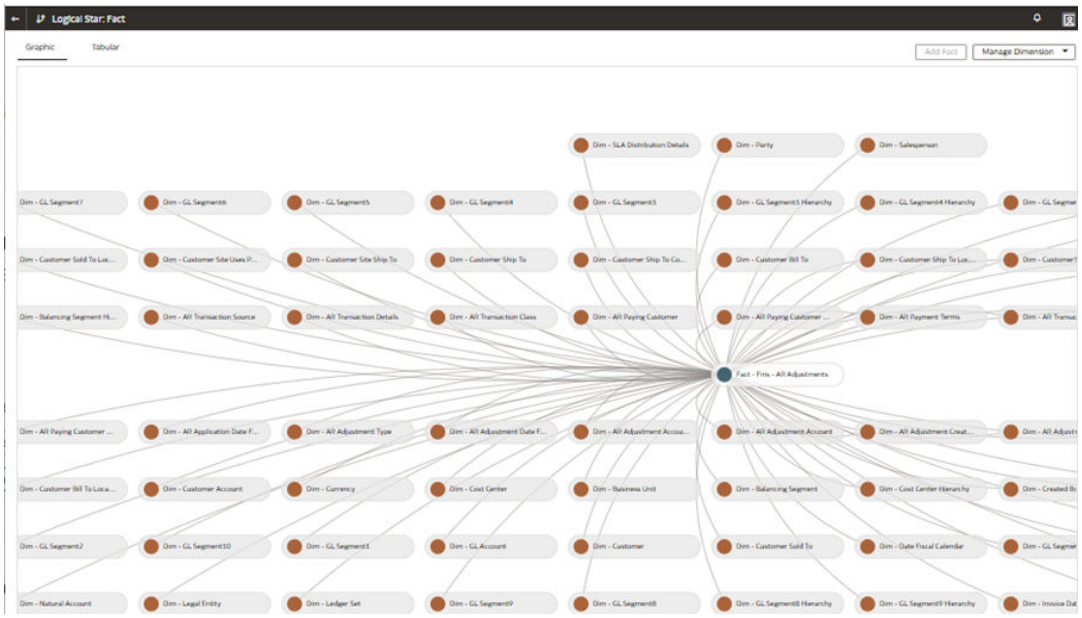


2. In **Perform Action**, click **Manage Logical Star**, then **Edit Logical Star**, then **Out of the box**, then select **Financials - AR Adjustments** as the subject area, select **Fact – Fins – AR Adjustments** as the corresponding fact, and then **Next**.



3. On the Logical Star: Fact page, locate the **Dim - Customer Bill To Location** dimension table, right-click it, and then click **Manage Extension**.



4. In the **Manage Extension** list of values, select **Extend Dim**.

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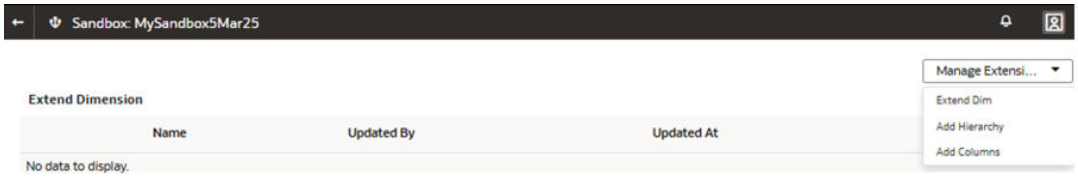
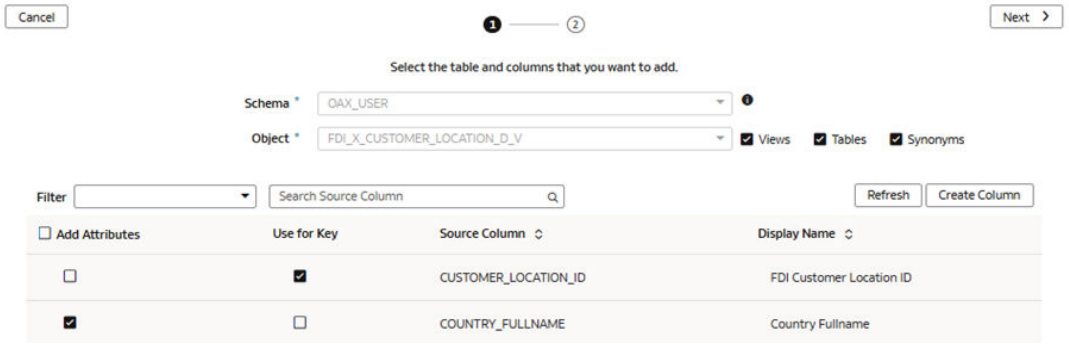


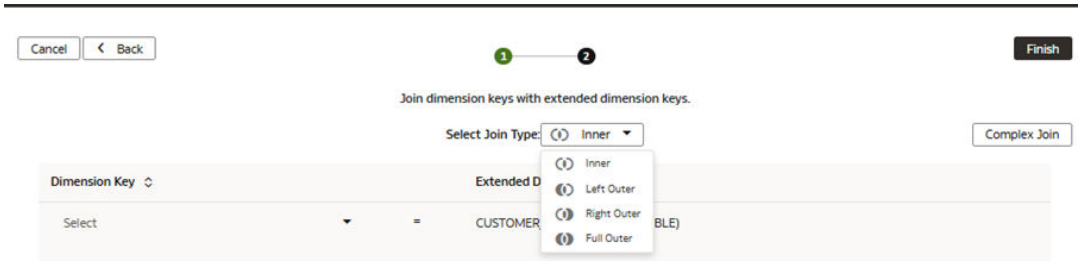
5. On the Extend a Dimension page, in step 1 of the wizard, select **OAX_USER** in **Schema** and select **FDI_X_CUSTOMER_LOCATION_D_V** in **Object**. Select the **Use for Key** checkbox for **CUSTOMER_LOCATION_ID** source column, select the **Add Attributes** checkbox for **COUNTRY_FULLNAME** source column, and click **Next**.

> **Note**
>
> Ensure that the display name is unique and doesn't conflict with any of the prebuilt column names; for example, rename **CUSTOMER_LOCATION_ID** as `FDI Customer Location ID`.



6. In step 2 of the wizard, select **Left Outer** in **Select Join Type**.

> **Note**
>
> The join type is mostly Inner (match) or Left (all from original Dim). Join type Left ensures that no data is lost.



7. Select **Customer Location ID (DOUBLE)** as **Dimension Key** and **CUSTOMER_LOCATION_ID (DOUBLE)** as **Extended Dimension Key**. Click **Finish**.

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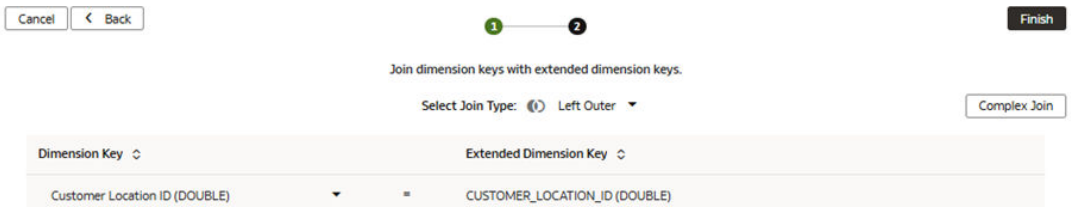


8. Review the extended dimension.

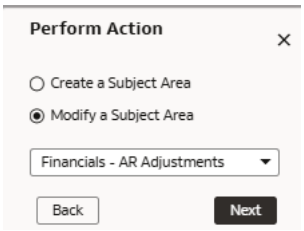


Present the Dimension Extension in the Semantic Model

You modify the subject area to present the extended columns in a subject area folder.

In this step, you modify the *Financials - AR Adjustments* subject area to present the extended *Country Full Name* column in the prebuilt *Customer Bill-to Details* folder.

1. Navigate to the **MySandbox5Mar25** sandbox.
2. In **MySandbox5Mar25** sandbox, click **Perform Action**, then **Manage Subject Areas**, then **Modify a Subject Area**, select **Financials – AR Adjustments** as the subject area, and then **Next**.



3. In step 1 of the wizard on the Modify a Subject Area – Financials – AR Adjustments page, view the details and click **Next**.
4. In step 2 of the wizard, select **Manage Elements**, and then click **Manage Factory Customizations**.

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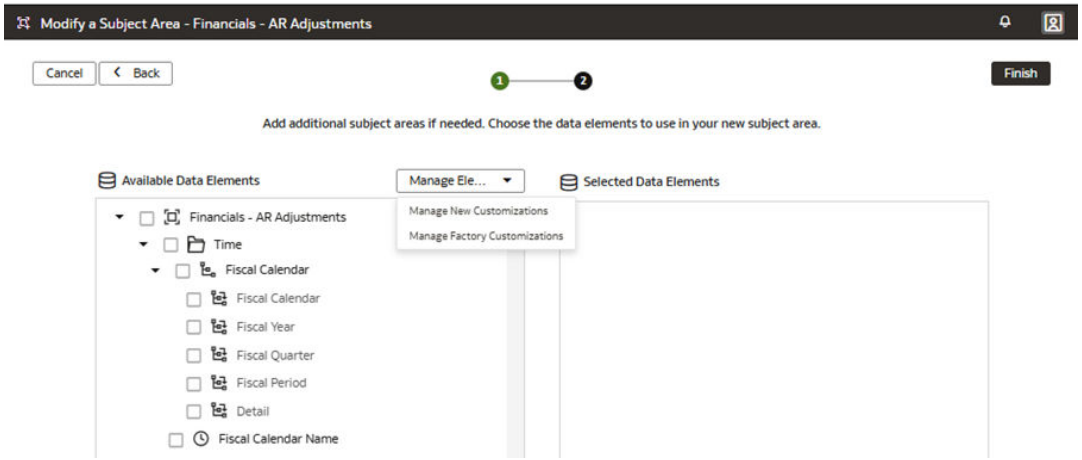
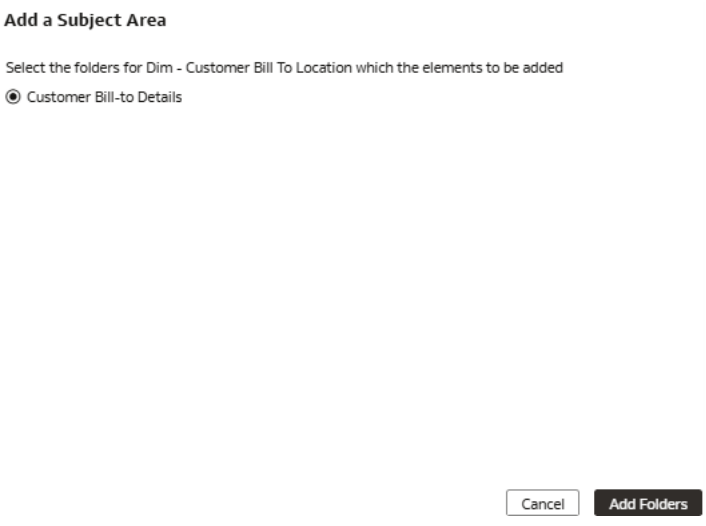


5. In Add a Subject Area, select **Country Fullname** and click **Add Folders**.



6. In Add a Subject Area, select the **Customer Bill-to Details** folder and click **Add Folders**.



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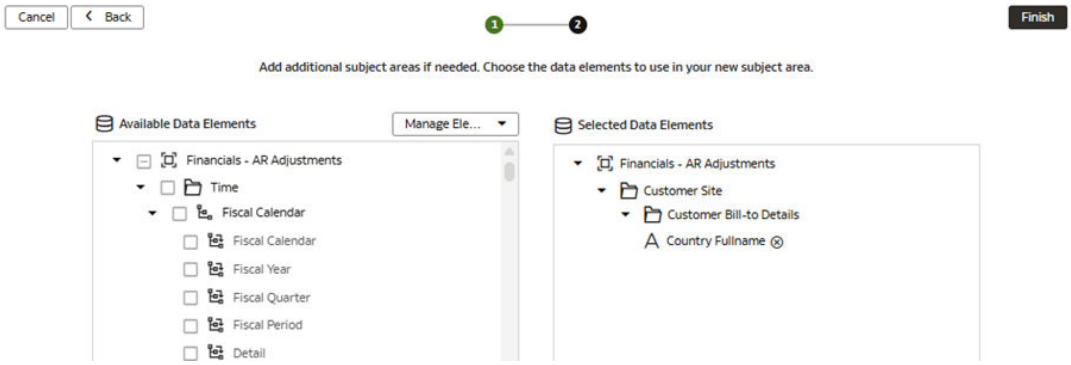
7. Review the additions and click **Finish**.



Apply and Publish the Customizations

You apply the changes to compile the sandbox and ensure that the sandbox is error free.

Then, you use the Activity tab to debug, resolve errors, and confirm that the Apply Changes action completes and is successful. Finally, you merge the changes to the main sandbox and publish the main user extensions to share the new extensions with consumers.

In this step, you apply the changes, use the Activity tab to monitor the status, merge the *MySandbox5Mar25* sandbox to the Main sandbox, and then publish the main user extension.

1. On the Semantic Model Extensions page, hover over the **MySandbox5Mar25** sandbox to view **Actions**, and then click **Apply Changes**.
2. Click the Activity tab to monitor the **Apply Changes** task on the Activity page.
3. After the changes are successfully applied, click **Publish Model** on the Semantic Model Extensions page.
4. In Publish Model, in User Extensions, select **MySandbox5Mar25** and in Security Configurations, select **All**.
5. Click **Publish**.
6. On the Semantic Model Extensions page, click the Activity tab to monitor the **Publish Customizations** task.

   See Apply Changes and Publish Model.

Validate the Results

Verify that your customizations are visible in the semantic model.

1. On the Fusion Data Intelligence Console, click **Go to Home Page**.
2. On the Oracle Analytics Home page, click **Create**, click **Workbook**, in **Add Data**, select **Financials - AR Adjustments**, the subject area that is extended in this use case, and then click **Add to Workbook**.
3. Expand the **Customer Site** folder, then expand the **Customer Bill-to Details** folder, and verify that the extended attribute **Country Fullname** is visible at the bottom of the list of attributes.
4. Build a report to display that the extended dimension attribute has been successfully joined to the desired fact measures.

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Use Case 2: Extend a Degenerate Dimension

You can extend a transaction details dimension folder by adding new columns that represent additional descriptive attributes related to the degenerate (degen) dimension.

The *Sales Order Details* folder (a sub-folder in the *Fulfilment Line Details* folder) available in the prebuilt *SCM – Sales Order* subject area doesn't contain the required descriptive attribute *Fulfil Partner*.

In this use case, you add the *Fulfil Partner* column from an external source into the prebuilt *Sales Order Details* folder to associate the details of the partner who is fulfilling the applicable sales order. The custom extension is joined to the prebuilt *Dim – OM Sales Order Details* degen dimension using the *Fulfill Line ID* column.

This use case requires Fusion SCM Analytics subscription. However, you can apply the concepts covered in this use case to any other Fusion Data Intelligence subscription. The use case may reference Autonomous AI Lakehouse prebuilt tables and synonyms and mock custom database tables and views. If you've activated the specified Fusion Data Intelligence subscription, you may use the samples provided. The recommendation is to substitute the sample objects for your own custom Autonomous AI Lakehouse objects such as custom table, materialized view, view, custom synonym, or data augmentation dataset synonym.

In this task, you:

1. Add a Transaction Details Extension to the Semantic Model
2. Present the Transaction Details Extension in the Semantic Model
3. Apply and Publish the Customizations
4. Validate the Results

Use the following to complete this task:

- Attribute - Fulfil Partner column
- Subject area - SCM - Sales Orders
- Parent Dimension Folder - Sales Orders
- Dimension folder - Dim - OM Sales Orders Details

Ensure that you refer to Upload Samples for the Semantic Model Extensions Use Cases and complete these prerequisites:

1. Create a sandbox titled MySandbox5Mar25. See Create a Sandbox. Or, edit an existing sandbox on the Semantic Model Extensions page; for example, by clicking the MySandbox5Mar25 sandbox.

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2. Generate the sample Transaction Details Extension view titled FDI_X_OM_FULFILLMENT_CF_V using this SQL script:

```
CREATE OR REPLACE VIEW FDI_X_OM_FULFILLMENT_CF_V
AS
(
SELECT FULFILL_LINE_ID,
CASE ORDER_LINE_NUMBER
WHEN 1 THEN 'Sysco Corporation'
WHEN 2 THEN 'US Foods'
WHEN 3 THEN 'Performance Food Group (PFG)'
WHEN 4 THEN 'McLane Company'
WHEN 5 THEN 'Gordon Food Service (GFS)'
WHEN 6 THEN 'The H.T.'
WHEN 7 THEN 'KeHE Distributors.'
WHEN 8 THEN 'Reyes Holdings'
WHEN 9 THEN 'Ben E. Keith Foods'
WHEN 10 THEN 'Shamrock Foods'
WHEN 11 THEN 'Maines Paper and Food Service'
WHEN 12 THEN 'SpartanNash'
WHEN 13 THEN 'UNFI'
WHEN 14 THEN 'C and S Wholesale Grocers'
WHEN 15 THEN 'Core-Mark Holding Company'
WHEN 16 THEN 'Cheney Brothers'
ELSE 'Unknown'
END AS FULFIL_PARTNER
FROM OAX_USER.DW_OM_FULFILLMENT_CF
);
```

   This view is based on the OAX_USER.DW_OM_FULFILLMENT_CF fact table. However, you can switch it to any other fact table.

3. Grant semantic model access to the FDI_X_OM_FULFILLMENT_CF_V view for the OAX$OAC schema using the following SQL script:

```
GRANT SELECT ON OAX_USER. FDI_X_OM_FULFILLMENT_CF_V TO "OAX$OAC";
```

4. Validate that the data is loading from the sample as expected using the following SQL script:

```
SELECT * FROM FDI_X_OM_FULFILLMENT_CF_V;
```

Add a Transaction Details Extension to the Semantic Model

You edit the logical star to define the autonomous data warehouse object, attributes, display labels, and keys, and then join the custom object to the prebuilt degen dimension being extended.

In this step, you edit *Fact – OM Sales Orders* logical star to add a dimension extension on *Dim – OM Sales Order Details* referencing the autonomous data warehouse object *FDI_X_OM_FULFILLMENT_CF_V*. The custom extension is joined to the prebuilt *Dim – OM Sales Order Details* degen dimension using *Fulfill Line ID*.

1. On the Semantic Model Extensions page, click the **MySandbox5Mar25** sandbox.

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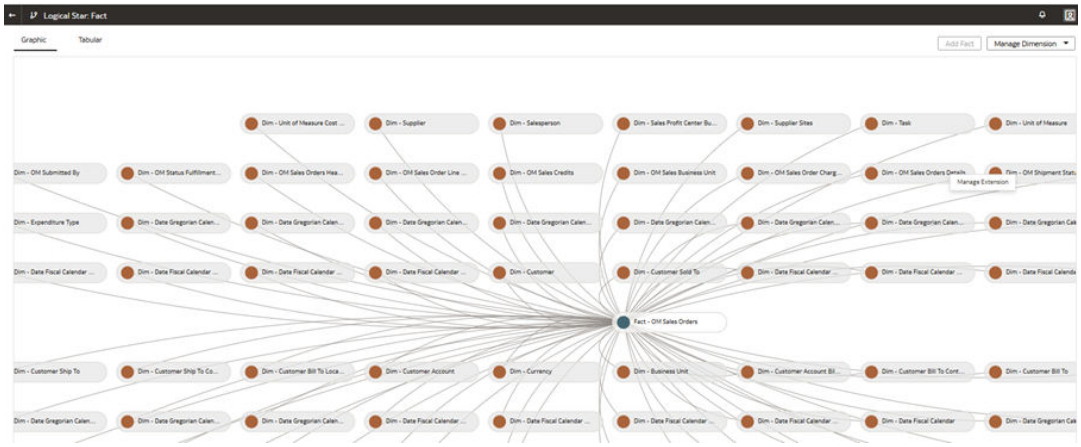
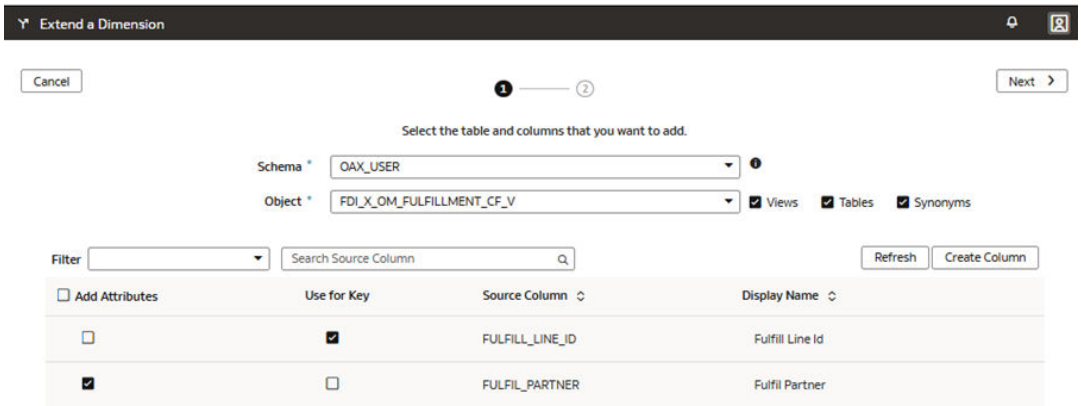
2. In **Perform Action**, click **Manage Logical Star**, then **Edit Logical Star**, then **Out of the box**, then select **SCM - Sales Orders** as the subject area, select **Fact - OM Sales Orders** as the corresponding fact, and then click **Next**.
3. On the Logical Star: Fact page, locate the **Dim - OM Sales Orders Details** dimension table, right-click it, and then click **Manage Extension**.



4. In the **Manage Extension** list of values, select **Extend Dim**.
5. On the Extend a Dimension page, in step 1 of the wizard, select **OAX_USER** in **Schema** and select **FDI_X_OM_FULFILLMENT_CF_V** in **Object**. Select the **Use for Key** checkbox for the **FULFIL_LINE_ID** source column and select the **Add Attributes** checkbox for the **FULFIL_PARTNER** source column. Click **Next**.



6. In step 2 of the wizard, select **Inner** in **Select Join Type**. Select **Order Fulfillment Line Identifier (DOUBLE)** as **Dimension Key** and **FULFILL_LINE_ID (DOUBLE)** as **Extended Dimension Key** to join on the Line Identifier and ID as defined in the FDI_X_OM_FULFILLMENT_CF_V view. Click **Finish**.

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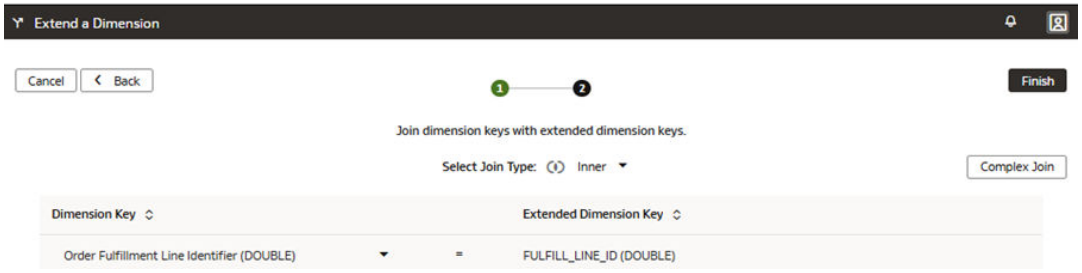

7. Review the extended dimension.



Present the Transaction Details Extension in the Semantic Model

You modify the subject area to present the extended columns in a subject area folder.

In this step, you modify the *SCM – Sales Order* subject area to present the extended *Fulfil Partner* column in the prebuilt *Sales Order Details* folder.

1. Navigate to the **MySandbox5Mar25** sandbox.
2. In the **MySandbox5Mar2025** sandbox, click **Perform Action**, then **Manage Subject Areas**, then **Modify a Subject Area**, select **SCM - Sales Orders** as the subject area, and then click **Next**.
3. In step 1 of the wizard on the Modify a Subject Area – SCM – Sales Orders page, view the details and click **Next**.
4. In step 2 of the wizard, select **Manage Elements**, and then click **Manage Factory Customizations**.

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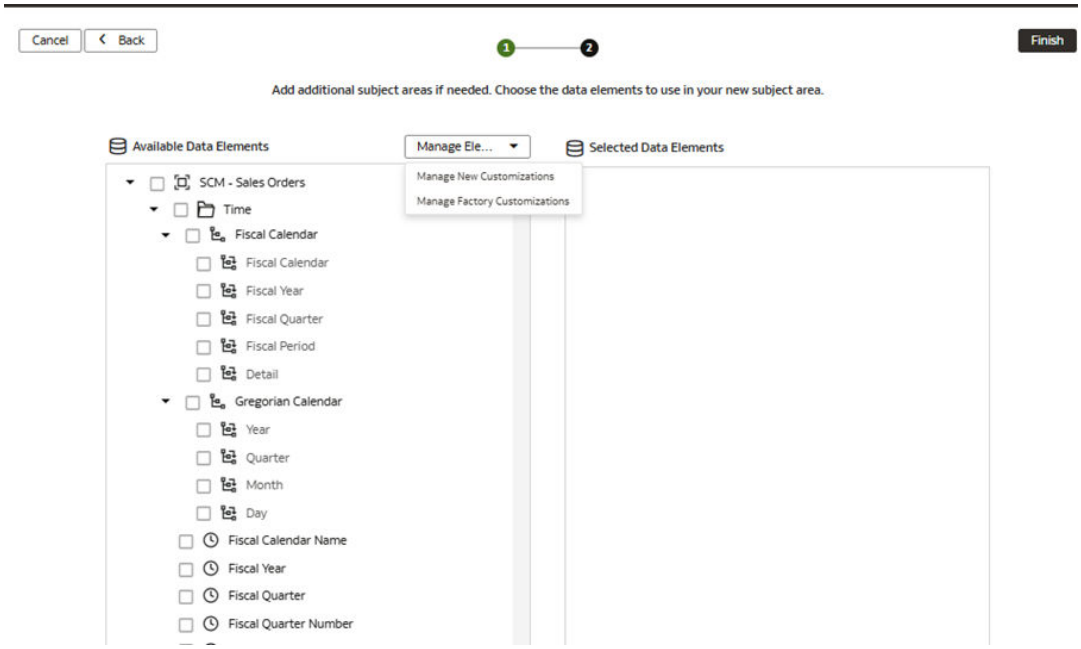
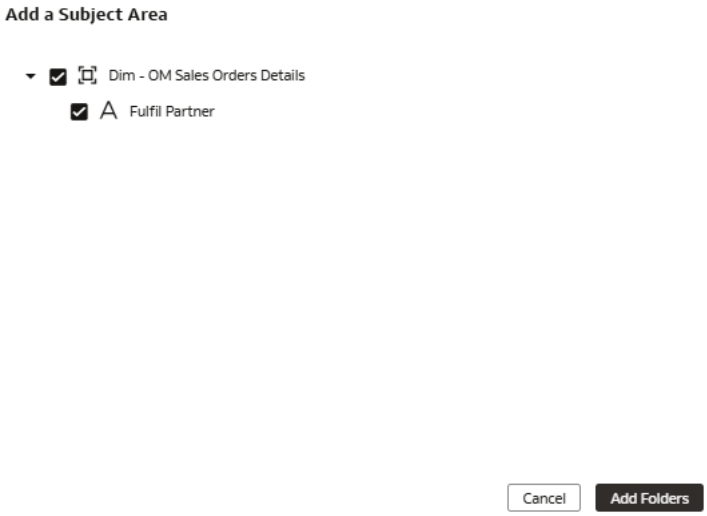


5. In Add a Subject Area, select **Dim – OM Sales Orders Details** dimension and **Fulfil Partner** attribute to extend these to the transaction details and click **Add Folders**.



6. In Add a Subject Area, select **Sales Orders Details** folder and click **Add Folders**.

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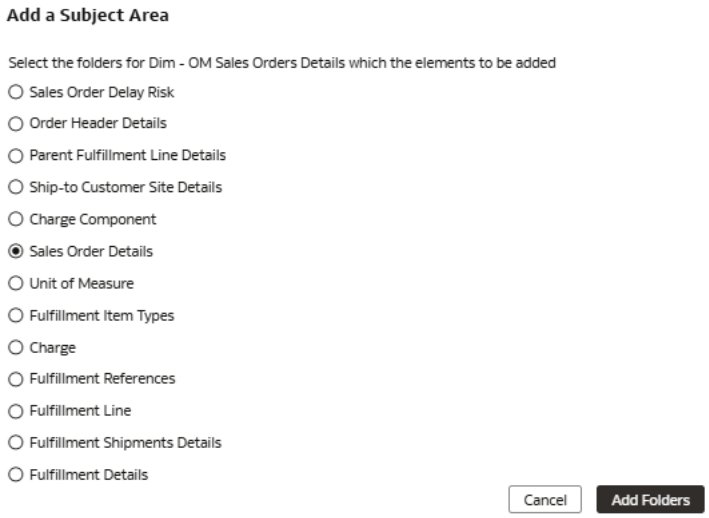
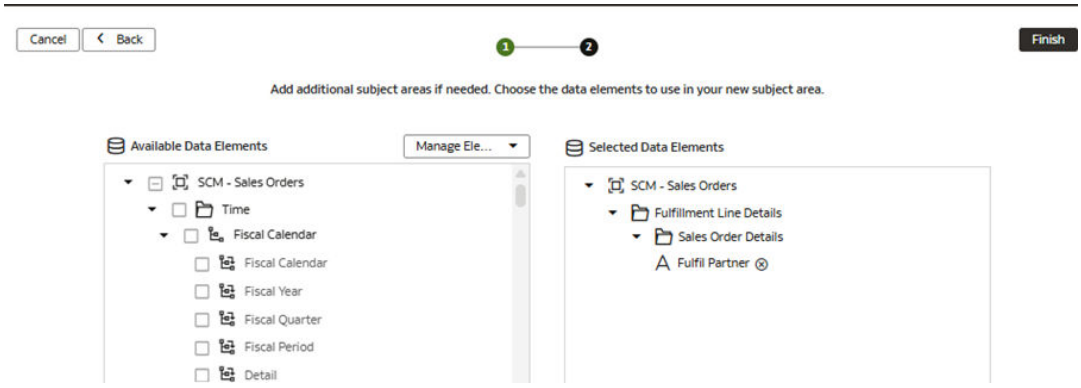


7. Review the additions and click **Finish**.



Apply and Publish the Customizations

You apply the changes to compile the sandbox and ensure that the sandbox is error free.

Then, you use the Activity tab to debug, resolve errors, and confirm that the Apply Changes action completes and is successful. Finally, you merge the changes to the main sandbox and publish the main user extensions to share the new extensions with consumers.

In this step, you apply the changes, use the Activity tab to monitor the status, merge the *MySandbox5Mar25* sandbox to the Main sandbox, and then publish the main user extension.

1. On the Semantic Model Extensions page, hover over the **MySandbox5Mar25** sandbox to view **Actions**, and then click **Apply Changes**.
2. Click the Activity tab to monitor the **Apply Changes** task on the Activity page.
3. After the changes are successfully applied, click **Publish Model** on the Semantic Model Extensions page.
4. In Publish Model, in User Extensions, select **MySandbox5Mar25** and in Security Configurations, select **All**.
5. Click **Publish**.

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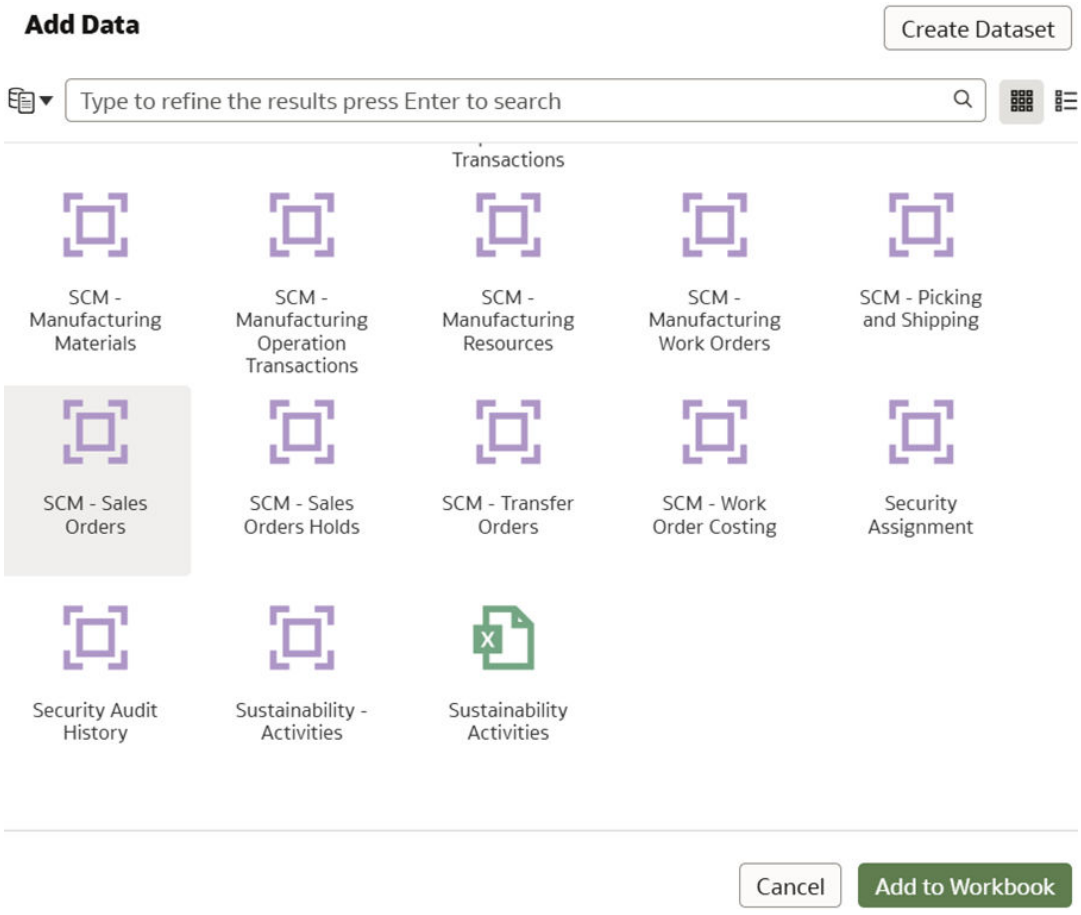
6. On the Semantic Model Extensions page, click the Activity tab to monitor the **Publish Customizations** task.

   See Apply Changes and Publish Model.

Validate the Results

Verify that your customizations are visible in the semantic model.

1. On the Fusion Data Intelligence Console, click **Go to Home Page**.
2. On the Oracle Analytics Home page, click **Create**, click **Workbook**, in **Add Data**, select **SCM – Sales Orders**, the subject area that is extended in this use case, and then click **Add to Workbook**.



3. Expand the **Fulfillment Line Details** folder, then expand the **Sales Order Details** folder, and verify that the new field **Fulfil Partner** is available to use and data remains accurate.

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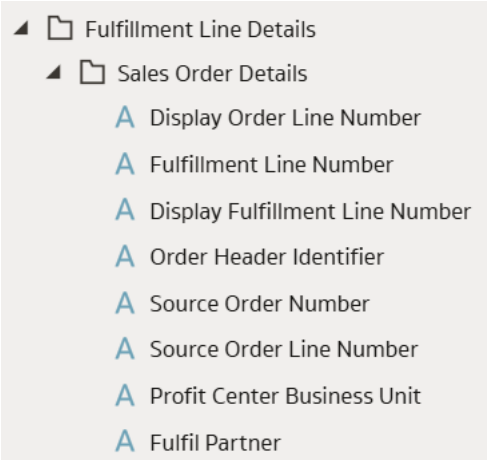
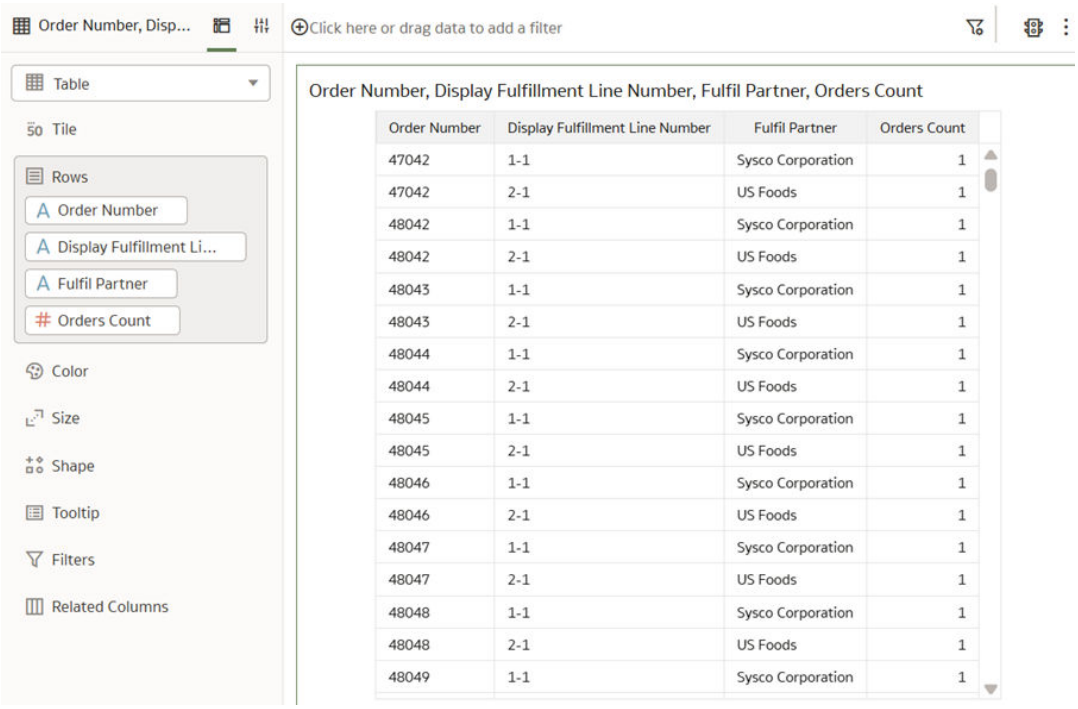


4. Build a workbook that contains the new extended attribute **Fulfil Partner** as well as measure from the **Sales Order Details** folder to validate that the join between the extension and fact table is returning the expected results.



Order Number	Display Fulfillment Line Number	Fulfil Partner	Orders Count
47042	1-1	Sysco Corporation	1
47042	2-1	US Foods	1
48042	1-1	Sysco Corporation	1
48042	2-1	US Foods	1
48043	1-1	Sysco Corporation	1
48043	2-1	US Foods	1
48044	1-1	Sysco Corporation	1
48044	2-1	US Foods	1
48045	1-1	Sysco Corporation	1
48045	2-1	US Foods	1
48046	1-1	Sysco Corporation	1
48046	2-1	US Foods	1
48047	1-1	Sysco Corporation	1
48047	2-1	US Foods	1
48048	1-1	Sysco Corporation	1
48048	2-1	US Foods	1
48049	1-1	Sysco Corporation	1

Use Case 3: Add Custom Dimension to a Prebuilt Fact

You can add a custom dimension folder containing descriptive attributes and join the custom dimension to a prebuilt fact table with defined keys.

The prebuilt *SCM – Sales Order* subject area doesn't contain the required *Custom Item Department* dimension attribute. In this use case, you add a folder *Custom Item Department* to the *SCM – Sales Orders* prebuilt subject area. This folder contains the *Department* attribute. The custom dimension is joined to the prebuilt *Fact – OM Sales Orders* fact using a composite key of *Organization ID* and *Inventory Item ID*.

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This use case requires Fusion SCM Analytics subscription. However, you can apply the concepts covered in this use case to any other Fusion Data Intelligence subscription. The use case may reference Autonomous AI Lakehouse prebuilt tables and synonyms and mock custom database tables and views. If you've activated the specified Fusion Data Intelligence subscription, you may use the samples provided. The recommendation is to substitute the sample objects for your own custom Autonomous AI Lakehouse objects such as custom table, materialized view, view, custom synonym, or data augmentation dataset synonym.

In this task, you:

1. Add a Custom Dimension to the Semantic Model
2. Add Physical Column to a Prebuilt Fact
3. Join the Custom Dimension to the Prebuilt Fact
4. Present the Custom Dimension in the Semantic Model
5. Apply and Publish the Customizations
6. Validate the Results

Use the following to complete this task:

- Attribute - Department
- Subject area - SCM - Sales Orders
- Fact folder - Dim - OM Sales Orders

Ensure that you refer to Upload Samples for the Semantic Model Extensions Use Cases and complete these prerequisites:

1. Create a sandbox titled MySandbox5Mar25. See Create a Sandbox. Or, edit an existing sandbox on the Semantic Model Extensions page; for example, by clicking the MySandbox5Mar25 sandbox.
2. Generate the sample dimension view FDI_X_ITEM_CUSTOM_DEPARTMENT_D_V using this SQL script:

```
CREATE OR REPLACE FORCE EDITIONABLE VIEW
"OAX_USER"."FDI_X_ITEM_CUSTOM_DEPARTMENT_D_V" ("ORG_ITEM_KEY",
"ORGANIZATION_ID", "INVENTORY_ITEM_ID", "DEPARTMENT") DEFAULT COLLATION
"USING_NLS_COMP"  AS
  (
SELECT ORGANIZATION_ID || INVENTORY_ITEM_ID AS ORG_ITEM_KEY,
ORGANIZATION_ID, INVENTORY_ITEM_ID,
CASE SUBSTR(INVENTORY_ITEM_ID,-1,1)
WHEN '1' THEN 'Clothing'
WHEN '2' THEN 'Shoes'
WHEN '3' THEN 'Cosmetics'
WHEN '4' THEN 'Furniture'
WHEN '5' THEN 'Gardening'
WHEN '6' THEN 'Hardware'
WHEN '7' THEN 'Home Appliances'
WHEN '8' THEN 'Houseware'
WHEN '9' THEN 'Paint'
WHEN '0' THEN 'Sporting Goods'
ELSE 'Other'
END DEPARTMENT
FROM OAX$OAC.DW_INVENTORY_ITEM_D
);
```


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3. Grant semantic model access to the FDI_X_ITEM_CUSTOM_DEPARTMENT_D_V view for the OAX$OAC schema using the following SQL script:

```
GRANT SELECT ON "OAX_USER"."FDI_X_ITEM_CUSTOM_DEPARTMENT_D_V" TO "OAX$OAC";
```

4. Validate that the data is loading from the sample as expected using the following SQL script:

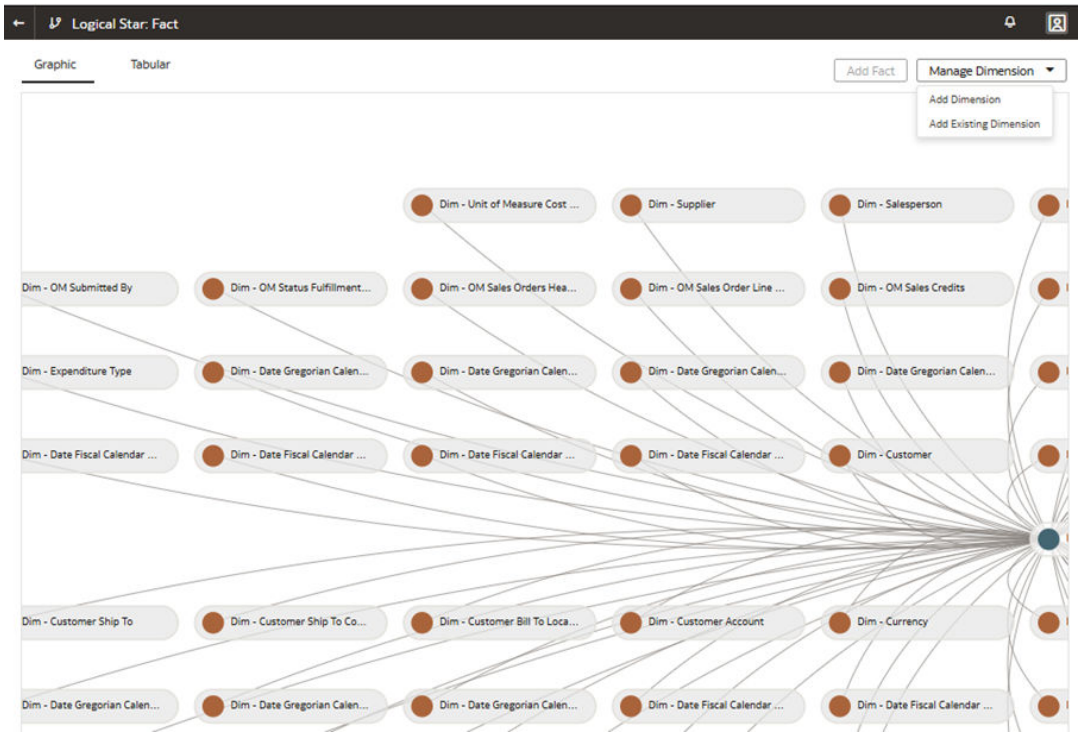
```
SELECT * FROM OAX_USER.FDI_X_ITEM_CUSTOM_DEPARTMENT_D_V;
```

Add a Custom Dimension to the Semantic Model

You edit the logical star to define the autonomous data warehouse object, attributes, display labels, keys, and hierarchy.

In this step, you edit the *Fact – OM Sales Orders* logical star to add a custom dimension *Custom Item Department* referencing the autonomous data warehouse object *FDI_X_ITEM_CUSTOM_DEPARTMENT_D_V*.

1. On the Semantic Model Extensions page, click the **MySandbox5Mar25** sandbox.
2. In **Perform Action**, click **Manage Logical Star**, then **Edit Logical Star**, then **Out of the box**, then select **SCM - Sales Orders** as the subject area, select **Fact - OM Sales Orders** as the corresponding fact, and then click **Next**.
3. On the Logical Star: Fact page, click **Manage Dimension**, and then click **Add Dimension**.



4. In step 1 of the Add a Dimension wizard, select **OAX_USER** in **Schema**, select **FDI_X_ITEM_CUSTOM_DEPARTMENT_D_V** in **Object**, and enter **Custom Item Department** in **Dimension Name**. Select the **Add Attributes** checkbox for **DEPARTMENT** and **ORG_ITEM_KEY**. Select the **Use for Key** checkbox for **INVENTORY_ITEM_ID**, **ORGANIZATION_ID**, and **ORG_ITEM_KEY**. Click **Next**.

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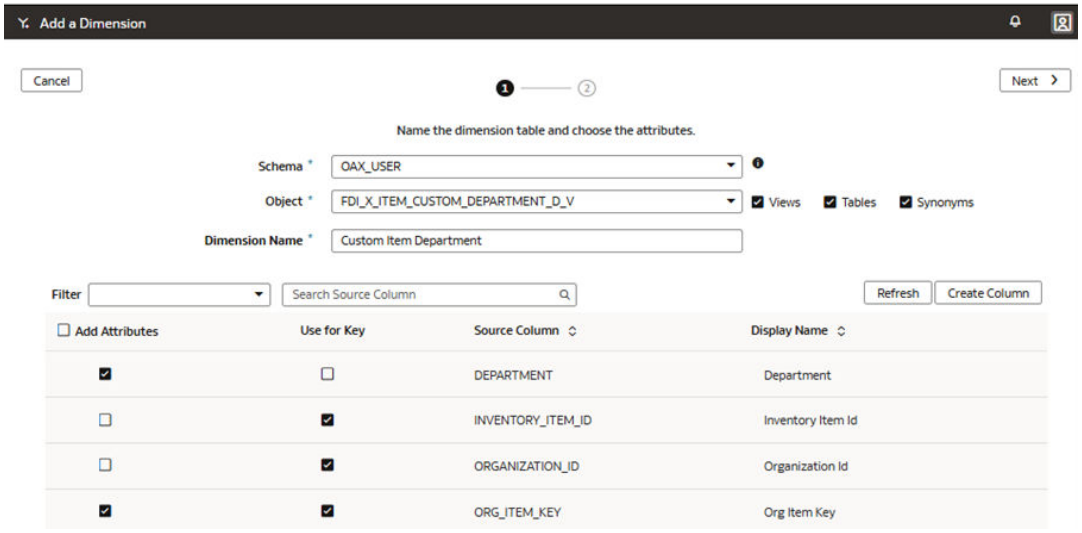
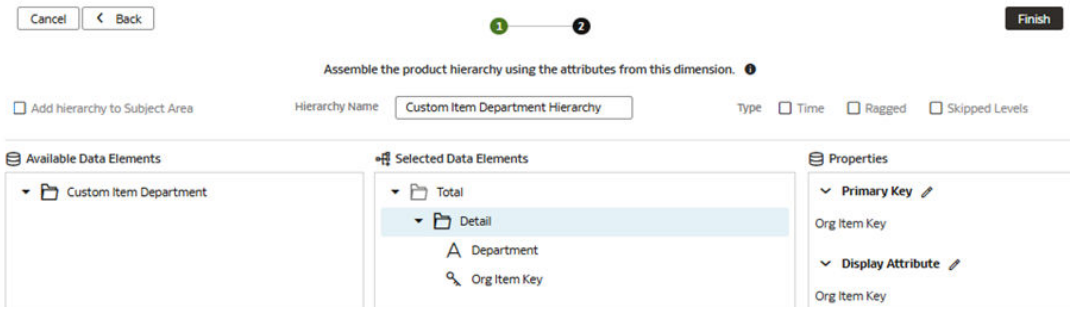


5. In step 2 of the wizard, leave the **Add hierarchy to Subject Area** checkbox unselected to omit a hierarchy. However, it's a requirement to name the hierarchy and map a primary key and display attribute in the logical star, although the hierarchy won't appear in the subject area. Complete this step as follows:
   - Enter `Custom Item Department Hierarchy` in **Hierarchy Name**.
   - In Properties, define the primary key and display attribute as follows:
     - Click the pencil icon for **Primary Key** and select **Org Item Key**.
     - Click the pencil icon for **Display Attribute** and select **Org Item Key**.
   - Under **Selected Data Elements**, from the Available Data Elements, drag and add **Department** and **Org Item Key** to the **Detail** level.

> **Note**
>
> You can add the dimension display attributes to either a level or the Detail level.



6. Click **Finish**. Continue to the next task without exiting the wizard, *Add Physical Column to a Prebuilt Fact*.

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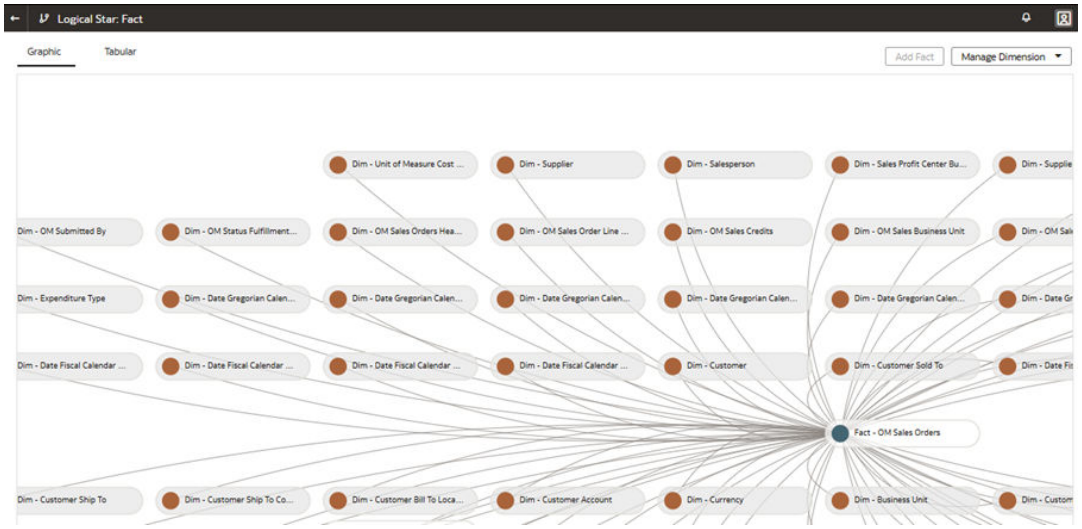
Add Physical Column to a Prebuilt Fact

You extend the prebuilt fact to expose physical columns that you use as keys to join the new custom dimension in the logical star.

In this step, you extend *Fact – OM Sales Orders* to expose physical columns ORGANIZATION_ID and INVENTORY_ITEM_ID to use as keys to join to the new custom dimension *Custom Item Department*. You must provide unique names for the logical columns; for example, ORGANIZATION_ID is given a unique name *UC Organization ID* and INVENTORY_ITEM_ID is given a unique name *UC Inventory Item ID*.

1. On the Logical Star: Fact page, right-click **Fact – OM Sales Orders**, and then click **Manage Extension**.



2. On the Sandbox: MySandbox5Mar25 page, click **Manage Extension** and then click **Add Columns**.



3. On the Add Columns page, click **Add Physical Column**.

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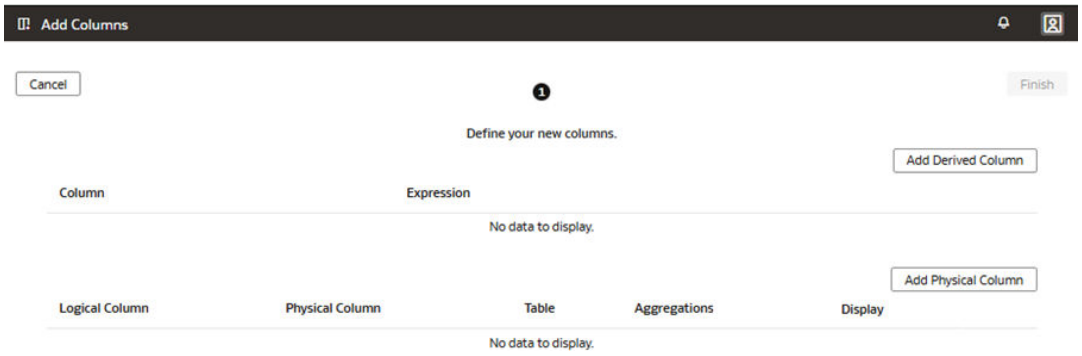
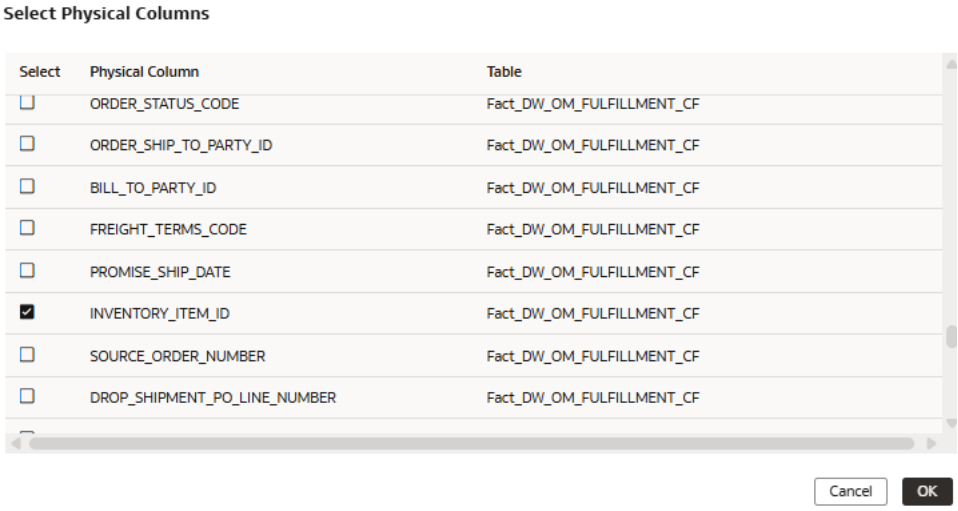


4. In Select Physical Columns, select the checkbox for **ORGANIZATION_ID** and **INVENTORY_ITEM_ID**, and then click **OK**.



> **Note**
>
> These columns come from the Fact_DW_OM_FULFILLMENT_CF table.

5. On the Add Columns page, in Logical Column, enter unique logical column names such as `UC Organization ID` and `UC Inventory Item ID`, and then click **Finish**.

> **Note**
>
> It's very important that the Logical Column Name is unique and doesn't conflict with the prebuilt column name.

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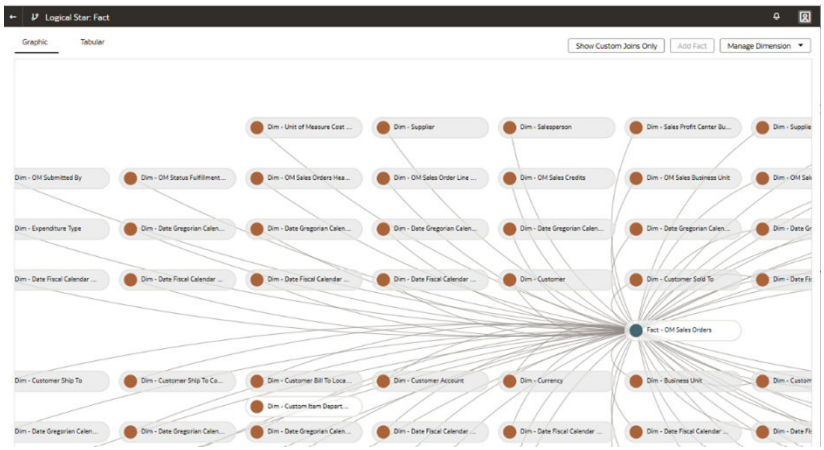
6. Continue to the next task without exiting the wizard, *Join the Custom Dimension to the Prebuilt Fact*.

Join the Custom Dimension to the Prebuilt Fact

You join the custom dimension to the prebuilt fact by defining the join type, join condition, and context level. You can define complex joins; however, the recommendation is to try and use standard joins where possible.

In this step, you define a standard left outer join on the prebuilt *Fact – OM Sales Orders* fact to the custom dimension *Dim – Custom Item Department* using a composite key comprising of *UC Organization ID* and *UC Inventory Item ID* from each table. The Content level is set to *Detail*.

1. On the Logical Star: Fact page, click and drag the custom dimension **Dim – Custom Item Department** circle to the prebuilt fact **Fact – OM Sales Orders** circle in the graphical format to open the Join dialog.



2. In the Join dialog, set **Join Type** as **Left Outer**, set **Content level** to **Detail**, set **Join Condition** as follows and then click **Done**:
   - For **Fact – OM Sales Orders**, select **UC Organization ID (DOUBLE)** and for **Dim – Custom Item Department**, select **Organization Id (DOUBLE)**.
   - For **Fact – OM Sales Orders**, select **UC Inventory Item ID (DOUBLE)** and for **Dim – Custom Item Department**, select **Inventory Item Id (DOUBLE)**.

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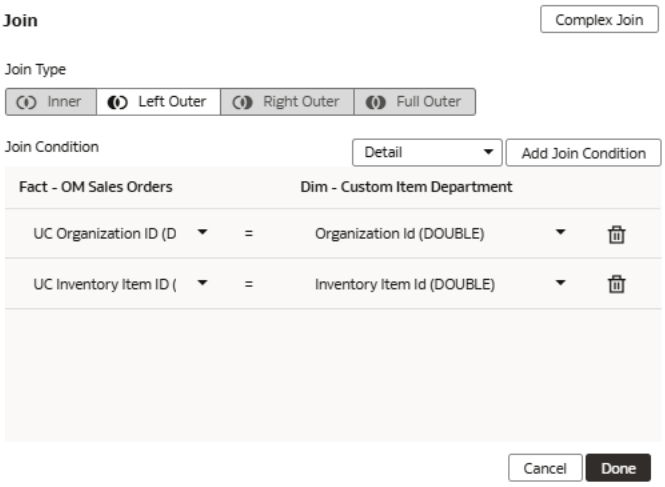
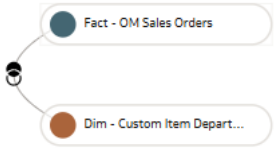
3. Review the custom joins in the tabular format.



4. Review the custom joins in the graphical format.



Present the Custom Dimension in the Semantic Model

You modify the subject area to present the new custom dimension and its attributes. The dimension is represented as a folder containing columns in the subject area.

In this step, you modify the *SCM – Sales Order* subject area to present the new custom dimension folder *Custom Item Department* containing the *Department* attribute column.

1. Navigate back to the **MySandbox5Mar25** sandbox, click **Perform Action**, then **Manage Subject Areas**, and then click **Modify a Subject Area**. Select **SCM – Sales Orders** and click **Next**.
2. On the Modify a Subject Area - SCM - Sales Orders page, review the subject area details in step 1 of the wizard and click **Next**.
3. In step 2 of the wizard, click **Manage Elements** and then click **Manage New Customizations**.

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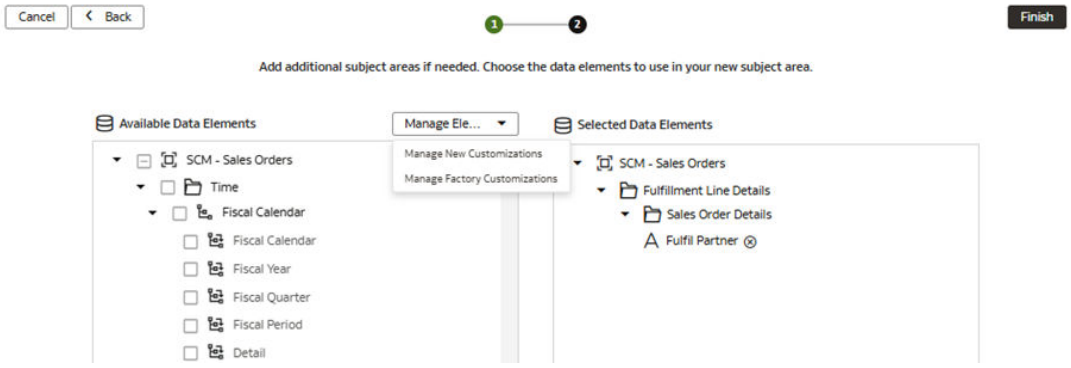
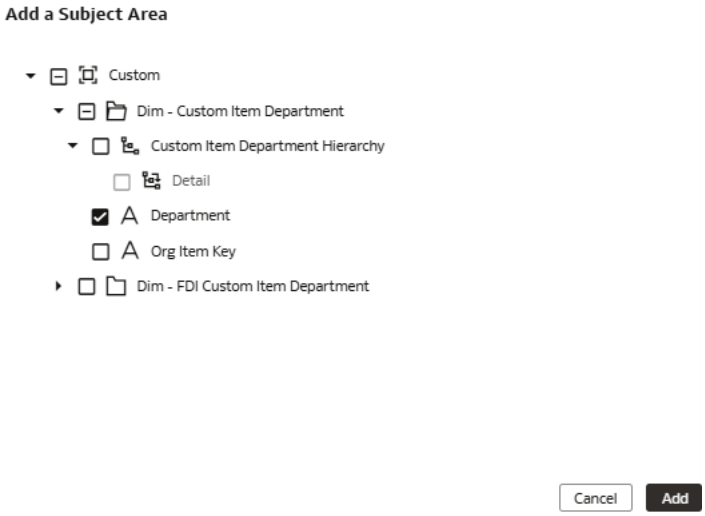
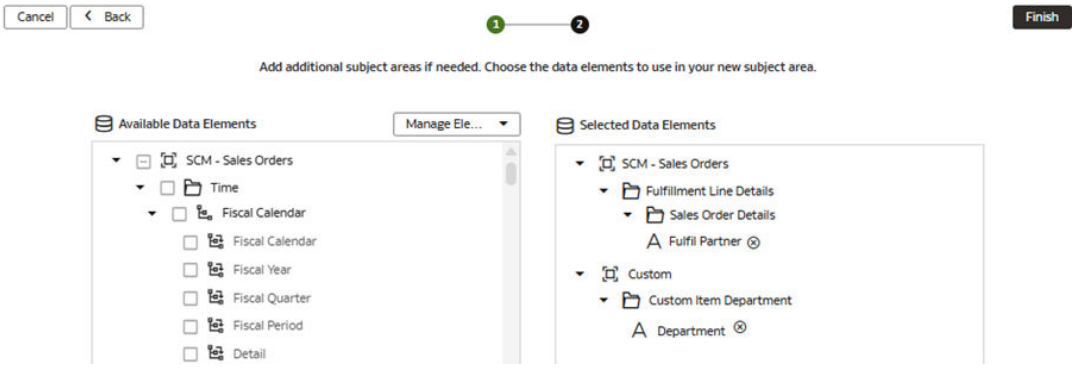


4. In Add Subject Area, under **Custom**, select the **Department** attribute column, and then click **Add**.

   This adds the **Dim - Custom Item Department** folder to the semantic model and places the **Department** column within the folder.



5. Review the selected data elements and click **Finish**.



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Apply and Publish the Customizations

You apply the changes to compile the sandbox and ensure that the sandbox is error free.

Then, you use the Activity tab to debug, resolve errors, and confirm that the Apply Changes action completes and is successful. Finally, you merge the changes to the main sandbox and publish the main user extensions to share the new extensions with consumers.

In this step, you apply the changes, use the Activity tab to monitor the status, merge the *MySandbox5Mar25* sandbox to the Main sandbox, and then publish the main user extension.

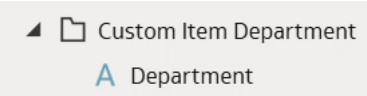
1. On the Semantic Model Extensions page, hover over the **MySandbox5Mar25** sandbox to view **Actions**, and then click **Apply Changes**.
2. Click the Activity tab to monitor the **Apply Changes** task on the Activity page.
3. After the changes are successfully applied, click **Publish Model** on the Semantic Model Extensions page.
4. In Publish Model, in User Extensions, select **MySandbox5Mar25** and in Security Configurations, select **All**.
5. Click **Publish**.
6. On the Semantic Model Extensions page, click the Activity tab to monitor the **Publish Customizations** task.

   See Apply Changes and Publish Model.

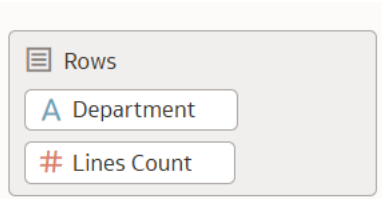
Validate the Results

Verify that your customizations are visible in the semantic model.

1. On the Fusion Data Intelligence Console, click **Go to Home Page**.
2. On the Oracle Analytics Home page, click **Create**, click **Workbook**, in Add Data, select **SCM – Sales Orders**, the subject area that is extended in this use case, and then click **Add to Workbook**.
3. Expand the **Custom Item Department** folder and verify that the **Department** attribute column appears towards the bottom of the subject area by default. Drag the **Department** column onto the workbook.



4. Drag a measure such as **Lines Count** from the **Facts - Sales Orders** folder to confirm that the fact can join to the custom dimension.



5. Verify the results.

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Department, Lines Count

Department	Lines Count
Clothing	716
Cosmetics	213
Furniture	176
Gardening	888
Hardware	525
Home Appliances	694
Houseware	391
Paint	237
Shoes	706
Sporting Goods	490

Use Case 4: Add a Custom Fact

You can add a custom fact containing aggregable metrics and join it to prebuilt dimensions with defined keys.

The prebuilt *SCM – Sales Order* subject area doesn't contain the required *Fact – My Custom* fact metrics. In this use case, you add a folder *Fact – My Custom* to the *SCM – Sales Orders* prebuild subject area. This folder contains a sum aggregation metric labelled *Custom Measure*. The custom fact is joined to three prebuilt dimensions *Dim – Inventory Organization*, *Dim – Inventory Item*, and *Dim – Date Gregorian Calendar* using foreign keys defined in the custom fact.

This use case requires Fusion SCM Analytics subscription. However, you can apply the concepts covered in this use case to any other Fusion Data Intelligence subscription. The use case may reference Autonomous AI Lakehouse prebuilt tables and synonyms and mock custom database tables and views. If you've activated the specified Fusion Data Intelligence subscription, you may use the samples provided. The recommendation is to substitute the sample objects for your own custom Autonomous AI Lakehouse objects such as custom table, materialized view, view, custom synonym, or data augmentation dataset synonym.

In this task, you:

1. Add Custom Fact to the Semantic Model
2. Join Custom Fact to Prebuilt Dimensions
3. Present the Custom Fact in the Semantic Model
4. Apply and Publish the Customizations
5. Validate the Results

Use the following to complete this task:

- Existing dimensions:
  - Dim – Inventory Item
  - Dim – Inventory Organization

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– Dim - Date Gregorian Calendar

Ensure that you refer to Upload Samples for the Semantic Model Extensions Use Cases and complete these prerequisites:

- Create a sandbox titled MySandbox5Mar25. See Create a Sandbox. Or, edit an existing sandbox on the Semantic Model Extensions page; for example, by clicking the MySandbox5Mar25 sandbox.
- Create the sample dimension view titled FDI_X_CUSTOM_FACT_F_V using this SQL script:

```
CREATE OR REPLACE VIEW FDI_X_CUSTOM_FACT_F_V AS
(
SELECT ORDERED_DATE, ORGANIZATION_ID, INVENTORY_ITEM_ID, COUNT(*) AS
CUSTOM_MEASURE
FROM DW_OM_FULFILLMENT_CF
GROUP BY ORDERED_DATE, ORGANIZATION_ID, INVENTORY_ITEM_ID
);
```

- Grant semantic model access to the FDI_X_CUSTOM_FACT_F_V view for the OAX$OAC schema using the following SQL script:

```
GRANT SELECT ON "OAX_USER"."FDI_X_CUSTOM_FACT_F_V" TO "OAX$OAC";
```

- Validate that the data is loading from the sample as expected using the following SQL script:

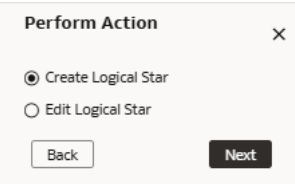
```
SELECT * FROM OAX_USER.FDI_X_CUSTOM_FACT_F_V;
```

Add Custom Fact to the Semantic Model

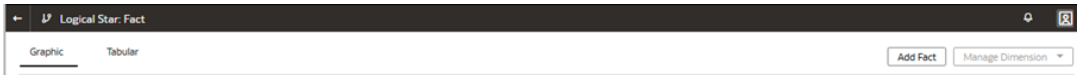
You create a logical star to define the autonomous data warehouse object, fact measure, display labels, keys, aggregation rules, and content levels.

In this step, you create a logical star to define the custom fact, *Fact – My Custom*, that references the autonomous data warehouse object *FDI_X_CUSTOM_FACT_F_V*.

1. On the Semantic Model Extensions page, click the **MySandbox5Mar25** sandbox.
2. In **Perform Action**, click **Manage Logical Star**, then **Create Logical Star**, and then click **Next**.



3. On the Logical Star: Fact page, click **Add Fact**.



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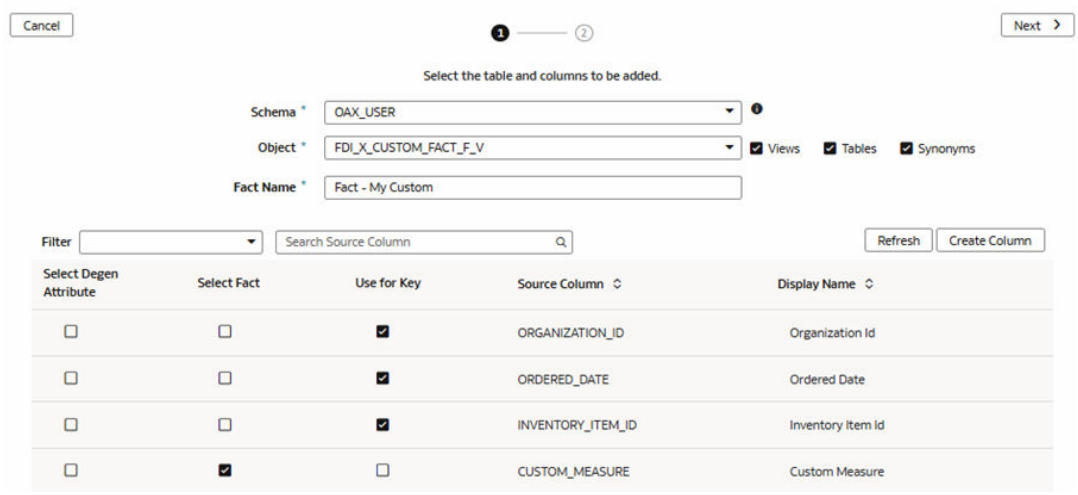
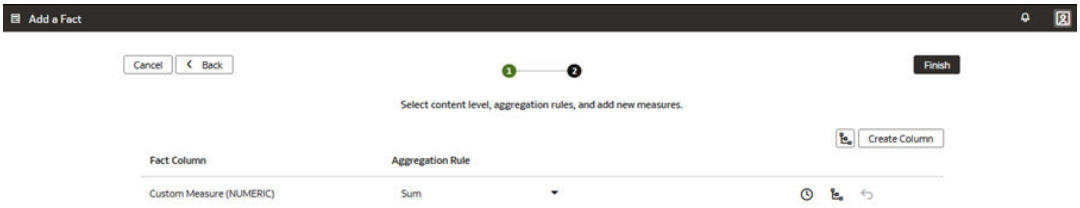
4. On the Add a Fact page, in step 1 of the wizard, select **OAX_USER** in **Schema**, select **FDI_X_CUSTOM_FACT_F_V** in **Object**, rename **Fact Name** as `Fact – My Custom`, select keys (most likely unselect fact for keys), and select attribute as fact as follows:
   - Select the **Use for Key** checkbox for **ORGANIZATION_ID**, **ORDERED_DATE**, **INVENTORY_ITEM_ID** under **Source Column**.
   - Select the **Select Fact** checkbox for **CUSTOM_MEASURE** under **Source Column**.



5. Click **Next**.
6. In step 2 of the wizard, set the **Aggregation Rule** for the **Fact Column** as **Sum**.



7. Click the **Content Level** icon.
8. In Content Level, click **Add Dimension** to add these dimensions, set the level as suggested in the table, click **OK**, and then click **Finish**:

Dimension	Level
Inventory Organization	Detail
Inventory Item	Detail
Gregorian Calendar	Day

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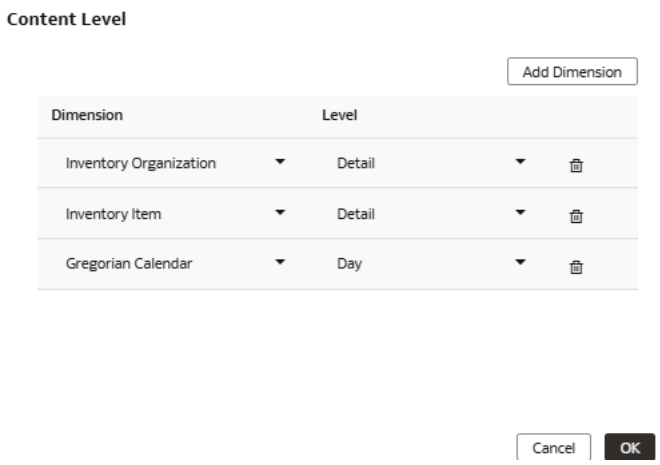


Join Custom Fact to Prebuilt Dimensions

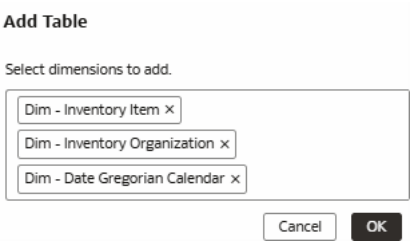
You add prebuilt dimensions and join them to the custom fact using foreign keys defined in the custom fact.

In this step, you add three prebuilt dimensions, *Dim – Inventory Organization*, *Dim – Inventory Item*, and *Dim – Date Gregorian Calendar*, and join them to the custom fact *Fact – My Custom* using foreign keys ORGANIZATION_ID, ORDER_DATE, INVENTORY_ITEM_ID defined in the custom fact.

1. On the Logical Star: Fact page, click **Manage Dimension**, and then click **Add Existing Dimension**.



2. In Add Table, search and add these three existing dimensions, and then click **OK**:
   - Dim – Inventory Item
   - Dim – Inventory Organization
   - Dim - Date Gregorian Calendar



3. Review the additions in the graphical mode.

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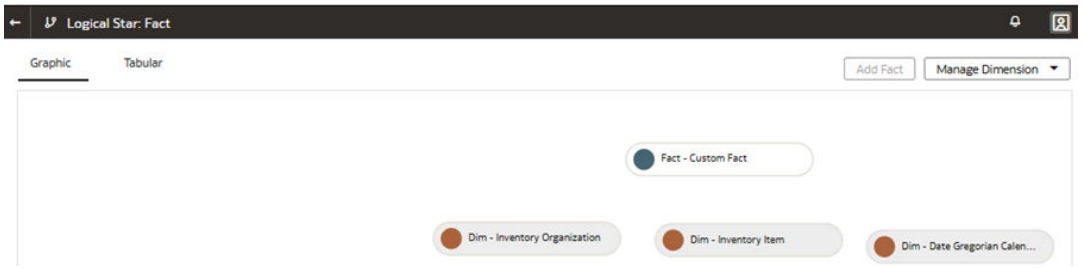
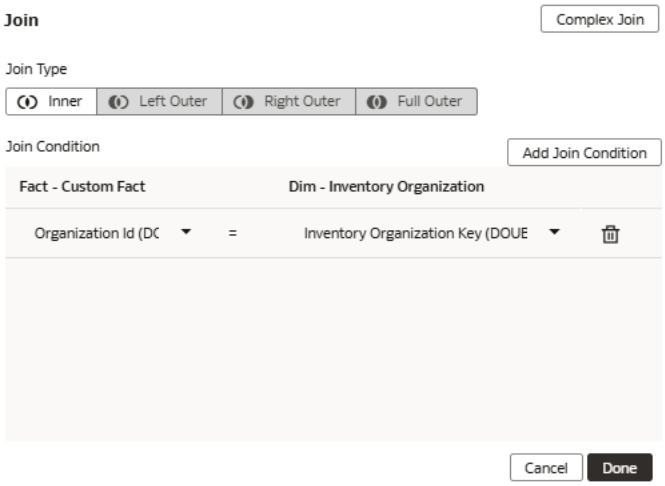
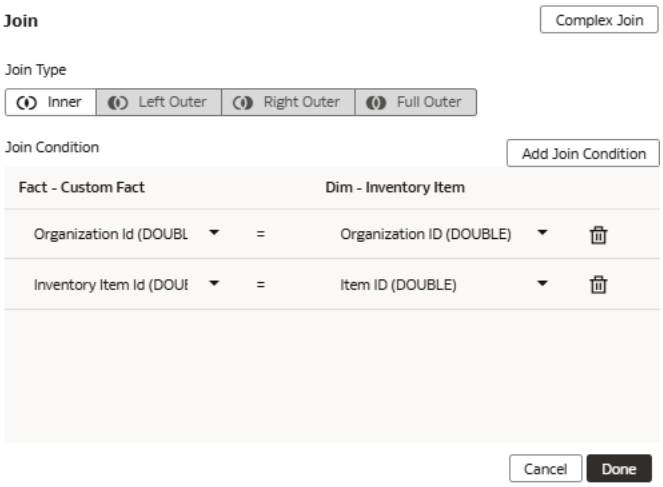


4. Join each of the prebuilt dimensions (**Dim – Inventory Organization**, **Dim – Inventory Item**, and **Dim – Date Gregorian Calendar**) to the custom fact (**Fact – Custom Fact**) by dragging from the dimension circle to the fact circle to open the Join dialog. In Join, specify the **Join Type** as **Inner**, click **Add Join Condition**, add join conditions as follows, and click **Done** after adding all applicable join conditions:

   - For **Fact – Custom Fact**, select **Organization Id (DOUBLE)** and for **Dim – Inventory Organization**, select **Inventory Organization Key (DOUBLE)**.



   - For **Fact – Custom Fact**, select **Organization Id (DOUBLE)** and for **Dim – Inventory Item**, select **Organization ID (DOUBLE)**. For **Inventory Item Id (DOUBLE)** custom fact, select the **Item ID (DOUBLE)** dimension.



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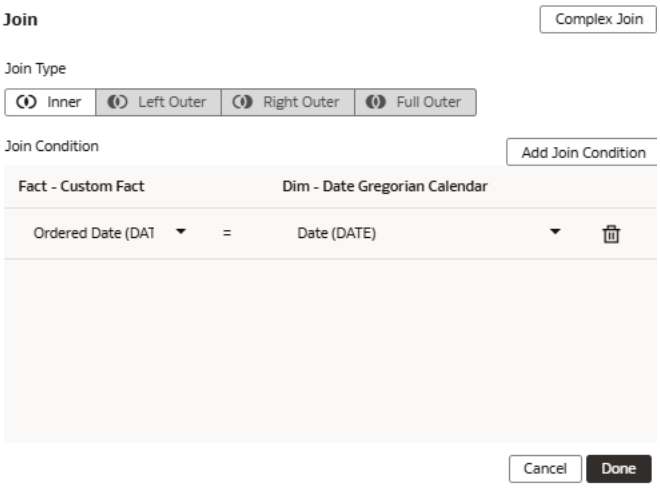
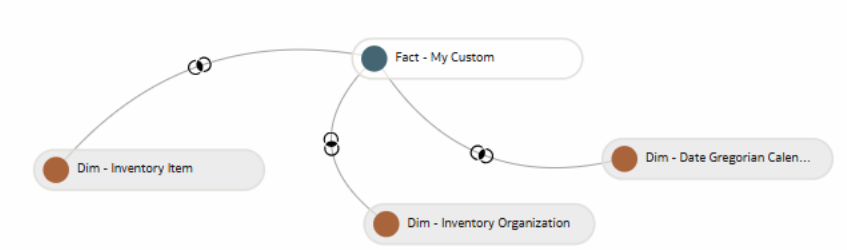
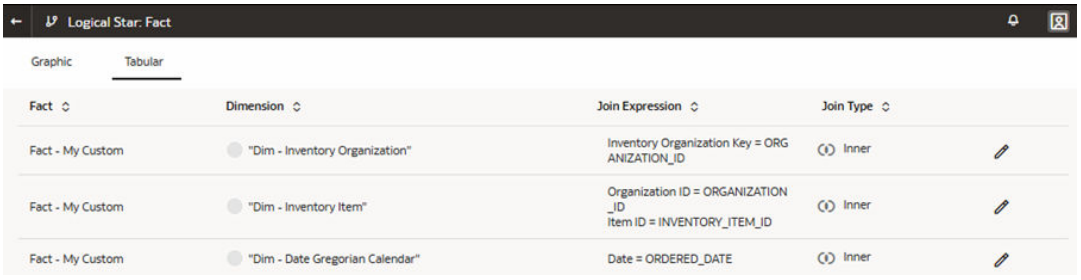
- For **Fact – Custom Fact**, select **Ordered Date (DATE)** and for **Dim – Date Gregorian Calendar**, select **Date (DATE)**.



5. Review the joins in the graphical mode.



6. Review the joins in the tabular mode.



Present the Custom Fact in the Semantic Model

You modify the subject area to present the new custom fact and its aggregable metrics. The system presents the custom fact as a folder containing measure columns in the subject area.

In this step, you modify the *SCM – Sales Order* subject area to present the new fact folder *Fact – My Custom* containing the *Custom Measure* measure column.

1. On the Semantic Model Extensions page, navigate to **MySandbox5Mar25** sandbox, click **Perform Action**, click **Manage Subject Areas**, select **Create a Subject Area**, and then click **Next**.

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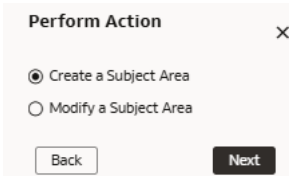
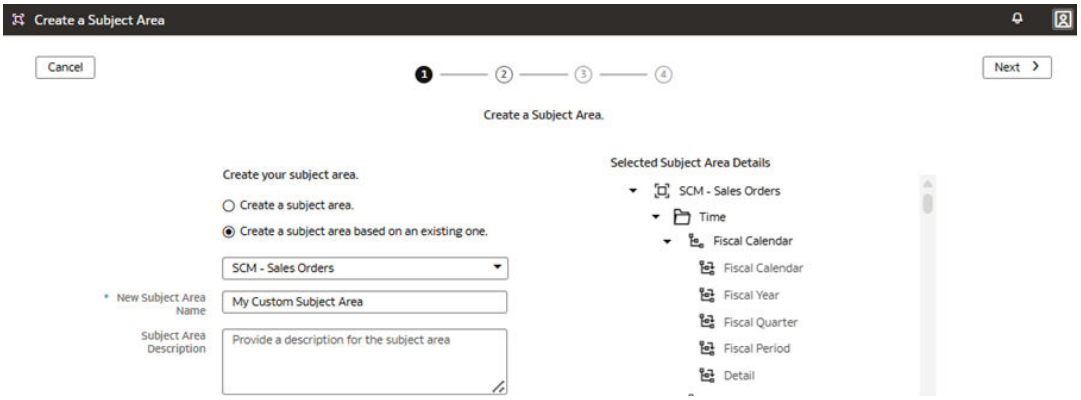
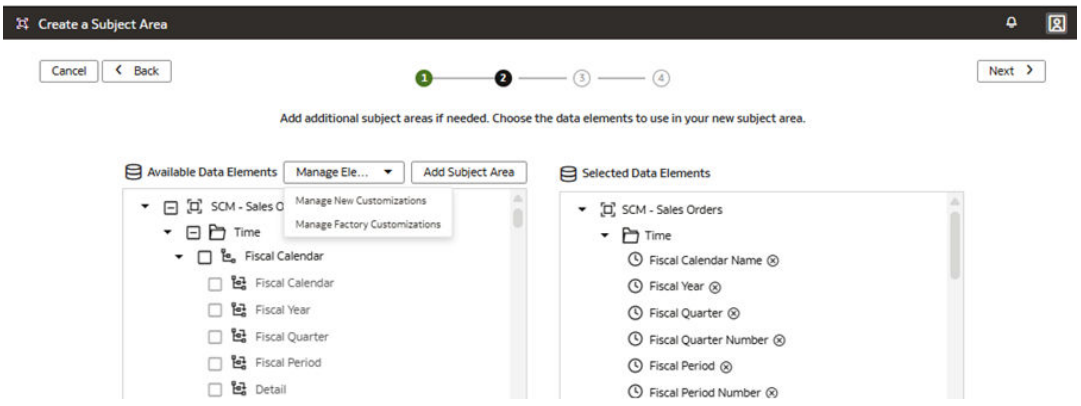
> **Note**
>
> You can either create a subject area or modify an existing subject area; this use case creates a subject area.



2. On the Create a Subject Area page, in step 1 of the wizard, select **Create a subject area based on an existing one**, select **SCM – Sales Orders**, enter `My Custom Subject Area` in **New Subject Area Name**, and then click **Next**.



3. In step 2 of the wizard, click **Manage Elements**, then click **Manage New Customizations**.



4. In Add a Subject Area, select **Custom Measure** from **Fact – My Custom** and click **Add**.

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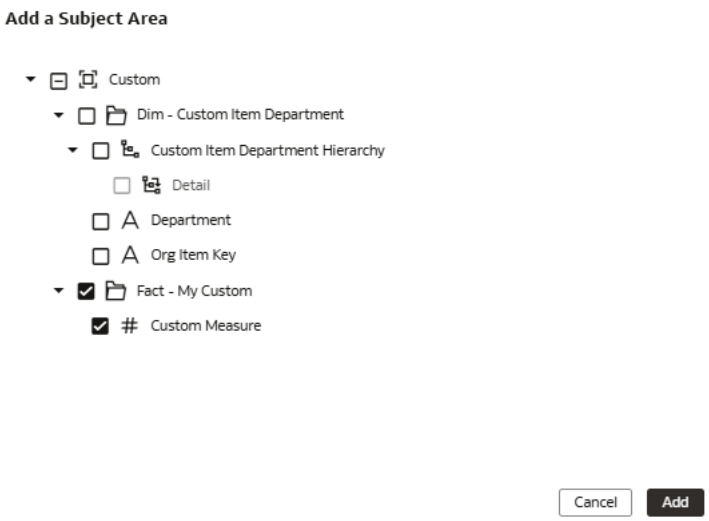
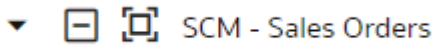


5. Unselect everything under **Available Data Elements** for SCM - Sales Order subject area.



6. Select the prebuilt dimensions that you joined to the custom fact in the logical star and click **Next**.

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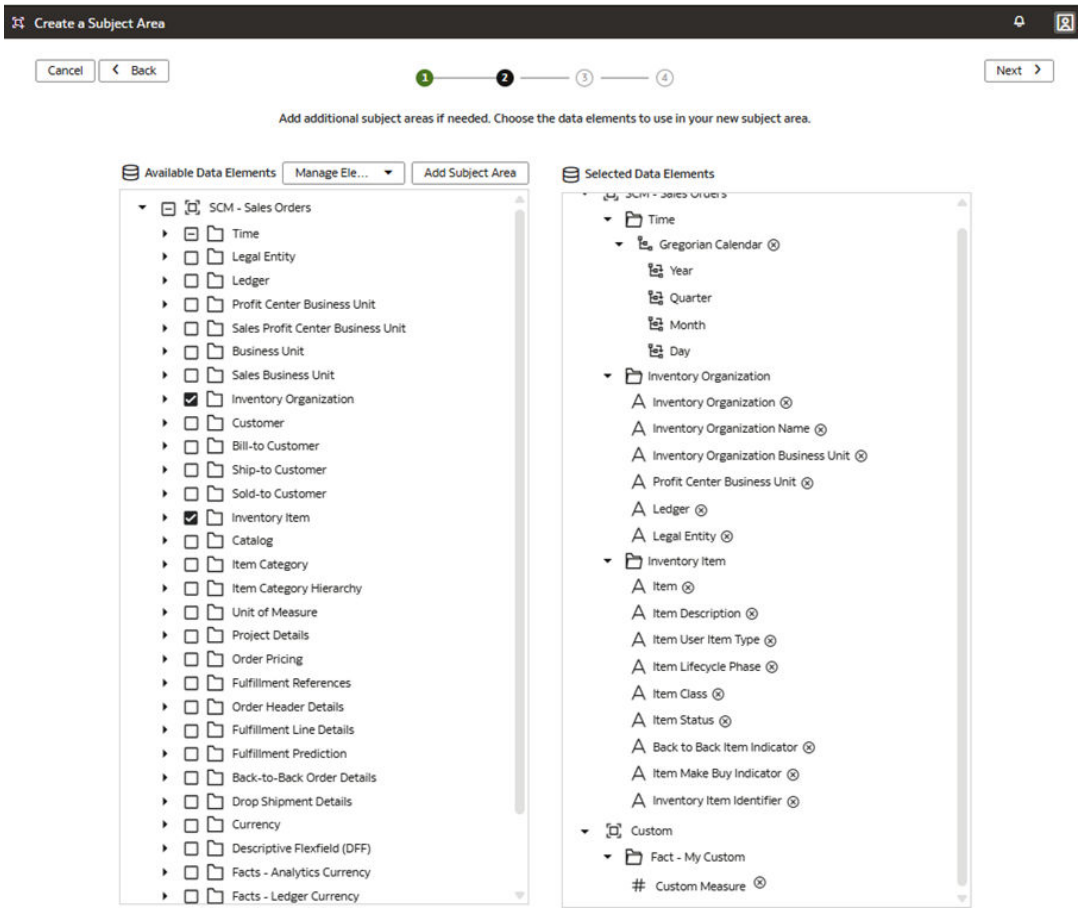
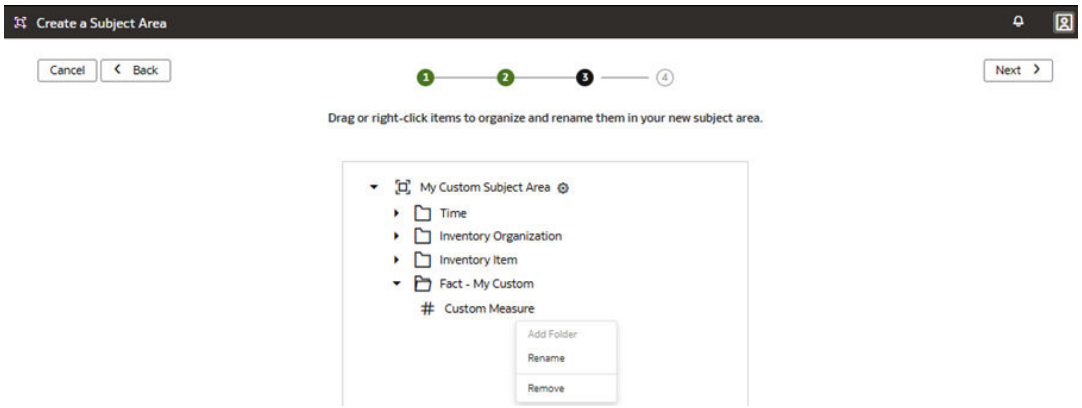


7. In step 3 of the wizard, review how it will appear in the model, rename **Custom Measure** as **My Count**, and click **Next**.



8. Review the custom subject area and click **Next**.

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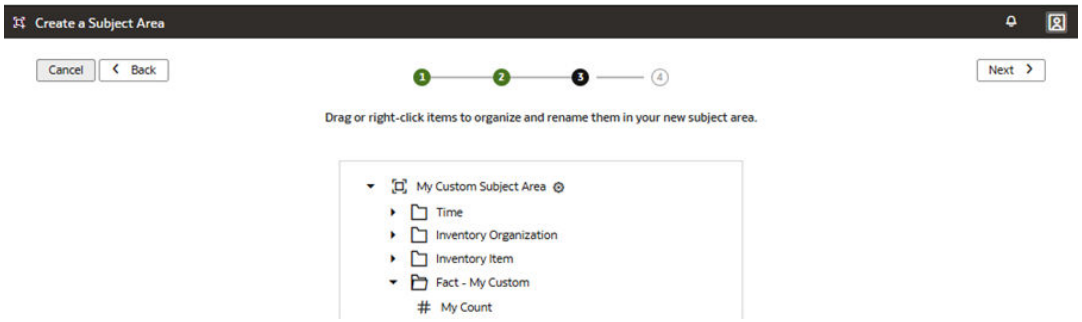
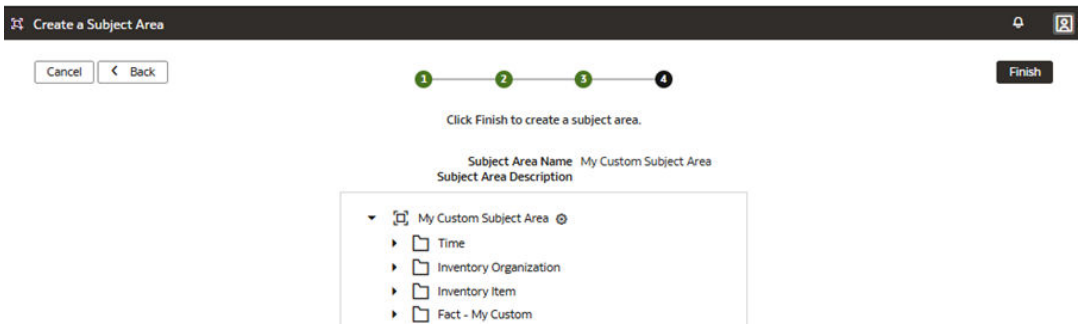


9. In step 4 of the wizard, click **Finish**.



Apply and Publish the Customizations

You apply the changes to compile the sandbox and ensure that the sandbox is error free.

Then, you use the Activity tab to debug, resolve errors, and confirm that the Apply Changes action completes and is successful. Finally, you merge the changes to the main sandbox and publish the main user extensions to share the new extensions with consumers.

In this step, you apply the changes, use the Activity tab to monitor the status, merge the *MySandbox5Mar25* sandbox to the Main sandbox, and then publish the main user extension.

1. On the Semantic Model Extensions page, hover over the **MySandbox5Mar25** sandbox to view **Actions**, and then click **Apply Changes**.
2. Click the Activity tab to monitor the **Apply Changes** task on the Activity page.
3. After the changes are successfully applied, click **Publish Model** on the Semantic Model Extensions page.
4. In Publish Model, in User Extensions, select **MySandbox5Mar25** and in Security Configurations, select **All**.
5. Click **Publish**.
6. On the Semantic Model Extensions page, click the Activity tab to monitor the **Publish Customizations** task.

   See Apply Changes and Publish Model.

Validate the Results

Verify that your customizations are visible in the semantic model.

1. On the Fusion Data Intelligence Console, click **Go to Home Page**.

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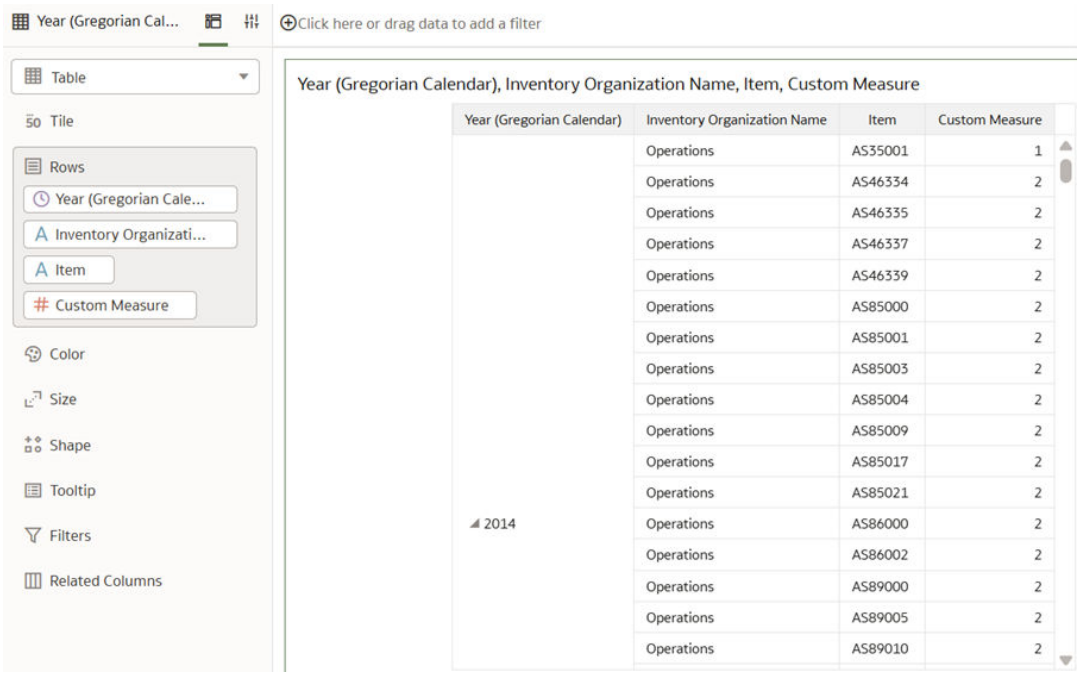
2. On the Oracle Analytics Home page, click **Create**, click **Workbook**, in Add Data, select **My Custom Subject Area**, and then click **Add to Workbook**.
3. Build a report that pulls one column from each of the prebuilt dimensions and the custom measure from the custom fact, **Fact - My Custom**. Ensure that no duplication occurs as you add columns from each dimension columns. This report confirms that the selected prebuilt dimensions can be joined successfully to the custom fact measure.



Use Case 5: Add a Degen Custom Fact

You can add a degenerate (degen) custom fact containing both aggregable metrics and descriptive attributes and join the degen custom fact to a prebuilt dimension with a defined key.

The prebuilt *SCM – Sales Order* subject area doesn't contain the required *Fact – Holiday Calendar* metrics and *Dim – Fact – Holiday Calendar – degendim* attributes. In this use case, you add the *Fact – Holiday Calendar* and *Dim – Fact – Holiday Calendar – degendim* folders to the *SCM – Sales Orders* prebuilt subject area. The *Fact – Holiday Calendar* folder contains aggregable metrics. The *Dim – Fact – Holiday Calendar – degendim* folder contains descriptive attributes. The degen custom fact is joined to the prebuilt *Dim – Data Gregorian Calendar* using the Date key.

This use case requires Fusion SCM Analytics subscription. However, you can apply the concepts covered in this use case to any other Fusion Data Intelligence subscription. The use case may reference Autonomous AI Lakehouse prebuilt tables and synonyms and mock custom database tables and views. If you've activated the specified Fusion Data Intelligence subscription, you may use the samples provided. The recommendation is to substitute the sample objects for your own custom Autonomous AI Lakehouse objects such as custom table, materialized view, view, custom synonym, or data augmentation dataset synonym.

In this task, you:

1. Add Fact with Degen Attributes to the Semantic Model
2. Join Custom Fact with Degen Attributes to a Prebuilt Dimension

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3. Present the Custom Fact with the Degen Attributes in the Semantic Model
4. Apply and Publish the Customizations
5. Validate the Results

Use the following to complete this task:

- SCM – Sales Orders prebuilt subject area

Ensure that you refer to Upload Samples for the Semantic Model Extensions Use Cases and complete these prerequisites:

- Create a sandbox titled MySandbox5Mar25. See Create a Sandbox. Or, edit an existing sandbox on the Semantic Model Extensions page; for example, by clicking the MySandbox5Mar25 sandbox.
- Create the holiday dimension table, FDI_X_HOLIDAY_CALENDAR_D, in the autonomous data warehouse associated with your Fusion Data Intelligence instance using the sample files FDI_X_HOLIDAY_CALENDAR_D.xls or FDI_X_HOLIDAY_CALENDAR_D.sql.
- Create the sample dimension view FDI_X_HOLIDAY_CALENDAR_F_V using this SQL script:

```
CREATE OR REPLACE FORCE EDITIONABLE VIEW
"OAX_USER"."FDI_X_HOLIDAY_CALENDAR_F_V" ("CALENDAR_DATE", "HOLIDAY",
"BUSINESS_DAY", "TODATE_BUSINESS_DAYS", "MONTH_BUSINESS_DAYS") DEFAULT
COLLATION "USING_NLS_COMP"  AS
  (
  SELECT
  CALENDAR_DATE,
  HOLIDAY,
  BUSINESS_DAY,
  SUM(BUSINESS_DAY) OVER (PARTITION BY TO_CHAR(CALENDAR_DATE,'MM-YYYY')
ORDER BY CALENDAR_DATE) AS TODATE_BUSINESS_DAYS,
  SUM(BUSINESS_DAY) OVER (PARTITION BY TO_CHAR(CALENDAR_DATE,'MM-YYYY'))
AS MONTH_BUSINESS_DAYS
  FROM
  (
  SELECT
  d.CALENDAR_DATE,
  d.DAY_LOCALE_NAME,
  c.HOLIDAY,
  CASE WHEN DAY_LOCALE_NAME NOT IN ('Saturday','Sunday') AND HOLIDAY IS
NULL THEN 1 ELSE 0 END AS BUSINESS_DAY
  FROM DW_DAY_D d
  LEFT JOIN
  FDI_X_HOLIDAY_CALENDAR_D c
  ON c.COL_DATE = d.CALENDAR_DATE
  )
  );
```

- Grant semantic model access to the FDI_X_HOLIDAY_CALENDAR_F_V view for the OAX$OAC schema using the following SQL script:

```
GRANT SELECT ON "OAX_USER"."FDI_X_HOLIDAY_CALENDAR_F_V" TO "OAX$OAC";
```


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- Validate that the data is loading from the sample as expected using the following SQL script:

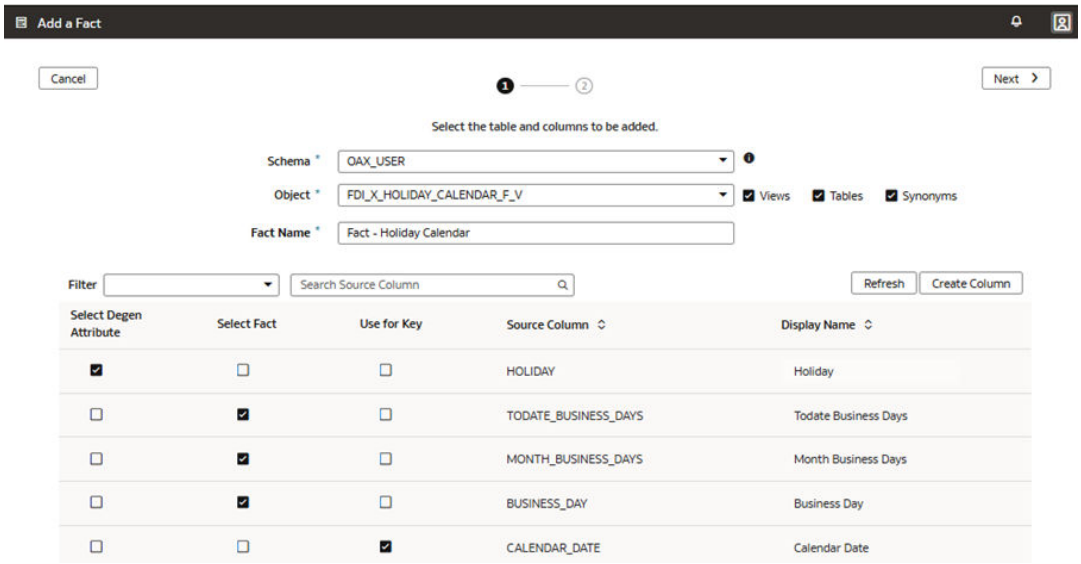
```
SELECT * FROM FDI_X_HOLIDAY_CALENDAR_F_V
WHERE HOLIDAY IS NOT NULL;
```

Add Fact with Degen Attributes to the Semantic Model

You create a logical star to define the autonomous data warehouse object, degen attributes, fact measures, display labels, keys, aggregation rules, and content levels.

In this step, you create a logical star to define the custom fact, *Fact – Holiday Calendar*, and implicitly create *Dim – Fact – Holiday Calendar – degendim*. This custom fact references the autonomous data warehouse object *FDI_X_HOLIDAY_CALENDAR_F_V*.

1. On the Semantic Model Extensions page, click the **MySandbox5Mar25** sandbox.
2. In **Perform Action**, click **Manage Logical Star**, then **Create Logical Star**, and then click **Next**.
3. On the Logical Star: Fact page, click **Add Fact**.
4. On the Add a Fact page, in step 1 of the wizard, select **OAX_USER** in **Schema**, select **FDI_X_HOLIDAY_CALENDAR_F_V** in **Object**, rename **Fact Name** as `Fact – Holiday Calendar`. Select the applicable checkbox as follows and click **Next**.
   - **Select Degen Attribute** – HOLIDAY
   - **Select Fact** – TODATE_BUSINESS_DAYS, MONTH_BUSINESS_DAYS, and BUSINESS_DAY.
   - **Use for Key** – CALENDAR_DATE



5. In step 2 of the wizard, set the aggregation rules as follows:

Fact Column	Aggregation Rule
Todate Business Days (NUMERIC)	Max
Month Business Days (NUMERIC)	Average

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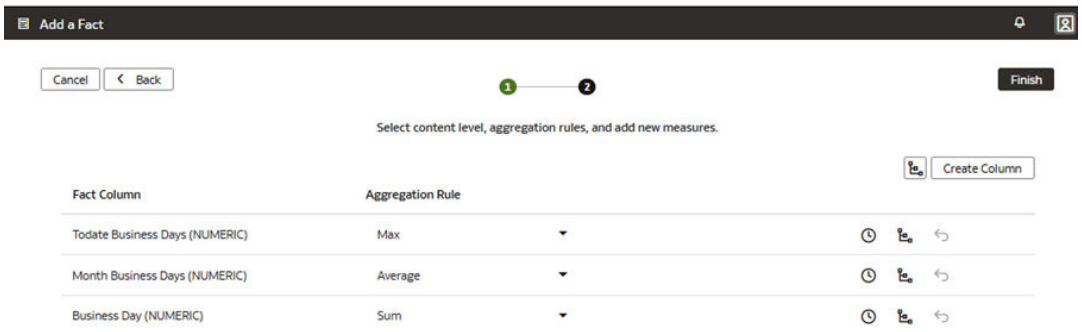
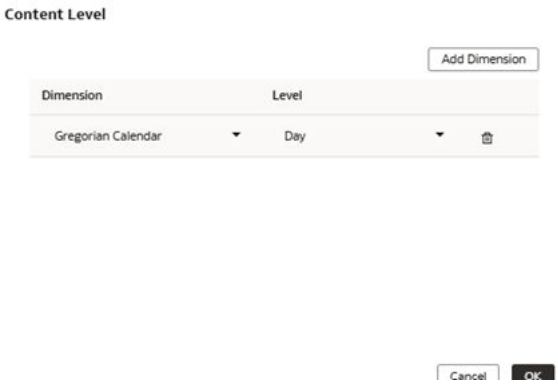
Fact Column	Aggregation Rule
Business Day (NUMERIC)	Sum



6. Click the **Content Level** icon, set the content level as follows, click **OK**, and then click **Finish**.

Dimension	Level
Gregorian Calendar	Day

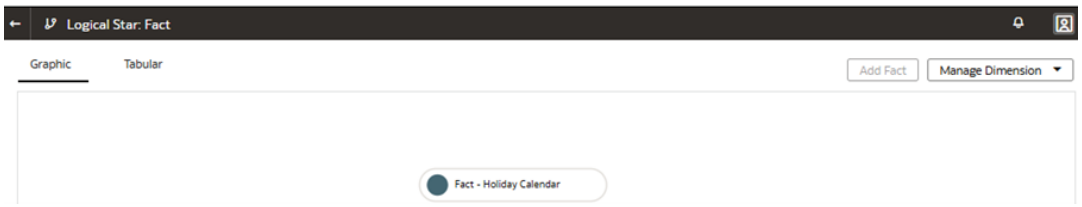


Join Custom Fact with Degen Attributes to a Prebuilt Dimension

You add prebuilt dimensions and join them to the custom degen fact using foreign keys defined in the custom degen fact.

In this step, you add the prebuilt dimension, *Dim – Data Gregorian Calendar*, and join it to the custom degen fact *Dim – Fact – Holiday Calendar* using the foreign key CALENDAR_DATE defined in the custom degen fact.

1. On the Logical Star: Fact page, click **Manage Dimension**.



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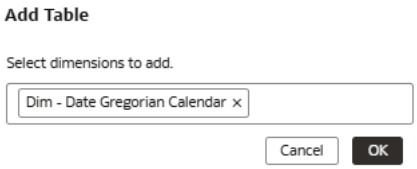
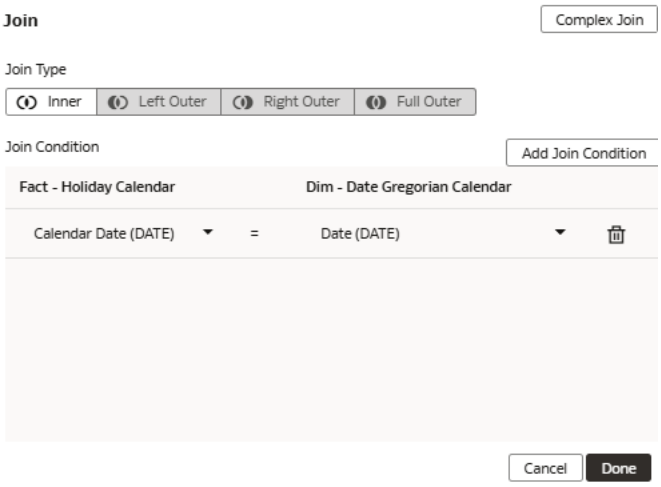
2. From the **Manage Dimension** list of values, click **Add Existing Dimension**, and in Add Table, select **Dim – Date Gregorian Calendar** and click **OK**.

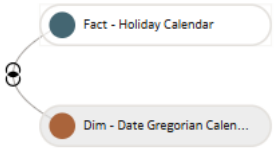


3. On the Logical Star: Fact page, drag from the custom fact (**Fact - Holiday Calendar**) circle to the custom dimension (**Dim - Date Gregorian Calendar**) circle to open the Join dialog. In Join, select **Inner** as **Join Type**, click **Add Join Condition** to add as follows, and then click **Done**:

Fact – Holiday Calendar	Dim – Date Gregorian Calendar
Calendar Date (DATE)	Date (DATE)



4. Review the join in the graphical mode.



5. Click the back arrow on the Logical Star: Fact page to navigate back to the Sandbox: MySandbox5Mar2025 page.

Present the Custom Fact with the Degen Attributes in the Semantic Model

You modify the subject area to present the new custom degen fact and its aggregable metrics, along with the degen dimension and its attributes. The system presents the degen fact as a

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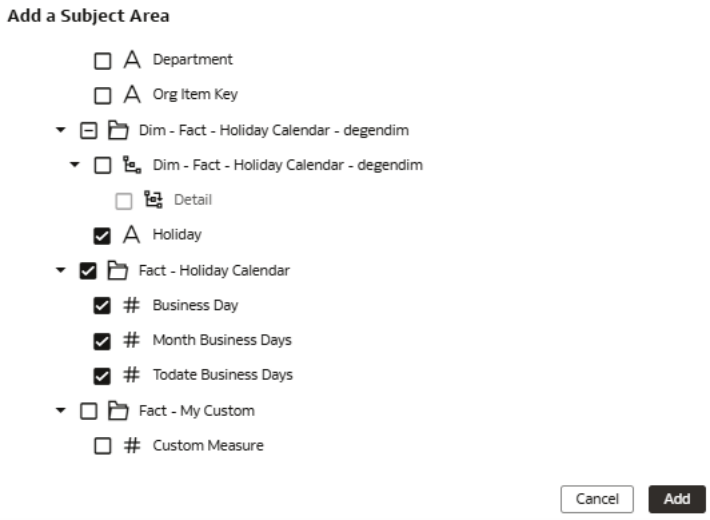
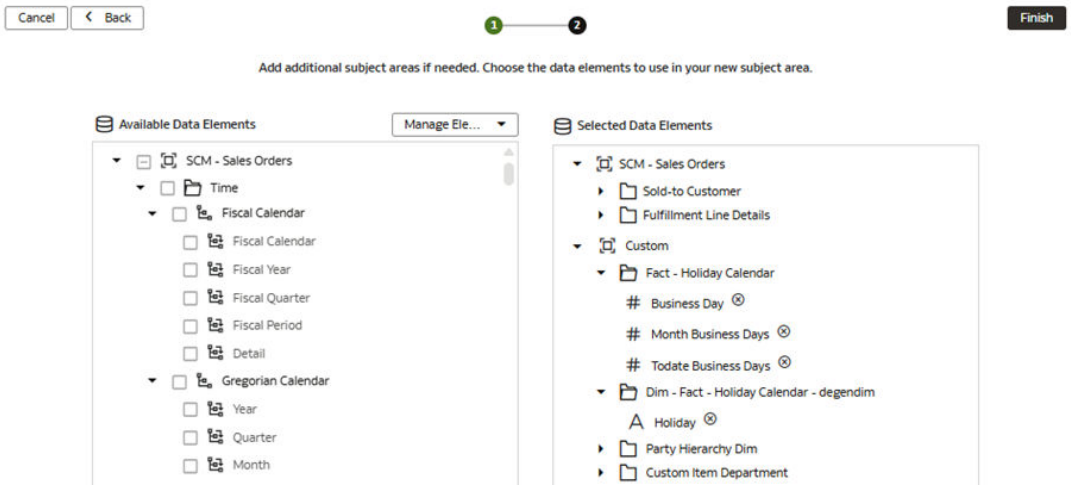
folder containing the measure columns and the degen dimension as a separate folder containing the attribute columns.

In this step, you modify the *SCM – Sales Order* subject area to present the new degen fact folder *Fact – Holiday Calendar* containing three measures, *Business Day*, *Month Business Days*, and *Todate Business Days*, along with the new degen dim folder *Dim – Fact – Holiday Calendar – degendim* containing the *Holiday* attribute.

1. On the Semantic Model Extensions page, click the **MySandbox5Mar25** sandbox.
2. Click **Perform Action**, click **Manage Subject Areas**, select **Modify a Subject Area**, select **SCM – Sales Orders** subject area, and then click **Next**.
3. On the Modify a Subject Area - SCM - Sales Orders page, in step 1 of the wizard, view the subject area details and click **Next**.
4. In step 2 of the wizard, click **Manage Elements**, click **Manage New Customizations**, and then in Add a Subject Area, select the **Fact - Holiday Calendar** folder and all the fact measures, and then click **Add**.



5. Review the selected elements and click **Finish**.



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Apply and Publish the Customizations

You apply the changes to compile the sandbox and ensure that the sandbox is error free.

Then, you use the Activity tab to debug, resolve errors, and confirm that the Apply Changes action completes and is successful. Finally, you merge the changes to the main sandbox and publish the main user extensions to share the new extensions with consumers.

In this step, you apply the changes, use the Activity tab to monitor the status, merge the *MySandbox5Mar25* sandbox to the Main sandbox, and then publish the main user extension.

1. On the Semantic Model Extensions page, hover over the **MySandbox5Mar25** sandbox to view **Actions**, and then click **Apply Changes**.
2. Click the Activity tab to monitor the **Apply Changes** task on the Activity page.
3. After the changes are successfully applied, click **Publish Model** on the Semantic Model Extensions page.
4. In Publish Model, in User Extensions, select **MySandbox5Mar25** and in Security Configurations, select **All**.
5. Click **Publish**.
6. On the Semantic Model Extensions page, click the Activity tab to monitor the **Publish Customizations** task.

   See Apply Changes and Publish Model.

Validate the Results

Verify that your customizations are visible in the semantic model.

1. On the Fusion Data Intelligence Console, click **Go to Home Page**.
2. On the Oracle Analytics Home page, click **Create**, click **Workbook**, in Add Data, select **SCM – Sales Orders**, and then click **Add to Workbook**.
3. Build a report by dragging these:
   - Year
   - Month
   - Date
   - Holiday
   - Business Day
   - Month Business Days
   - Todate Business Days

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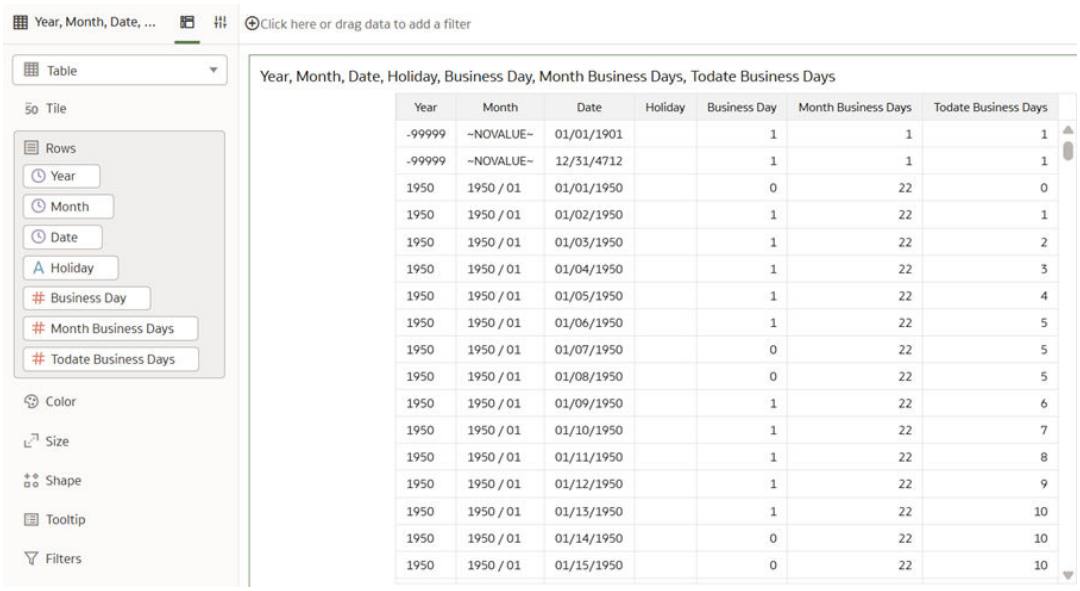
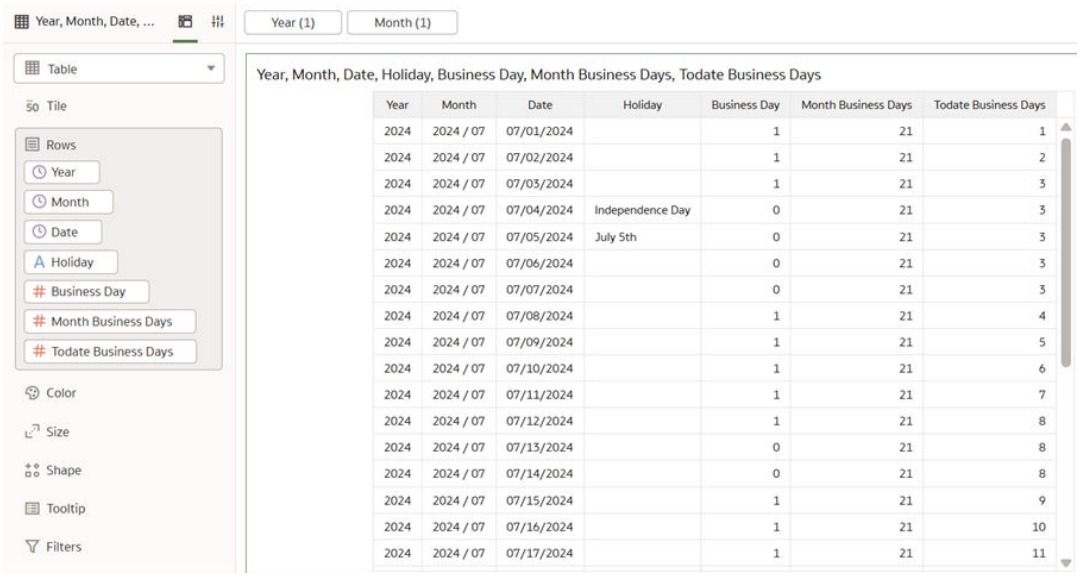


Year	Month	Date	Holiday	Business Day	Month Business Days	Todate Business Days
-99999	~NOVALUE~	01/01/1901		1	1	1
-99999	~NOVALUE~	12/31/4712		1	1	1
1950	1950 / 01	01/01/1950		0	22	0
1950	1950 / 01	01/02/1950		1	22	1
1950	1950 / 01	01/03/1950		1	22	2
1950	1950 / 01	01/04/1950		1	22	3
1950	1950 / 01	01/05/1950		1	22	4
1950	1950 / 01	01/06/1950		1	22	5
1950	1950 / 01	01/07/1950		0	22	5
1950	1950 / 01	01/08/1950		0	22	5
1950	1950 / 01	01/09/1950		1	22	6
1950	1950 / 01	01/10/1950		1	22	7
1950	1950 / 01	01/11/1950		1	22	8
1950	1950 / 01	01/12/1950		1	22	9
1950	1950 / 01	01/13/1950		1	22	10
1950	1950 / 01	01/14/1950		0	22	10
1950	1950 / 01	01/15/1950		0	22	10

4. Filter on 2024/07 which has 2 holidays. All columns add up the same 21 business days in the month, but each column may be useful for different calculations.



Year	Month	Date	Holiday	Business Day	Month Business Days	Todate Business Days
2024	2024 / 07	07/01/2024		1	21	1
2024	2024 / 07	07/02/2024		1	21	2
2024	2024 / 07	07/03/2024		1	21	3
2024	2024 / 07	07/04/2024	Independence Day	0	21	3
2024	2024 / 07	07/05/2024	July 5th	0	21	3
2024	2024 / 07	07/06/2024		0	21	3
2024	2024 / 07	07/07/2024		0	21	3
2024	2024 / 07	07/08/2024		1	21	4
2024	2024 / 07	07/09/2024		1	21	5
2024	2024 / 07	07/10/2024		1	21	6
2024	2024 / 07	07/11/2024		1	21	7
2024	2024 / 07	07/12/2024		1	21	8
2024	2024 / 07	07/13/2024		0	21	8
2024	2024 / 07	07/14/2024		0	21	8
2024	2024 / 07	07/15/2024		1	21	9
2024	2024 / 07	07/16/2024		1	21	10
2024	2024 / 07	07/17/2024		1	21	11

Use Case 6: Add Derived Columns

You can add derived columns to a folder that uses a function or formula referencing custom or prebuilt elements that enables you to perform calculations and display derived values.

The *Dim – Customer Sold To* folder in the prebuilt subject area *SCM – Sales Order* doesn't contain the required derived column *Customer Index*. In this use case, you add the *Custom Index* derived column, calculated using a CASE statement function, into the prebuilt *Dim – Custom Sold To* folder to associate the *Customer Index* with the *Sold To Customer* attributes. The derived column is automatically joined because it's created within the *Dim – Customer Sold To* dimension.

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This use case requires Fusion SCM Analytics subscription. However, you can apply the concepts covered in this use case to any other Fusion Data Intelligence subscription. The use case may reference Autonomous AI Lakehouse prebuilt tables and synonyms and mock custom database tables and views. If you've activated the specified Fusion Data Intelligence subscription, you may use the samples provided. The recommendation is to substitute the sample objects for your own custom Autonomous AI Lakehouse objects such as custom table, materialized view, view, custom synonym, or data augmentation dataset synonym.

In this task, you:

1. Add a Derived Column to the Semantic Model
2. Present the Derived Column in the Semantic Model
3. Apply and Publish the Customizations
4. Validate the Results

Use the following to complete this task:

- Dim – Customer Sold To folder
- SCM – Sales Order prebuilt subject area

Ensure that you refer to Upload Samples for the Semantic Model Extensions Use Cases and complete these prerequisites:

- Create a sandbox titled MySandbox5Mar25. See Create a Sandbox. Or, edit an existing sandbox on the Semantic Model Extensions page; for example, by clicking the MySandbox5Mar25 sandbox.

Add a Derived Column to the Semantic Model

You edit the logical star to define the custom derived column expression formula. You can use the Fx Functions for syntax assistance, or copy the formula and paste it or manually type.

In this step, you edit the *Fact – OM Sales Orders* logical star to extend the prebuilt *Dim – Custom Sold To* dimension, creating a new derived column *Custom Index*. At runtime, *Custom Index* executes a CASE statement function evaluating the *Sold-to-Customer* column return a custom value based on defined if-then-else conditions.

1. On the Semantic Model Extensions page, click the **MySandbox5Mar25** sandbox.
2. In **Perform Action**, click **Manage Logical Star**, click **Edit Logical Star**, select **Out of the box**, select **SCM – Sales Orders** subject area, select **Fact – OM Sales Orders**, and then click **Next**.
3. On the Logical Star: Fact page, locate the **Dim – Customer Sold To** dimension to add the derived column to. Right-click the dimension, and then click **Manage Extension**.

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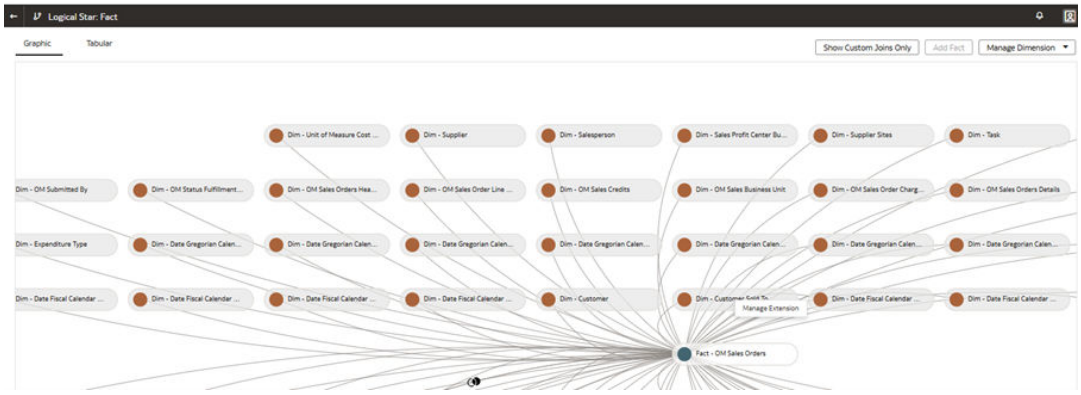
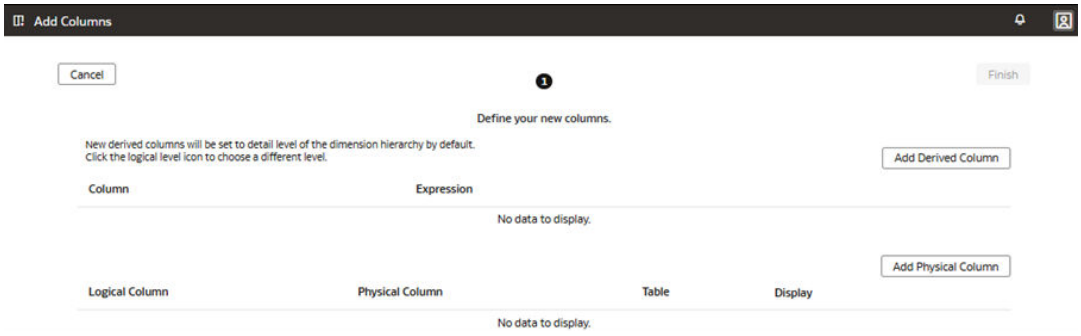


4. On the Sandbox: MySandbox5Mar25 page, click **Manage Extension** and then click **Add Columns**.
5. On the Add Columns page, click **Add Derived Column**.



6. In Create Column, enter `Customer Index` in **Name**, and the following script in the space under the **Name** field:

```
CASE
WHEN UPPER(SUBSTRING("Core"."Dim - Customer Sold To"."Sold-to Customer"
FROM 1 FOR 1)) BETWEEN  'A' AND 'H' THEN 'A-H'
WHEN UPPER(SUBSTRING("Core"."Dim - Customer Sold To"."Sold-to Customer"
FROM 1 FOR 1)) BETWEEN  'I' AND 'P' THEN 'I-P'
WHEN UPPER(SUBSTRING("Core"."Dim - Customer Sold To"."Sold-to Customer"
FROM 1 FOR 1)) BETWEEN  'Q' AND 'Z' THEN 'Q-Z'
ELSE 'Other'
END
```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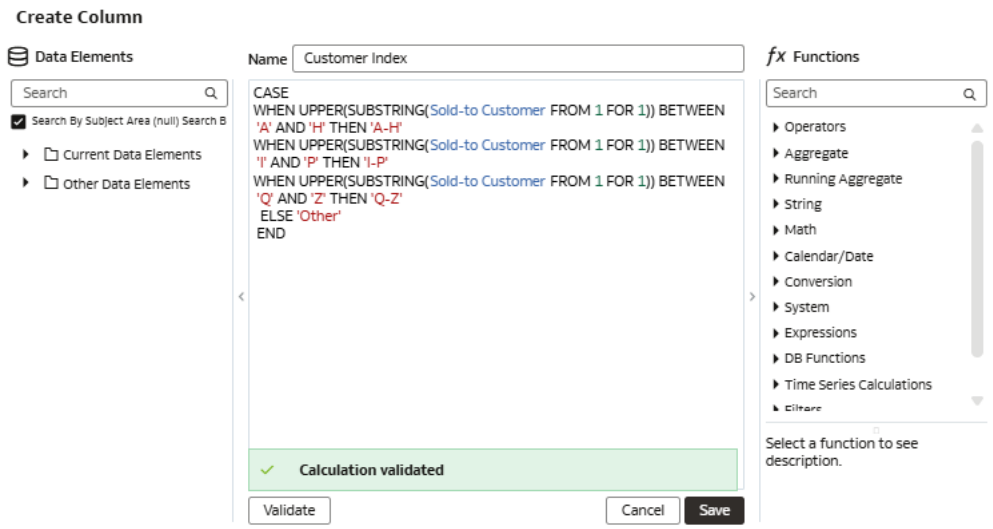
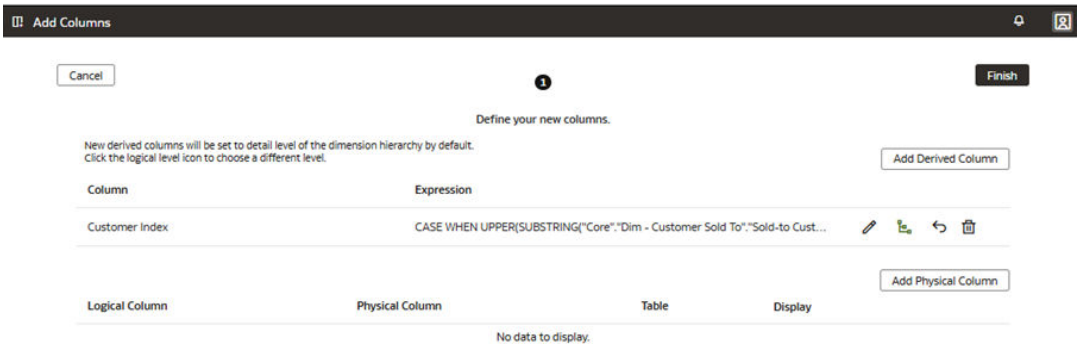


7. In Create Column, after providing the applicable script, click **Validate**, then **Save**, and then **Finish** on the Add Columns page.



Present the Derived Column in the Semantic Model

You modify the subject area to present the new custom derived column and select the folder to display it in.

The system automatically joins the new column to the dimension it's added to. In this step, you modify the *SCM – Sales Order* subject area to present the new derived column *Custom Index*, adding it to the prebuilt *Dim – Custom Sold To* folder.

1. Navigate to the MySandbox5Mar25 page, click **Perform Action**, click **Manage Subject Areas**, select **Modify a Subject Area**, select **SCM Sales Orders** subject area, and then click **Next**.
2. On the Modify a Subject Area page, in step 1 of the wizard, view the details and click **Next**.
3. In step 2 of the wizard, click **Manage Elements**, and then click **Manage Factory Customizations**.
4. In Add a Subject Area, select **Customer Index**, and then click **Add Folders**.

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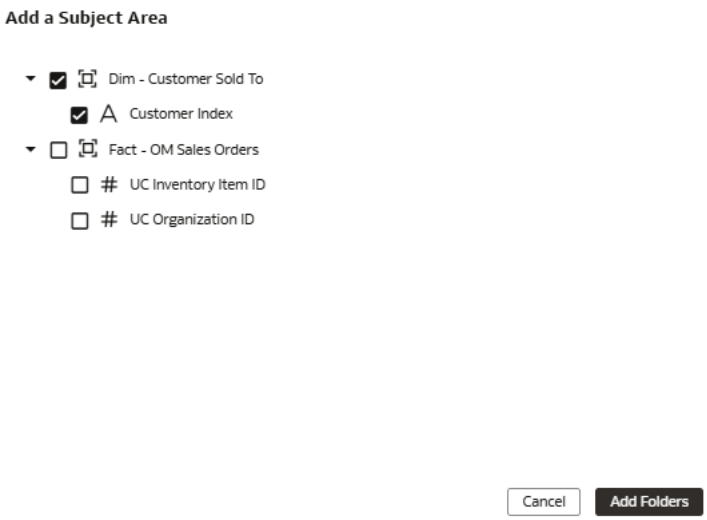
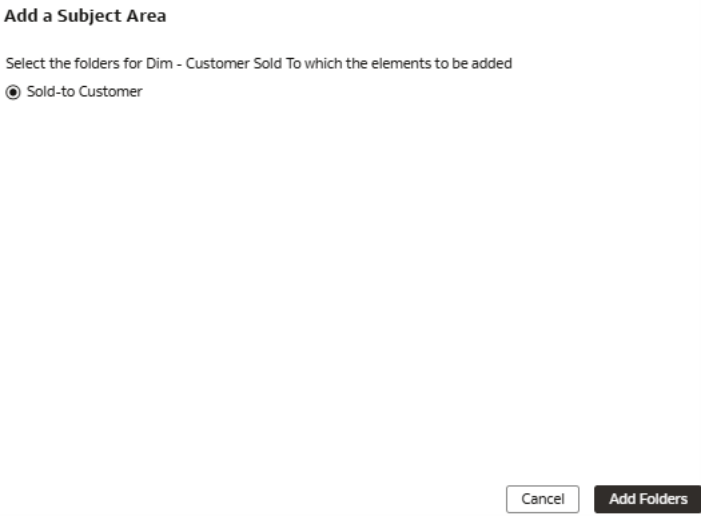
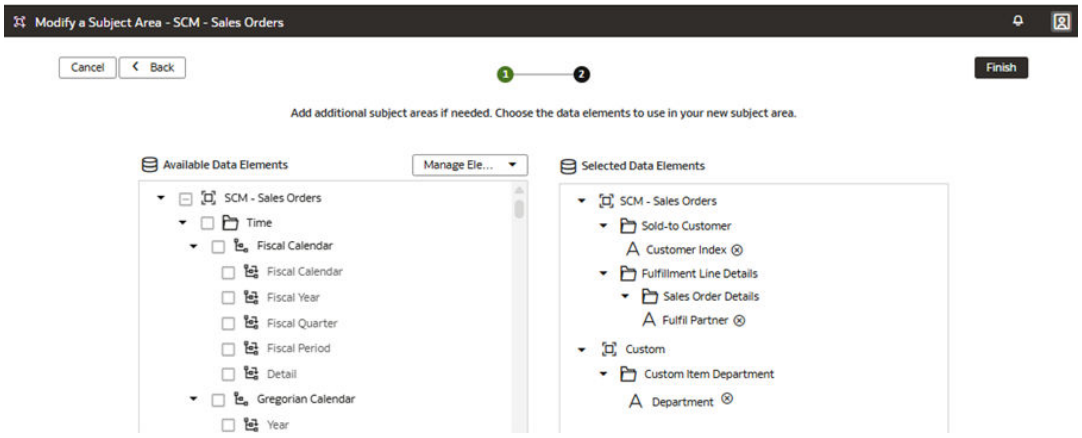


5. In Add a Subject Area, select the **Sold-to Customer** folder and click **Add Folders**.



6. In step 2 of the wizard, review the selected elements and click **Finish**.



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Apply and Publish the Customizations

You apply the changes to compile the sandbox and ensure that the sandbox is error free.

Then, you use the Activity tab to debug, resolve errors, and confirm that the Apply Changes action completes and is successful. Finally, you merge the changes to the main sandbox and publish the main user extensions to share the new extensions with consumers.

In this step, you apply the changes, use the Activity tab to monitor the status, merge the *MySandbox5Mar25* sandbox to the Main sandbox, and then publish the main user extension.

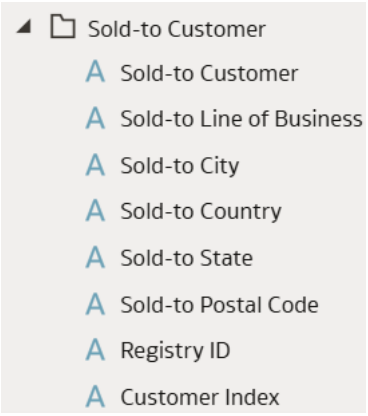
1. On the Semantic Model Extensions page, hover over the **MySandbox5Mar25** sandbox to view **Actions**, and then click **Apply Changes**.
2. Click the Activity tab to monitor the **Apply Changes** task on the Activity page.
3. After the changes are successfully applied, click **Publish Model** on the Semantic Model Extensions page.
4. In Publish Model, in User Extensions, select **MySandbox5Mar25** and in Security Configurations, select **All**.
5. Click **Publish**.
6. On the Semantic Model Extensions page, click the Activity tab to monitor the **Publish Customizations** task.

   See Apply Changes and Publish Model.

Validate the Results

Verify that your customizations are visible in the semantic model.

1. On the Fusion Data Intelligence Console, click **Go to Home Page**.
2. On the Oracle Analytics Home page, click **Create**, click **Workbook**, in Add Data, select **SCM – Sales Orders**, and then click **Add to Workbook**.
3. Verify that that new column **Customer Index** is visible at the end of the **Sold-to Customer** folder.



4. Build a report displaying the **Customer Index** and **Sold-to Customer** columns.

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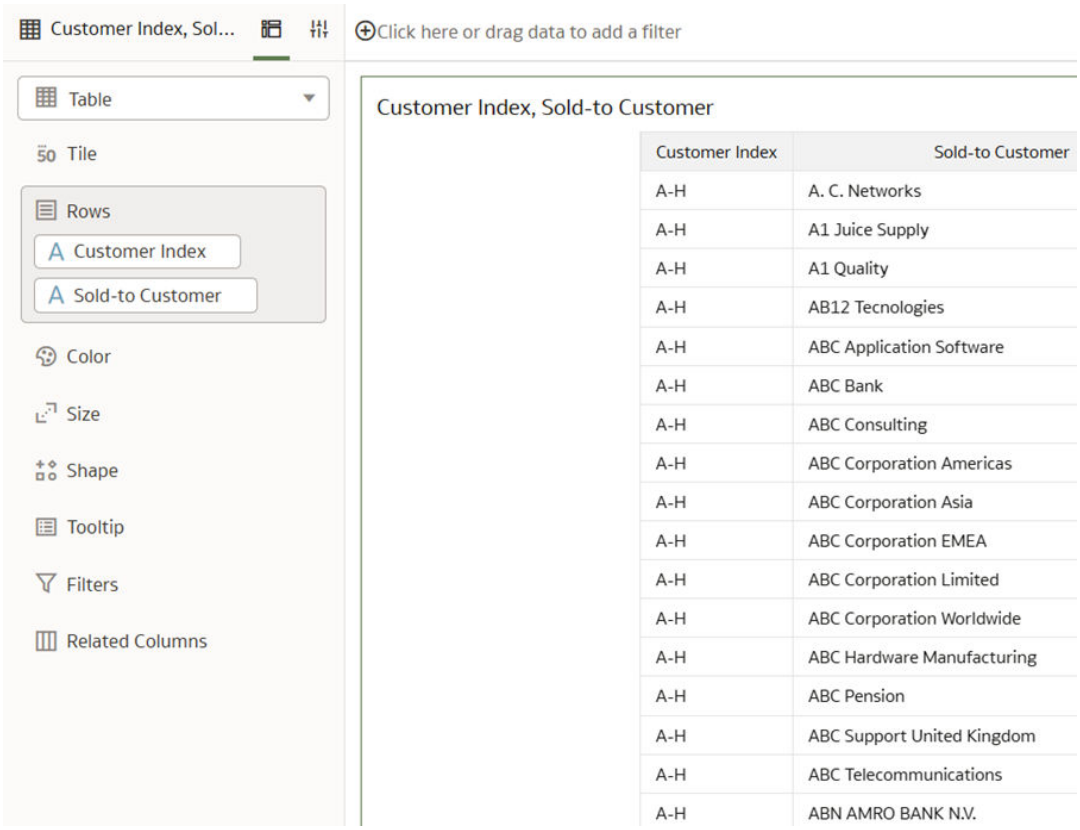

Use Case 7: Create Custom Dim with Hierarchy

You can create a dimension with a hierarchy by defining a parent-child level-based hierarchical structure.

The prebuilt *SCM – Sales Order* subject area doesn't contain the required *Dim – Party Hierarchy Dim* dimension attributes and hierarchical levels. In this use case, you add a folder *Dim - Party Hierarchy Dim* to the *SCM – Sales Orders* prebuilt subject area. This folder contains the *Accounts Level Hierarchy* hierarchy with four levels, plus a detailed lowest level. The custom dimension with hierarchy is joined to the prebuilt *Fact – OM Sales Orders* fact using the *Party ID* key.

This use case requires Fusion SCM Analytics subscription. However, you can apply the concepts covered in this use case to any other Fusion Data Intelligence subscription. The use case may reference Autonomous AI Lakehouse prebuilt tables and synonyms and mock custom database tables and views. If you've activated the specified Fusion Data Intelligence subscription, you may use the samples provided. The recommendation is to substitute the sample objects for your own custom Autonomous AI Lakehouse objects such as custom table, materialized view, view, custom synonym, or data augmentation dataset synonym.

In this task, you:

1. Add Custom Fact to the Semantic Model
2. Add Physical Column to a Prebuilt Fact to Expose Foreign Key to Join On
3. Join the Custom Dimension Hierarchy to a Prebuilt Fact
4. Present the Custom Dimension Hierarchy in the Semantic Model
5. Apply and Publish the Customizations

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6. Validate the Results

Use the following to complete this task:

- Prebuilt Subject area: SCM – Sales Orders

Ensure that you refer to Upload Samples for the Semantic Model Extensions Use Cases and complete these prerequisites:

- Create a sandbox titled MySandbox5Mar25. See Create a Sandbox. Or, edit an existing sandbox on the Semantic Model Extensions page; for example, by clicking the MySandbox5Mar25 sandbox.
- Generate the sample dimension view FDI_X_PARTY_HIERARCHY_D_V using this SQL script:

```
CREATE OR REPLACE FORCE EDITIONABLE VIEW
"OAX_USER"."FDI_X_PARTY_HIERARCHY_D_V" ("PARTY_ID", "LVL1", "LVL2",
"LVL3", "LVL4", "LVL_DETAIL") DEFAULT COLLATION "USING_NLS_COMP"  AS
  (
SELECT DISTINCT
PARTY_ID,
NVL(COUNTRY,'~No Value~') as LVL1,
NVL(STATE,'~No Value~') as LVL2,
NVL(CITY,'~No Value~') as LVL3,
NVL(POSTAL_CODE,'~No Value~') as LVL4,
NVL(PARTY_NAME,'~No Value~') as LVL_DETAIL
FROM
OAX$OAC.DW_PARTY_D
where (CUSTOMER_FLAG <> 'N' or CUSTOMER_FLAG is null)
);
```

- Grant semantic model access to the FDI_X_PARTY_HIERARCHY_D_V view for the OAX$OAC schema using the following SQL script:

```
GRANT SELECT ON "OAX_USER"."FDI_X_PARTY_HIERARCHY_D_V" TO "OAX$OAC";
```

- Validate that the data is loading from the sample as expected using the following SQL script:

```
SELECT * FROM OAX_USER.FDI_X_PARTY_HIERARCHY_D_V;
```

- Confirm that the foreign key is unique to avoid inaccurate results caused from possible duplication due to incorrect granularity by entering this SQL script under SQL Worksheet on the right pane in SQL Developer Client:

```
SELECT PARTY_ID, COUNT(*)
FROM FDI_X_PARTY_HIERARCHY_D_V
GROUP BY PARTY_ID
HAVING COUNT(*) > 1;
```


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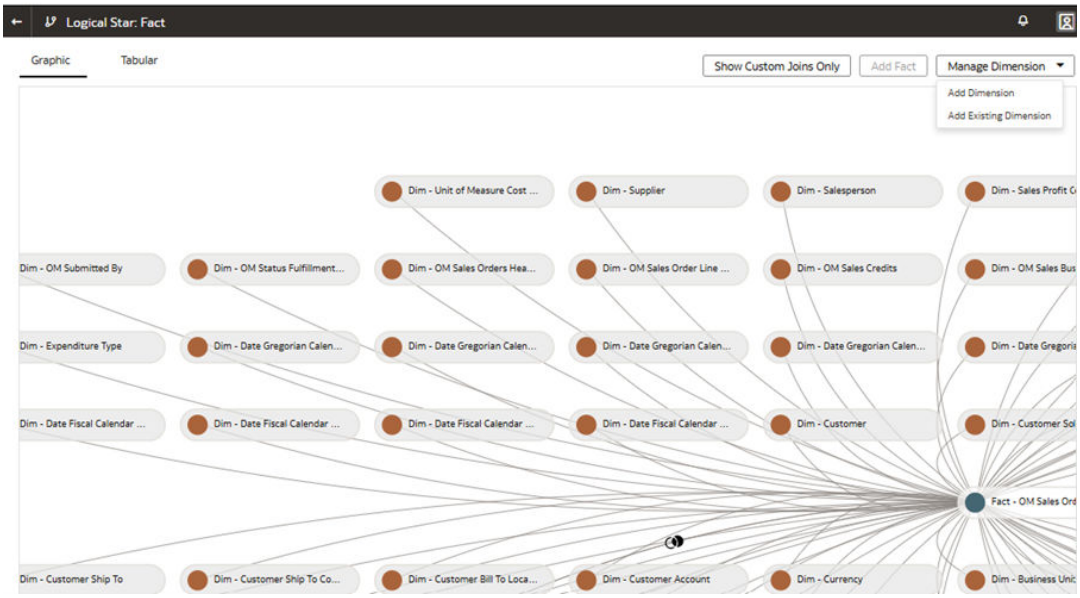
Add Custom Fact to the Semantic Model

You edit the logical star to define the autonomous data warehouse objects, attributes, display labels, keys, and hierarchy.

In this step, you edit the *Fact – OM Sales Orders* logical star to add a custom dimension *Dim – Party Hierarchy Dim* referencing the autonomous data warehouse object *FDI_X_PARTY_HIERARCHY_D_V* and define a multi-level hierarchy named *Accounts Level Hierarchy*. For each level, the use case defines a unique primary key and display attribute.

1. On the Semantic Model Extensions page, click the **MySandbox5Mar25** sandbox.
2. In **Perform Action**, click **Manage Logical Star**, then **Edit Logical Star**, select **Out of the box**, select **SCM – Sales Orders** subject area, select **Fact – OM Sales Orders**, and then click **Next**.
3. On the Logical Star: Fact page, click **Manage Dimension**, and then click **Add Dimension**.



4. On the Add a Dimension page, in step 1 of the wizard, select **OAX_USER** in **Schema**, select **FDI_X_PARTY_HIERARCHY_D_V** in **Object**, and rename **Dimension Name** as **Party Hierarchy Dim**. Select the **Use for Key** checkbox for **PARTY_ID** source column, select the **Add Attributes** checkbox for **LVL2**, **LVL_DETAIL**, **LVL3**, **LVL4**, **LVL1**, and **PARTY_ID** source columns, and click **Next**.

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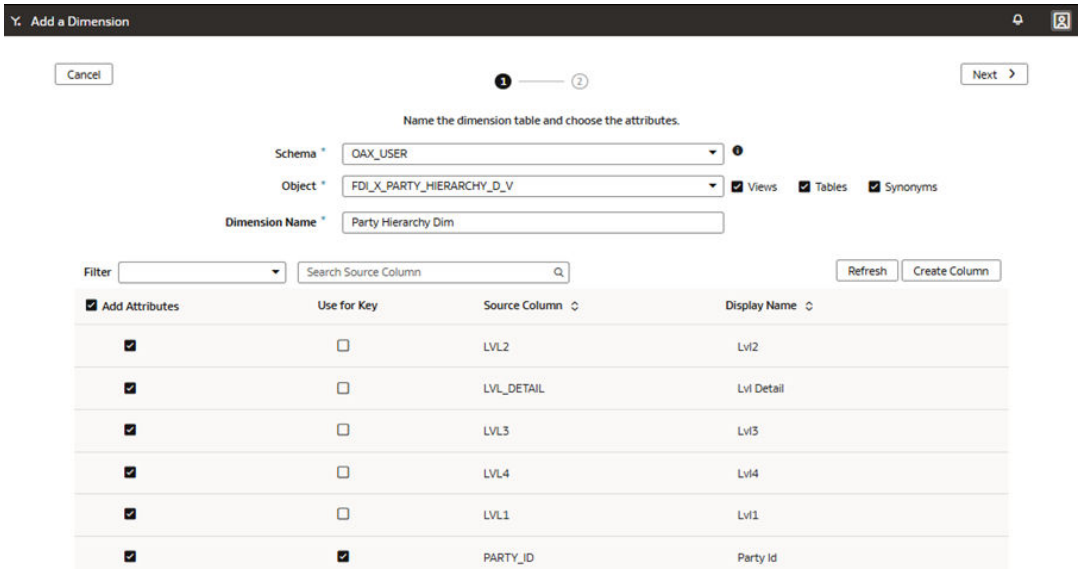
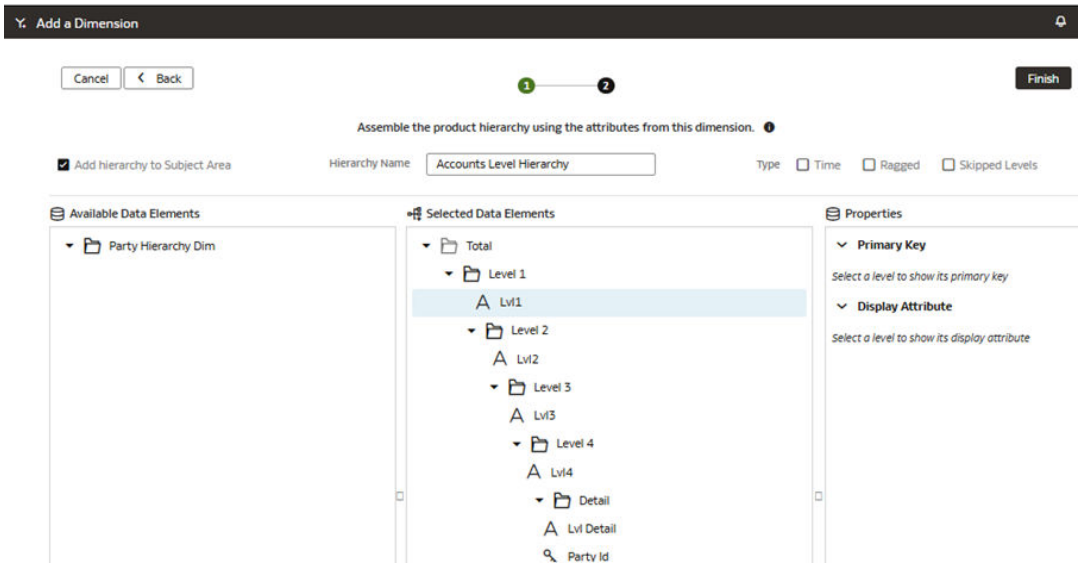


5. Select the **Add hierarchy to Subject Area** checkbox, enter `Accounts Level Hierarchy` in **Name**, and drag each attribute to its corresponding level.



6. For each level, click on the level, click the pencil icon and then set the primary key and display attribute.

> **Note**
>
> You may prefer to use an Internal ID / integer key for each level, if available. For the Detail Level, this use case use Party ID for the key.

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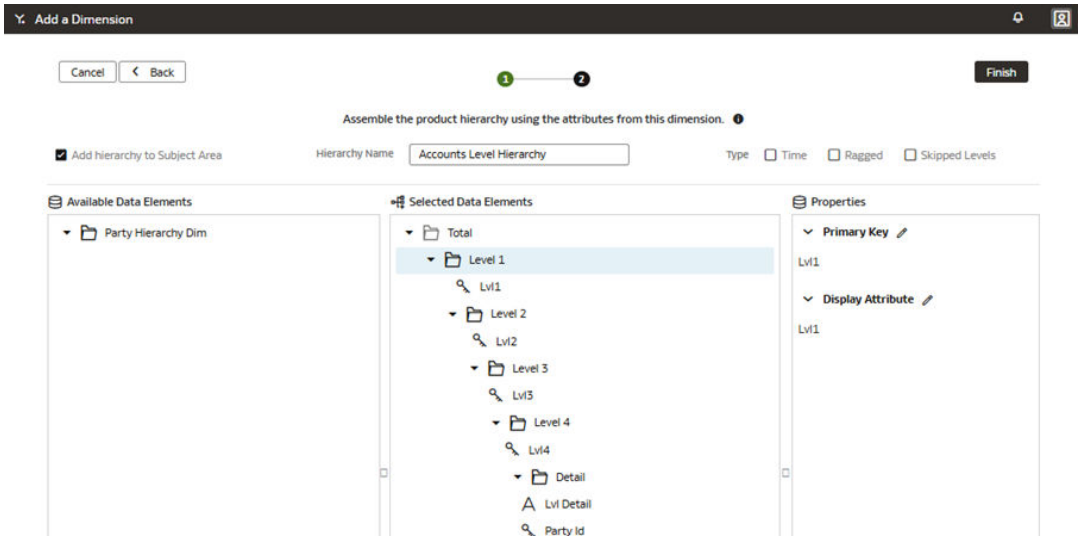


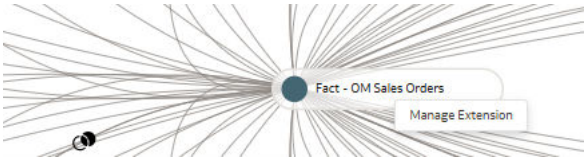
7. Click **Finish**.

Add Physical Column to a Prebuilt Fact to Expose Foreign Key to Join On

You extend the prebuilt fact to expose physical columns that will be used as keys to join the new custom dimension in the logical star. You must give the logical columns unique names.

In this step, you extend *Fact – OM Sales Orders* to expose physical column BILL_TO_PARTY_ID to use as a key to join to the new custom dimension *Dim – Party Hierarchy Dim*. BILL_TO_PARTY is given a unique name *Party ID*.

1. On the Semantic Model Extensions page, click the **MySandbox5Mar25** sandbox.
2. In **Perform Action**, click **Manage Logical Star**, then **Edit Logical Star**, select **Out of the box**, select **SCM – Sales Orders** subject area, select **Fact – OM Sales Orders**, and then click **Next**.
3. On the Logical Star: Fact page, right-click **Fact – OM Sales Orders**, and then click **Manage Extension**.



4. On the Add Columns page, click **Add Physical Column**, and in **Select Physical Column**, select **BILL_TO_PARTY_ID** from **Fact_DW_OM_FULFILLMENT_CF** and then click **OK**.

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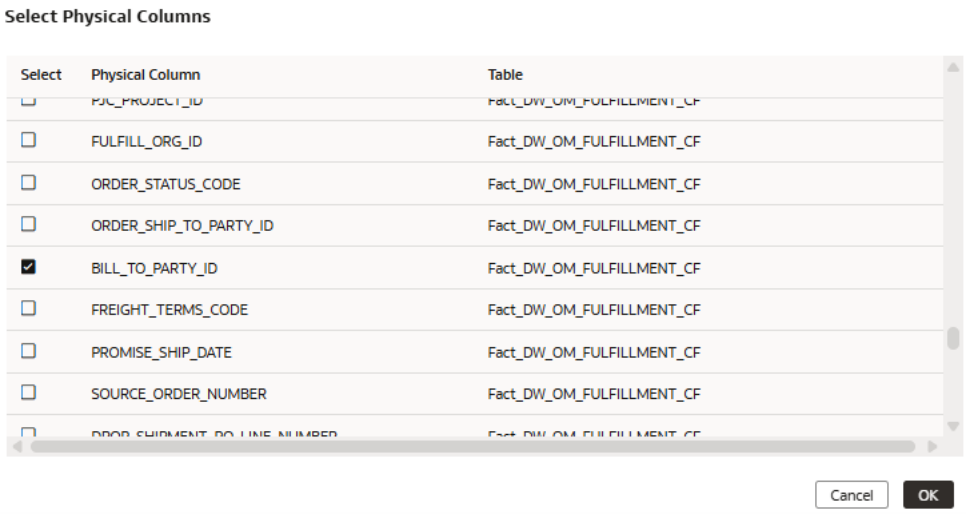
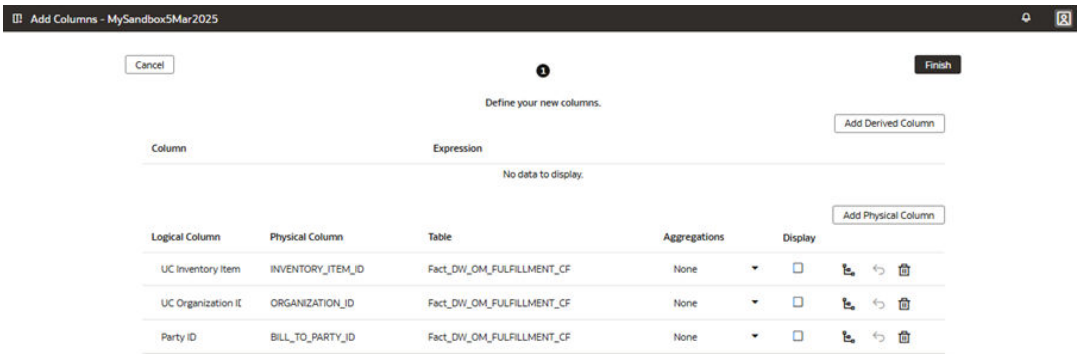


5. Under the **Logical Column**, enter `Party ID` as the unique name and click **Finish**.



Join the Custom Dimension Hierarchy to a Prebuilt Fact

You join the custom dimension hierarchy to the prebuilt fact by defining the join type, join condition, and context level. Although you can define complex joins, use standard joins where possible.

In this step, you define a standard Inner join on the prebuilt *Fact – OM Sales Orders* fact to the custom dimension hierarchy *Dim – Party Hierarchy Dim* using the *Party ID* key from each table. You set the content level to *Detail*.

1. On the Semantic Model Extensions page, click the **MySandbox5Mar25** sandbox.
2. In **Perform Action**, click **Manage Logical Star**, then **Edit Logical Star**, select **Out of the box**, select **SCM – Sales Orders** subject area, select **Fact – OM Sales Orders**, and then click **Next**.
3. On the Logical Star: Fact page, drag from the custom dimension hierarchy to the prebuilt fact.



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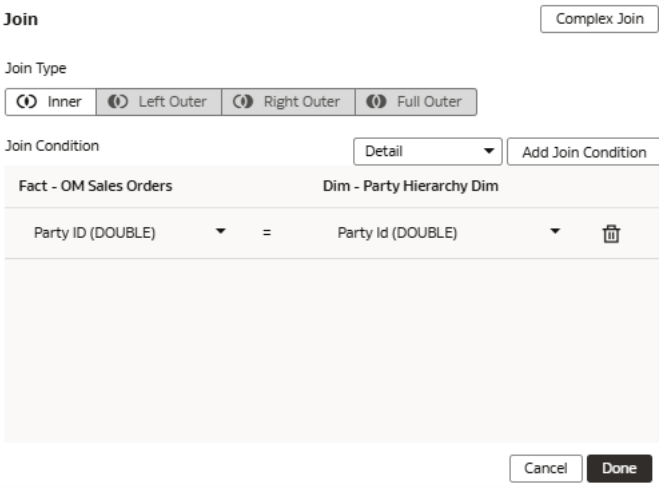
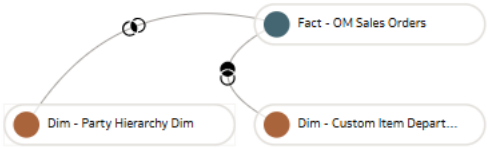
4. In Join dialog, join on **Party ID** (New physical column added) and **Party ID** (from Custom Dim Hierarchy). This example uses an Inner Join. Others may require a Left (or other Join type). Set the **Context Level** as **Detail** and click **Done**.



5. Review the join in graphical mode.



6. Click the back arrow on the Logical Star: Fact page to navigate back to the Sandbox: MySandbox5Mar2025 page.

Present the Custom Dimension Hierarchy in the Semantic Model

You modify the subject area to present the new custom dimension attributes and hierarchy levels.

The system represents the dimension as a folder containing columns in the subject area and represents the hierarchy levels at the bottom of the custom dimension folder. Hierarchy levels used in Workbooks can expand and collapse to reveal or hide detailed rows.

In this step, you modify the *SCM – Sales Order* subject area to present the new custom *Dim – Party Hierarchy Dim* folder containing the custom hierarchy *Accounts Level Hierarchy* with four levels (Level 1, Level 2, Level 3, Level 4) and the lowest Detailed level.

1. Navigate to the MySandbox5Mar25 page, click **Perform Action**, click **Manage Subject Areas**, select **Modify a Subject Area**, select **SCM Sales Orders** subject area, and then click **Next**.
2. On the Modify a Subject Area page, in step 1 of the wizard, view the details and click **Next**.
3. In step 2 of the wizard, click **Manage Elements**, click **Manage New Customizations**, and in Add a Subject Area, select the hierarchy and dimensions elements, and then click **Add**.

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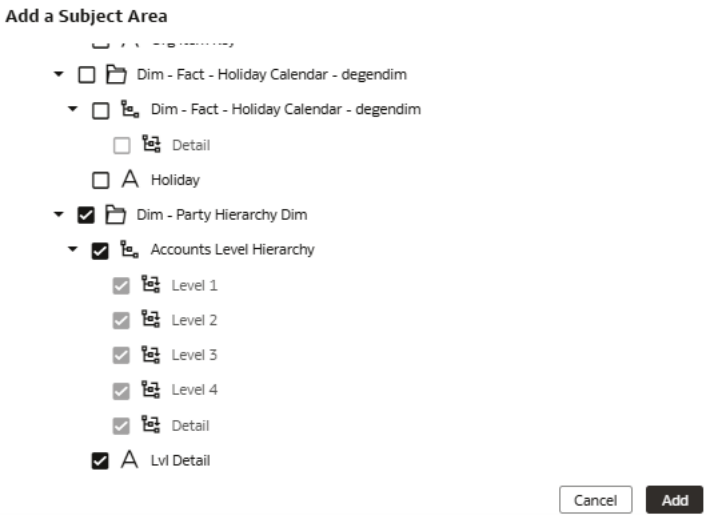
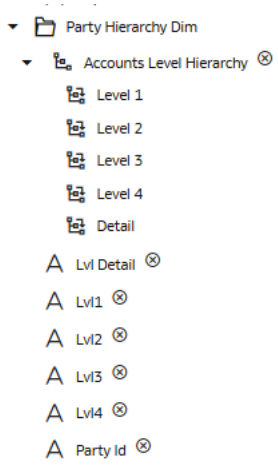


4. Review the selected elements and click **Finish**.



Apply and Publish the Customizations

You apply the changes to compile the sandbox and ensure that the sandbox is error free.

Then, you use the Activity tab to debug, resolve errors, and confirm that the Apply Changes action completes and is successful. Finally, you merge the changes to the main sandbox and publish the main user extensions to share the new extensions with consumers.

In this step, you apply the changes, use the Activity tab to monitor the status, merge the *MySandbox5Mar25* sandbox to the Main sandbox, and then publish the main user extension.

1. On the Semantic Model Extensions page, hover over the **MySandbox5Mar25** sandbox to view **Actions**, and then click **Apply Changes**.
2. Click the Activity tab to monitor the **Apply Changes** task on the Activity page.
3. After the changes are successfully applied, click **Publish Model** on the Semantic Model Extensions page.

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4. In Publish Model, in User Extensions, select **MySandbox5Mar25** and in Security Configurations, select **All**.
5. Click **Publish**.
6. On the Semantic Model Extensions page, click the Activity tab to monitor the **Publish Customizations** task.

   See Apply Changes and Publish Model.

Validate the Results

Verify that your customizations are visible in the semantic model.

1. On the Fusion Data Intelligence Console, click **Go to Home Page**.
2. On the Oracle Analytics Home page, click **Create**, click **Workbook**, in Add Data, select **SCM – Sales Orders**, and then click **Add to Workbook**.
3. Verify that the new dimension with the hierarchy appears at the bottom of the folder by default.



4. Add level 1 and a measure to the visualization.

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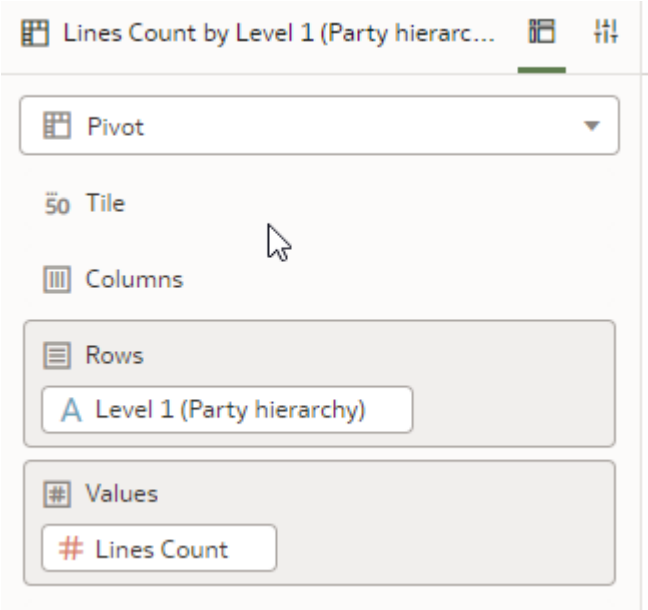

5. Expand and collapse the levels and confirm they work as expected.

Level 1 (Party hierarchy)	Lines Count
US	512
California	269
San Diego	269
92131	269
Skylab Industries	269
FL	146
Lake Mary	146
32746	146
New Start Gyms	146
IL	66
MA	3
NV	4
OR	23
Pennsylvania	1

6. Verify that the dimension fields are also available to use (without expand or collapse).

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7. View the report.

Lvl1	Lvl2	Lvl3	Lvl4	Lvl Detail	Lines Count
US	California	San Diego	92131	Skylab Industries	269
US	FL	Lake Mary	32746	New Start Gyms	146
US	IL	Rockford	61105	Sykes Gym	66
US	MA	Newton	2458	Orbital Fitness Club	3
US	NV	Reno	89502	Monster Fitness	4
US	OR	Portland	97214	Fusion Fitness Club	23
US	Pennsylvania	Pittsburgh	15213	Melissa Turner	1

Use Case 8: Create a Subject Area Based on an Existing Subject Area

You can create a subject area based on an existing subject area to:

- Reuse elements from an existing subject area such as join custom fact to the prebuilt dimensions.
- Refine or clean up an existing subject area such as:
  - Only expose select folders or columns to consumer users.
  - Rename folders or columns.
  - Reorder folders or columns.
  - Remove non-required folders or columns.
  - Hide metadata fields created from data augmentation.

The prebuilt *SCM – Sales Order* subject area contains folders and columns that can be hidden, renamed, and reordered to improve the consumer experience. In this use case, you create the *SCM – Custom Sales Orders* subject area based on *SCM – Sales Orders*, an existing prebuilt subject area. The use case refines, reorders, and renames folders and columns.

This use case requires Fusion SCM Analytics subscription. However, you can apply the concepts covered in this use case to any other Fusion Data Intelligence subscription. The use case may reference Autonomous AI Lakehouse prebuilt tables and synonyms and mock custom database tables and views. If you've activated the specified Fusion Data Intelligence

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subscription, you may use the samples provided. The recommendation is to substitute the sample objects for your own custom Autonomous AI Lakehouse objects such as custom table, materialized view, view, custom synonym, or data augmentation dataset synonym.

In this task, you:

1. Create New Subject Area – Based on Existing One
2. Apply and Publish the Customizations
3. Validate the Results

Use the following to complete this task:

- SCM – Sales Orders prebuilt subject area

Ensure that you refer to Upload Samples for the Semantic Model Extensions Use Cases and complete these prerequisites:

- Create a sandbox titled MySandbox5Mar25. See Create a Sandbox. Or, edit an existing sandbox on the Semantic Model Extensions page; for example, by clicking the MySandbox5Mar25 sandbox.

Create New Subject Area – Based on Existing One

You create a subject area *SCM – Custom Sales Orders* based on the existing prebuilt subject area *SCM – Sales Orders*. You deselect unwanted columns, then reorder and rename folders and columns.

In this step, you deselect all prebuilt elements, and reselect Time, Customer, and Fact-Sales Order to refine the presented folders. You then reorder columns within the folders and rename columns and folders as desired.

1. On the Semantic Model Extensions page, click the **MySandbox5Mar25** sandbox.
2. Click **Perform Action**, click **Manage Subject Areas**, select **Create a Subject Area**, and then click **Next**.
3. Select **Create a subject are based on an existing one**, select **SCM – Sales Orders** as the base subject area, enter `SCM – Custom Sales Orders` in **New Subject Area Name**, and click **Next**.

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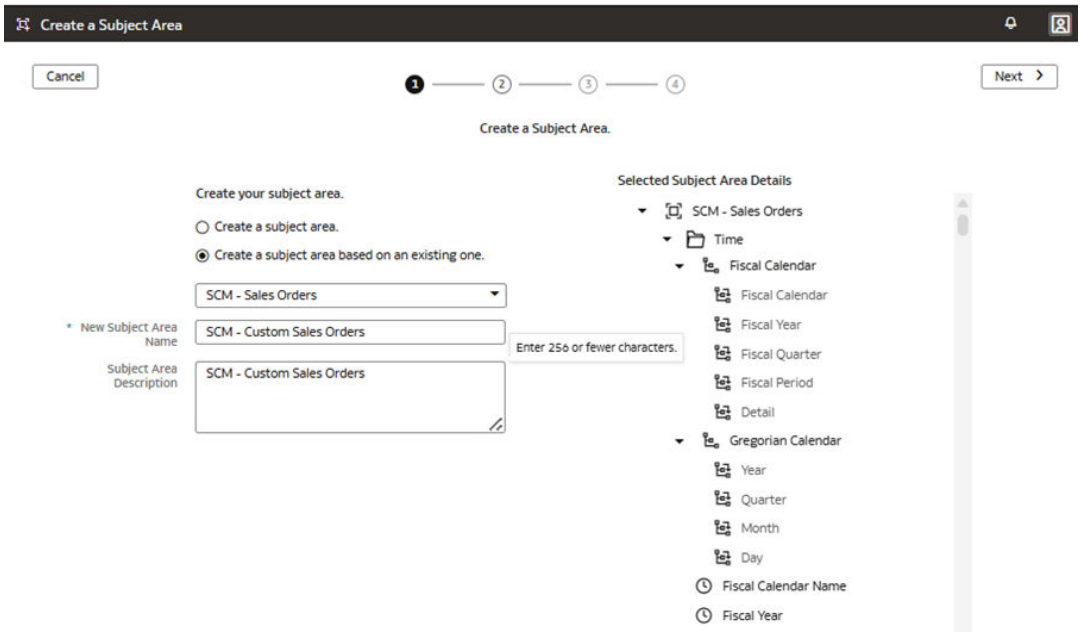
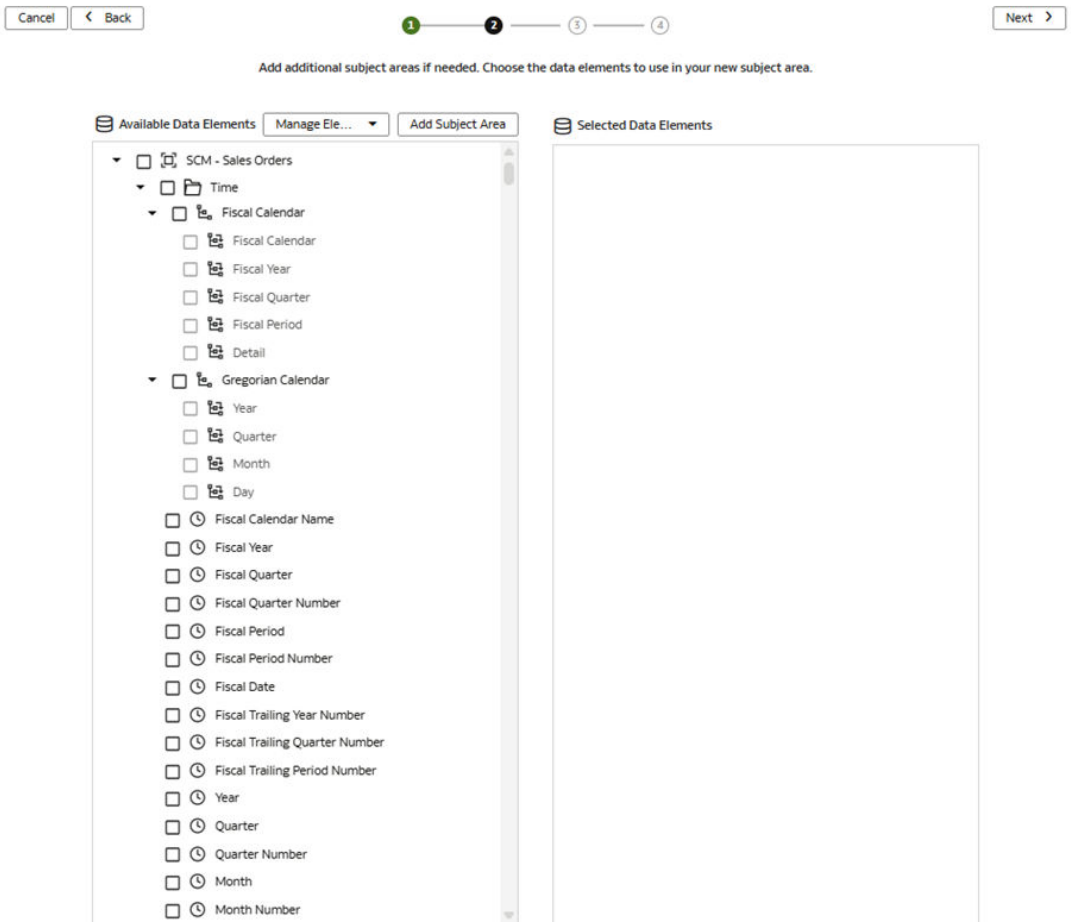


4. In step 2 of the wizard, depending on how you plan to use the new custom subject area it may be useful to unselect everything from **SCM – Sales Orders** subject area and then start selecting what you want.



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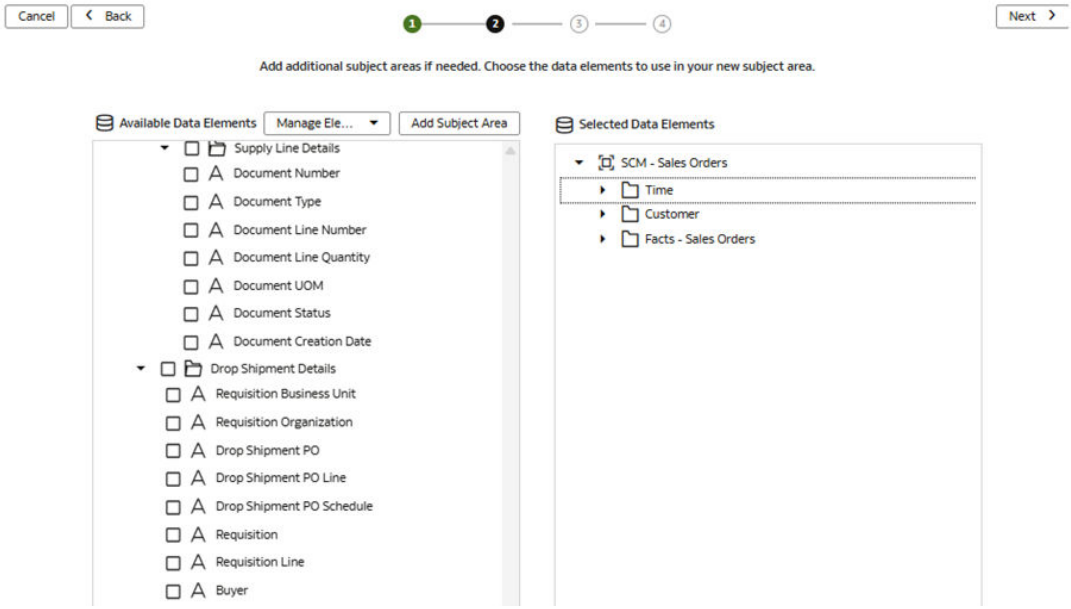
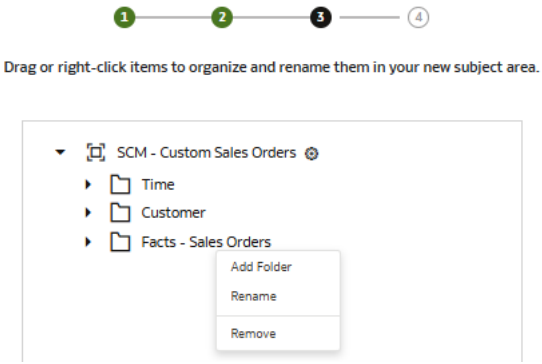
5. Select the desired elements and click **Next**. In this use case, you select **Time**, **Customer**, and **Facts – Sales Orders**.



6. In step 3 of the wizard, select the applicable action from the **Rename**, **Remove**, and **Reorder** options.



7. To reorder, left click until line is visible, drag into desired position, and click **Next**.

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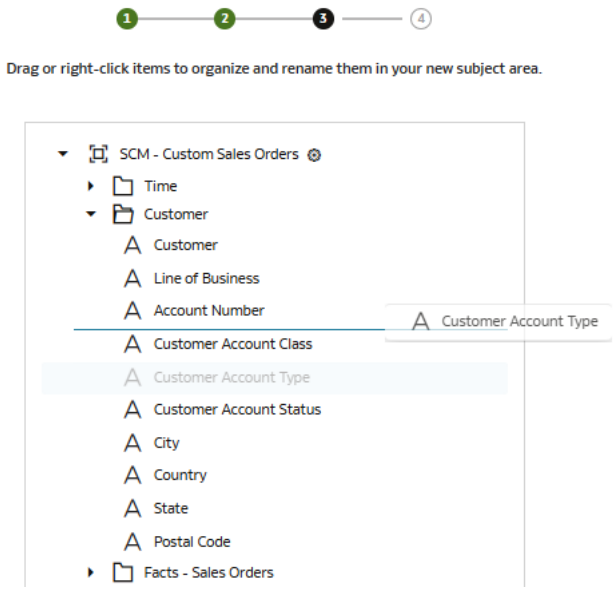
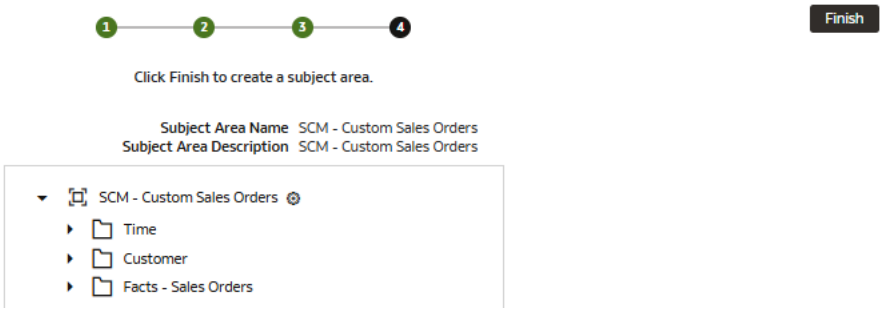


8. Review and click **Finish**.



Apply and Publish the Customizations

You apply the changes to compile the sandbox and ensure that the sandbox is error free.

Then, you use the Activity tab to debug, resolve errors, and confirm that the Apply Changes action completes and is successful. Finally, you merge the changes to the main sandbox and publish the main user extensions to share the new extensions with consumers.

In this step, you apply the changes, use the Activity tab to monitor the status, merge the *MySandbox5Mar25* sandbox to the Main sandbox, and then publish the main user extension.

1. On the Semantic Model Extensions page, hover over the **MySandbox5Mar25** sandbox to view **Actions**, and then click **Apply Changes**.
2. Click the Activity tab to monitor the **Apply Changes** task on the Activity page.
3. After the changes are successfully applied, click **Publish Model** on the Semantic Model Extensions page.
4. In Publish Model, in User Extensions, select **MySandbox5Mar25** and in Security Configurations, select **All**.
5. Click **Publish**.

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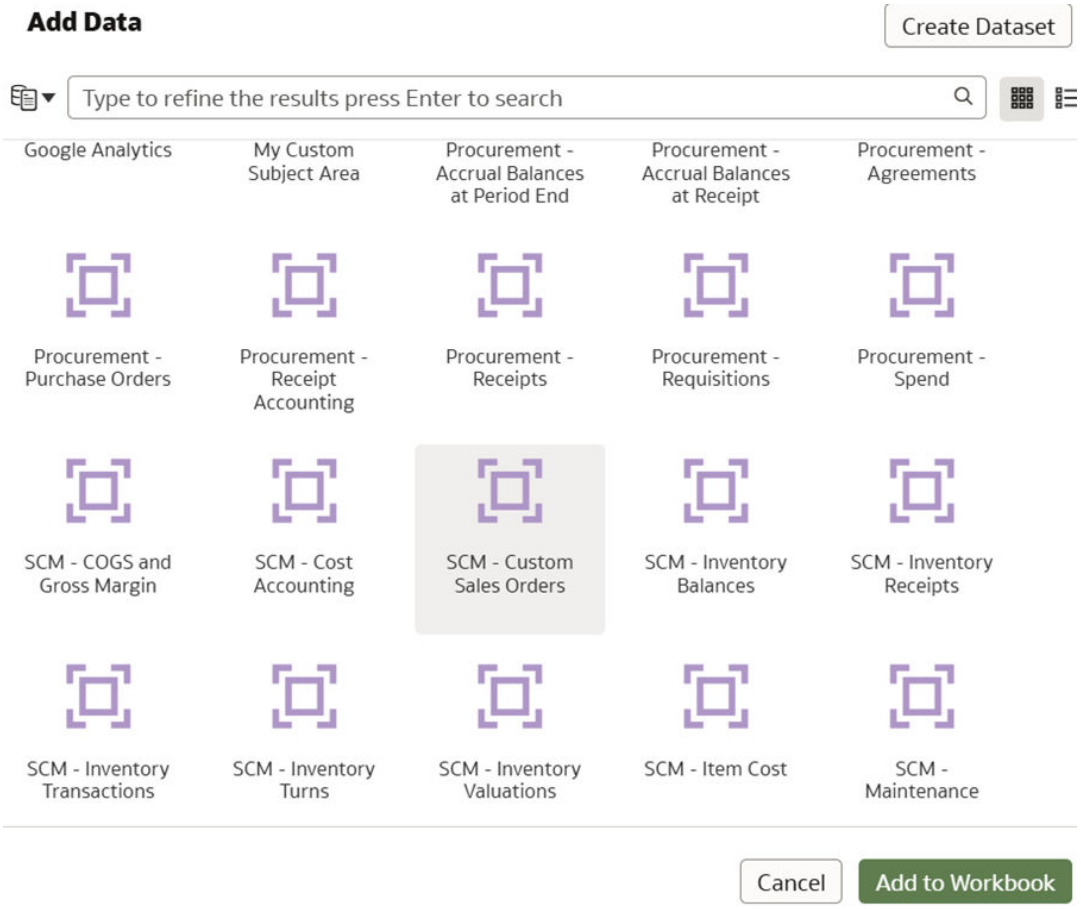
6. On the Semantic Model Extensions page, click the Activity tab to monitor the **Publish Customizations** task.

   See Apply Changes and Publish Model.

Validate the Results

Verify that your customizations are visible in the semantic model.

1. On the Fusion Data Intelligence Console, click **Go to Home Page**.
2. On the Oracle Analytics Home page, click **Create**, click **Workbook**, in Add Data, select **SCM – Custom Sales Orders**, and then click **Add to Workbook**.



3. Confirm that the workbook is refined, renamed, and reordered as specified, and report runs as expected.

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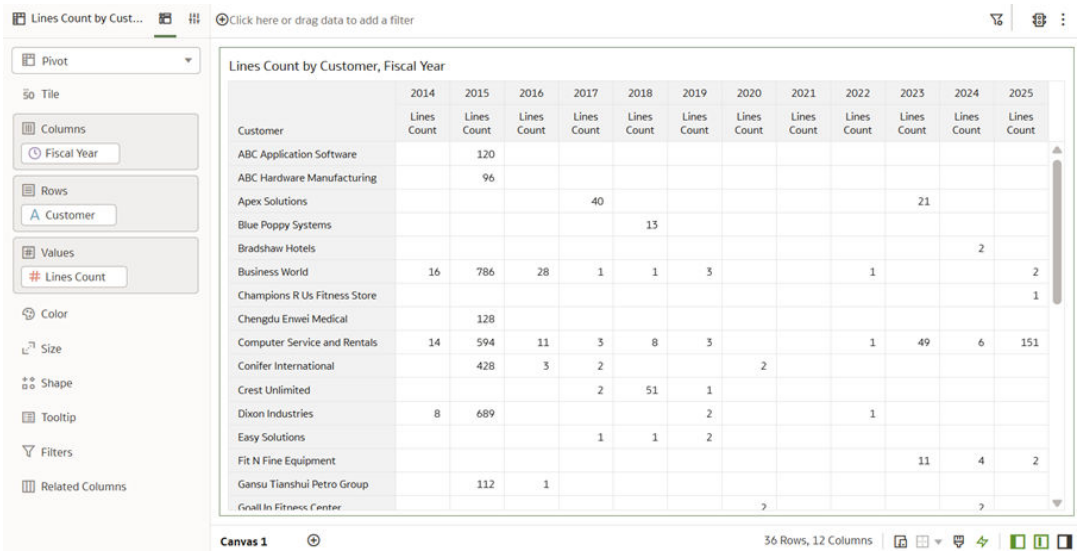

Customer	2014 Lines Count	2015 Lines Count	2016 Lines Count	2017 Lines Count	2018 Lines Count	2019 Lines Count	2020 Lines Count	2021 Lines Count	2022 Lines Count	2023 Lines Count	2024 Lines Count	2025 Lines Count
ABC Application Software		120										
ABC Hardware Manufacturing		96										
Apex Solutions				40						21		
Blue Poppy Systems					13							
Bradshaw Hotels											2	
Business World	16	786	28	1	1	3			1			2
Champions R Us Fitness Store												1
Chengdu Enwei Medical		128										
Computer Service and Rentals	14	594	11	3	8	3			1	49	6	151
Conifer International		428	3	2			2					
Crest Unlimited				2	51	1						
Dixon Industries	8	689				2			1			
Easy Solutions				1	1	2						
Fit N Fine Equipment										11	4	2
Gansu Tianshui Petro Group		112	1									
Goall In Fitness Center							2				2	

Use Case 9: Create a Subject Area

You can create a subject area to present and secure a custom view of a business model to focus on a particular business function.

The prebuilt semantic model doesn't contain the required *Google Analytics* business model and metrics. In this use case, you create, model, and present the *Google Analytics* subject area that contains data from an external source such as Google Analytics. To this subject area, add a custom fact *Fact – Google* and custom dimension *Google Date*.

You can apply the concepts covered in this use case to any of the Fusion Data Intelligence subscriptions. The use case may reference Autonomous AI Lakehouse prebuilt tables and synonyms and mock custom database tables and views. If you've activated the specified Fusion Data Intelligence subscription, you may use the samples provided. The recommendation is to substitute the sample objects for your own custom Autonomous AI Lakehouse objects such as custom table, materialized view, view, custom synonym, or data augmentation dataset synonym.

In this task, you:

1. Add a Custom Fact to the Semantic Model
2. Add a Custom Dimension to the Semantic Model
3. Join the Custom Fact to the Custom Dimension
4. Present Custom Fact and Custom Dimension in the Semantic Model
5. Apply and Publish the Customizations
6. Validate the Results

Ensure that you refer to Upload Samples for the Semantic Model Extensions Use Cases and complete these prerequisites:

- Create a sandbox titled MySandbox5Mar25. See Create a Sandbox. Or, edit an existing sandbox on the Semantic Model Extensions page; for example, by clicking the MySandbox5Mar25 sandbox.
- Create the sample fact table, FDI_X_DUMMY_GOOGLE_DATA_F, in the autonomous data warehouse associated with your Fusion Data Intelligence instance using the sample files FDI_X_DUMMY_GOOGLE_DATA_F.xlsx or FDI_X_DUMMY_GOOGLE_DATA_F.sql.

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- Grant semantic model access to the table FDI_X_DUMMY_GOOGLE_DATA_F view for the OAX$OAC schema using this SQL script:

```
GRANT SELECT ON "OAX_USER"."FDI_X_DUMMY_GOOGLE_DATA_F" TO "OAX$OAC";
```

- Create the FDI_X_GOOGLE_DATE_D_V view using this SQL script:

```
CREATE OR REPLACE FORCE EDITIONABLE VIEW
"OAX_USER"."FDI_X_GOOGLE_DATE_D_V" ("CALENDAR_DATE", "CAL_MONTH_NUMBER",
"CAL_YEAR_ID") DEFAULT COLLATION "USING_NLS_COMP"  AS
  (
SELECT CALENDAR_DATE, CAL_MONTH_NUMBER, CAL_YEAR_ID
FROM DW_DAY_D
);
```

- Grant semantic model access to the FDI_X_GOOGLE_DATE_D_V view or the OAX$OAC schema using this SQL script:

```
GRANT SELECT ON "OAX_USER"."FDI_X_GOOGLE_DATE_D_V" TO "OAX$OAC";
```

- Validate that the data is loading from the sample as expected using the following SQL script:

```
SELECT * FROM OAX_USER.FDI_X_GOOGLE_DATE_D_V;
```

- Validate that the data is loading from the sample as expected using the following SQL script:

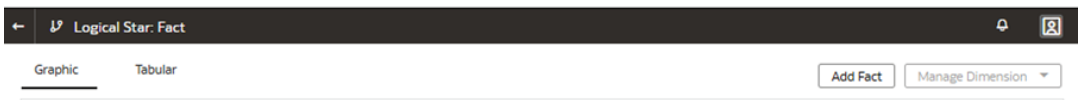
```
SELECT * FROM OAX_USER.FDI_X_DUMMY_GOOGLE_DATA_F;
```

Add a Custom Fact to the Semantic Model

You create a logical star to define the autonomous data warehouse objects, fact measures, display labels, keys, aggregation rules, and content levels.

In this step, you create a logical star to define custom fact *Fact – Google* referencing the autonomous data warehouse object *FDI_X_DUMMY_GOOGLE_DATA_F*.

1. On the Semantic Model Extensions page, click the **MySandbox5Mar25** sandbox.
2. Click **Perform Action**, click **Manage Logical Star**, select **Create Logical Star**, and then click **Next**.
3. On the Logical Star: Fact page, click **Add Fact**.



4. On the Add a Fact page, in step 1 of the wizard, select **OAX_USER** in **Schema**, select **FDI_X_DUMMY_GOOGLE_DATA_F** in **Object**, and rename **Fact Name** as **Fact - Google**. Select the **Use for Key** checkbox for **GOOGLE_SESSION_DATE** source column, select the **Select Fact** checkbox for **GOOGLE_ANALYTICS_ACTIVEUSERS** and **GOOGLE_ANALYTICS_NEWUSERS** source columns, and click **Next**.

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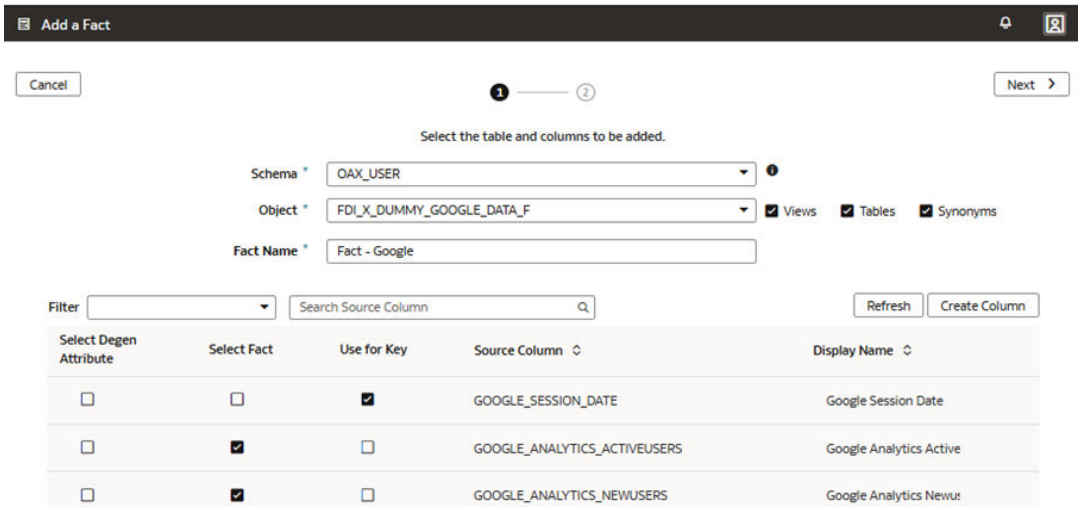
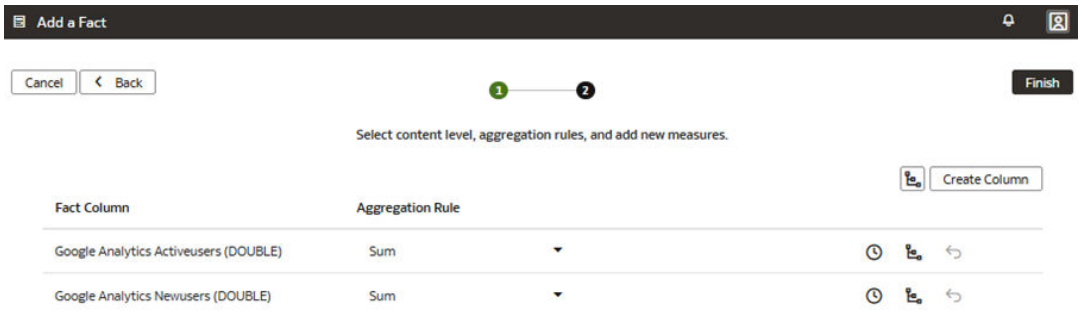


5. Leave the aggregation rules as **Sum** and click **Finish**.



6. Review the custom fact in the graphic mode.



7. Continue to the next task without exiting the wizard, *Add a Custom Dimension to the Semantic Model*.

Add a Custom Dimension to the Semantic Model

You edit the logical star to define the autonomous data warehouse objects, attributes, display labels, keys, and hierarchy.

In this step, you edit *Fact – Google* logical star to add a custom dimension *Dim – Google Date* referencing the autonomous data warehouse object *FDI_X_GOOGLE_DATE_D_V* and define a multi-level hierarchy named *Google Hierarchy*. For each level, the use case defines a unique primary key and display attribute.

1. On the Logical Star: Fact page, click **Manage Dimension** and then click **Add Dimension**.

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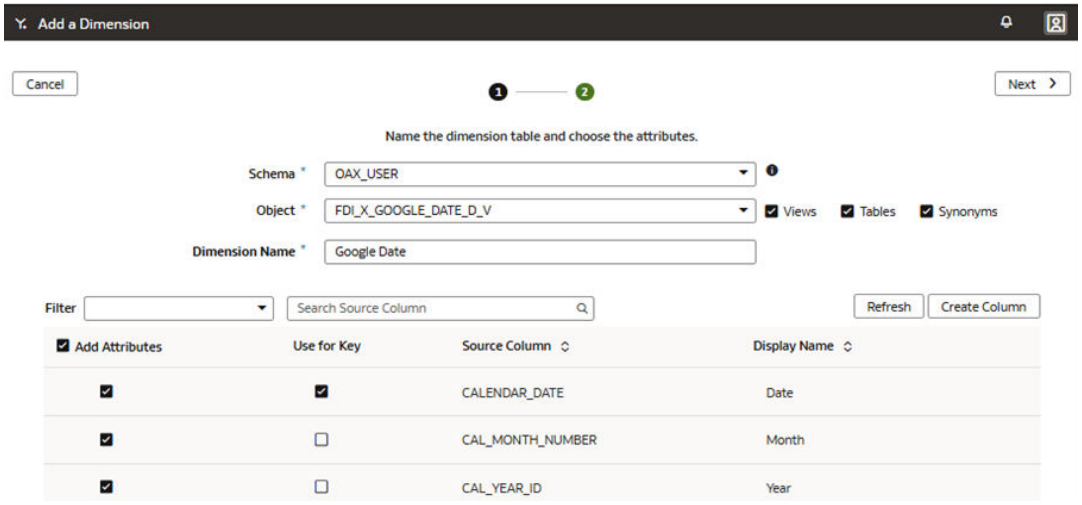
2. On the Add a Dimension page, in step 1 of the wizard, select **OAX_USER** in **Schema**, select **FDI_X_GOOGLE_DATE_D_V** in **Object**, rename **Dimension Name** as **Google Date**, select the **Use for Key** checkbox for **CALENDAR_DATE** and the **Add Attributes** checkbox for **CALENDAR_DATE**, **CAL_MONTH_NUMBER**, and **CAL_YEAR_ID**. Click **Next**.



3. Under Display Name, rename as follows:
   - Calendar Date as Date
   - Cal Month Number as Month
   - Cal Year Id as Year

> **Note**
>
> For unique names, you can prefix *Google* for Date, Month, and Year.

4. Specify the **Date Hierarchy** for the dimension **Google Date** as follows:
   a. Enter `Google Hierarchy` in **Hierarchy Name**.

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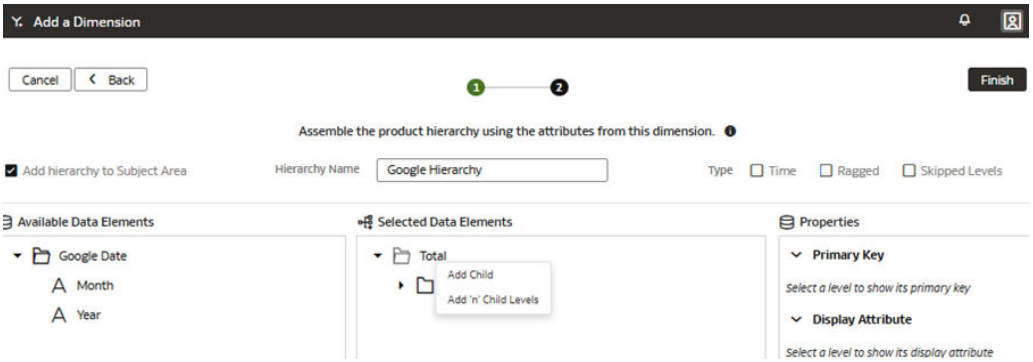
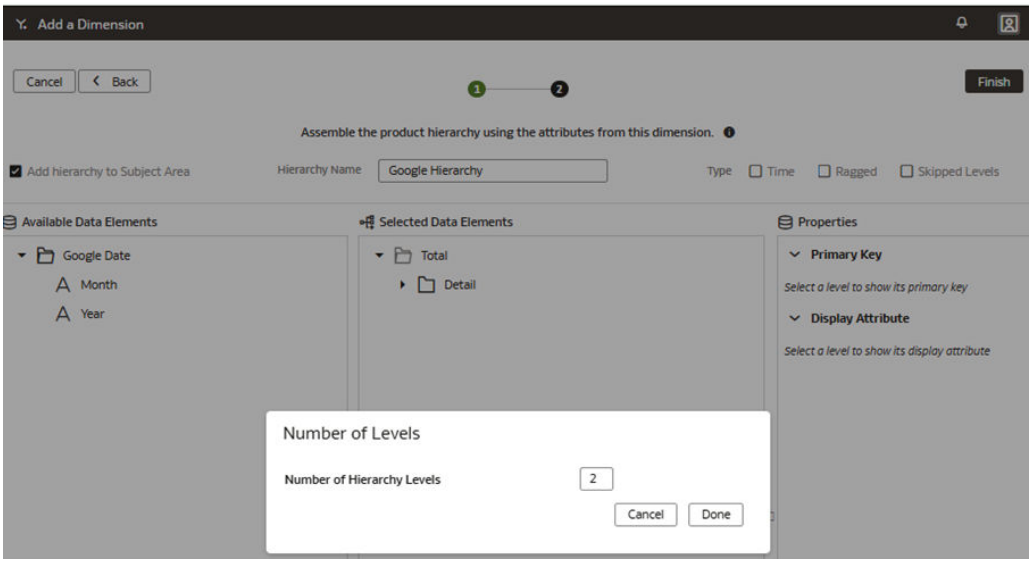


b. Under **Selected Data Elements**, right-click the top level, **Total**, and click **Add 'n' Child Levels**. In Number of Levels, specify 2 as **Number of Hierarchy Levels** and click **Done**.



c. Rename the levels and drag corresponding columns from **Google Date** under **Available Data Elements** into each level folder.

Drag as follows:

- Drag **Google Month** to **Month** level folder.
- Drag **Google Year** to **Year** level folder.
- If not already there by default, drag **Google Date** to **Detail** level folder.

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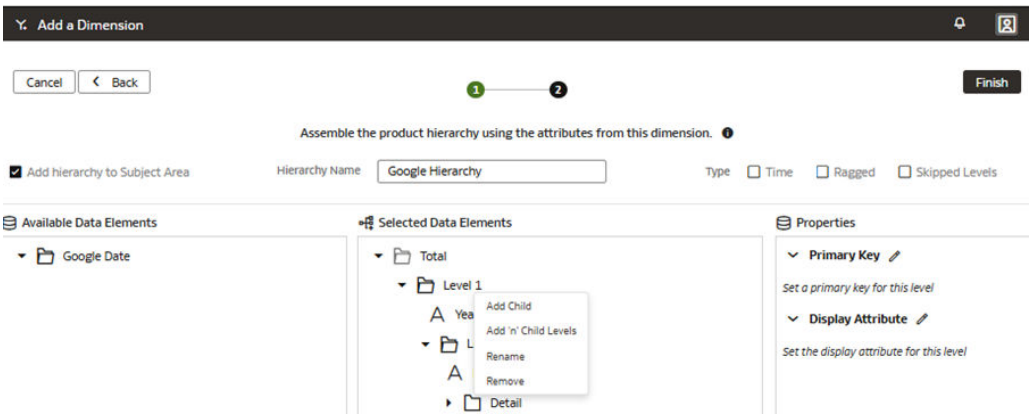
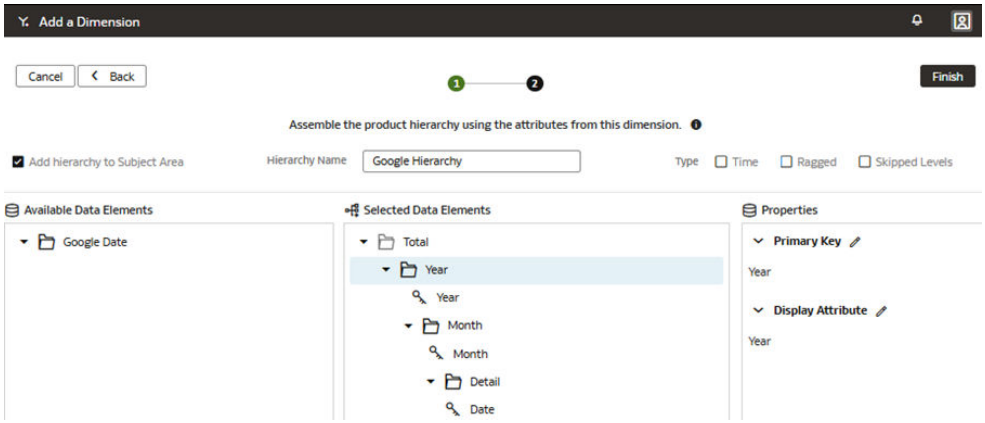
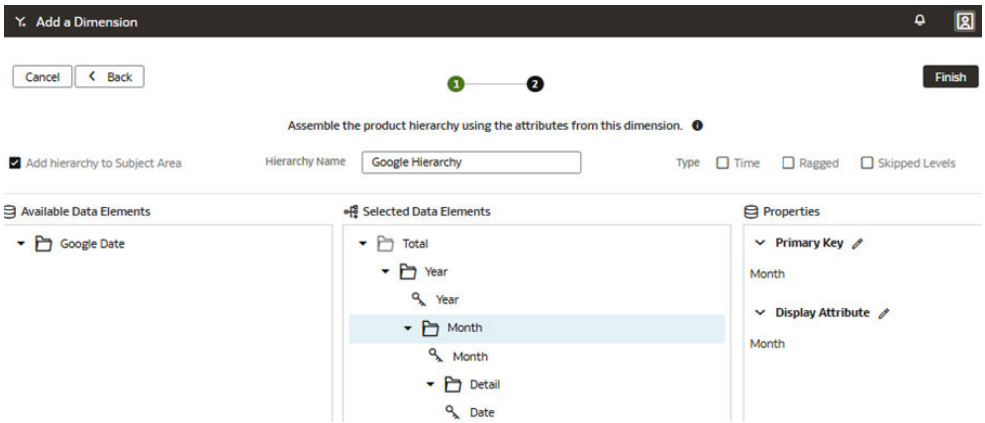


d. Set **Primary Key** and **Display Attribute** for each level.

- **Year Folder (Data Element)** - In **Properties**, select the pencil to set **Primary Key** and **Display Attribute** for Year level to **Google Year**.



- **Month Folder (Data Element)** - In Properties, select the pencil to set **Primary Key** and **Display Attribute** for Month level to **Google Month**.



- **Detail Folder (Data Element)** - In Properties, select the pencil to set **Primary Key** and **Display Attribute** for Detail level to **Google Date**.

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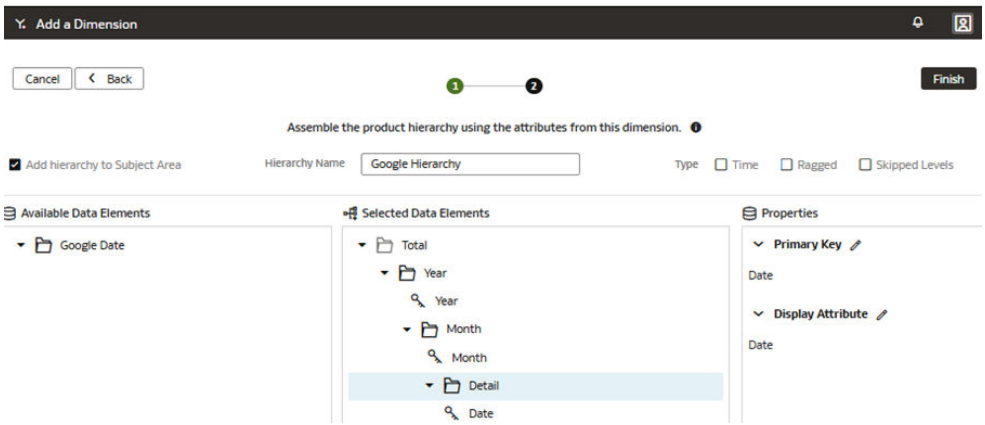


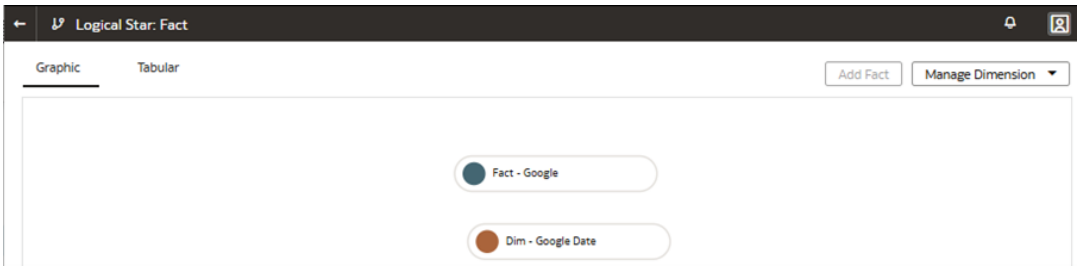
5. Click **Finish**. Continue to the next task without exiting the wizard, *Join the Custom Fact to the Custom Dimension*.

Join the Custom Fact to the Custom Dimension

You join the custom dimension hierarchy to the custom fact by defining the join type and join condition. Although you can define complex joins, use standard joins where possible.

In this step, you define a standard Inner join on the custom *Fact – Google* fact to the custom dimension hierarchy *Dim – Google Date* using the *Google Session Date* key.

1. On the Logical Star: Fact page, drag from the custom fact (**Fact - Google**) circle to the custom dimension (**Dim - Google Date**) circle to open the Join dialog.



2. In Join, specify **Inner** as **Join Type**, under **Join Condition**, select **Google Session Date (DATE)** for **Fact - Google**, select **Google Date (DATE)** for **Dim - Google Date**, and click **Done**.

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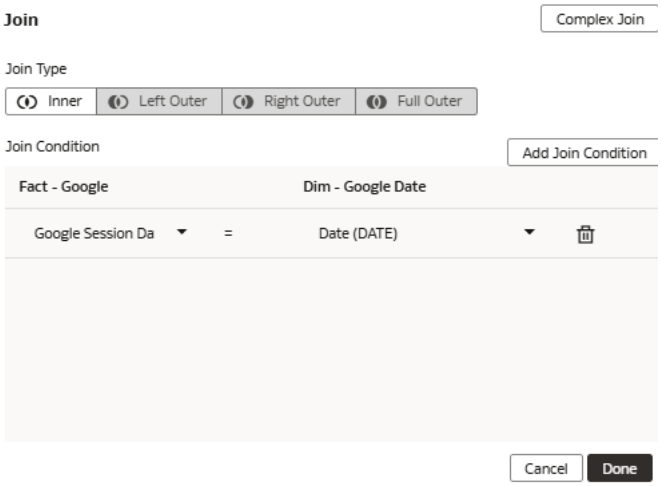
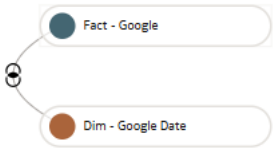


3. View the join in graphic mode.



4. Click the back arrow on the Logical Star: Fact page to navigate back to the Sandbox: MySandbox5Mar2025 page.

Present Custom Fact and Custom Dimension in the Semantic Model

You modify the subject area to present the new custom fact and its aggregable metrics, along with the new custom dimension attributes and hierarchy levels.

The fact is represented as a folder containing measure columns in the subject area. The dimension is represented as a folder containing columns in the subject area. The hierarchy levels are represented at the bottom of the custom dimension folder. Hierarchy levels used in Workbooks can expand and collapse to reveal or hide detailed rows.

In this step, you create a subject area *Google Analytics* to present the new fact folder *Fact – Google* containing the *Google Analytics Activeusers* and *Google Analytics Newusers* measures, along with the new custom *Google Date* folder containing the custom hierarchy *Google Hierarchy* with two levels (Year, Month) and lowest Detailed level.

1. On the Sandbox: MySandbox5Mar2025 page, click **Perform Action**, click **Manage Subject Area**, select **Create a Subject Area**, and then click **Next**.
2. On the Create a Subject Area page, in step 1 of the wizard, enter `Google Analytics` in **New Subject Area Name**, and click **Next**.

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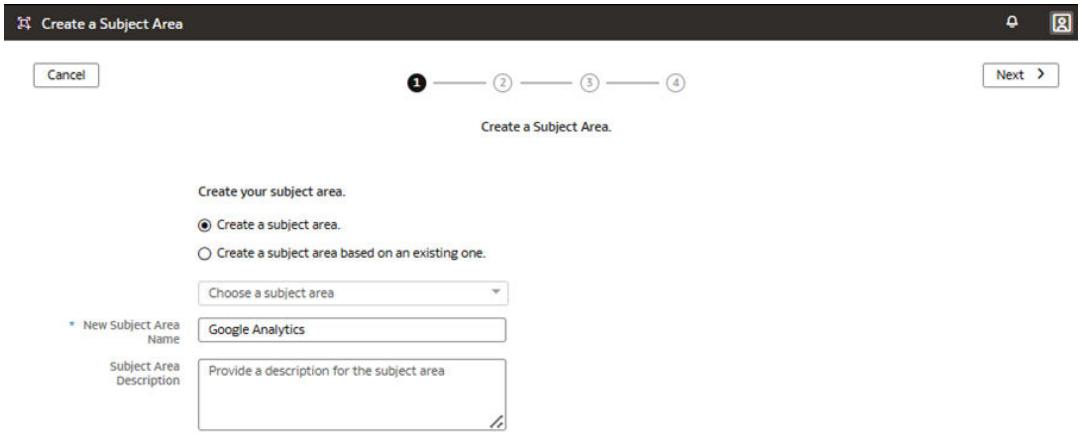
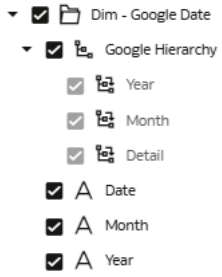
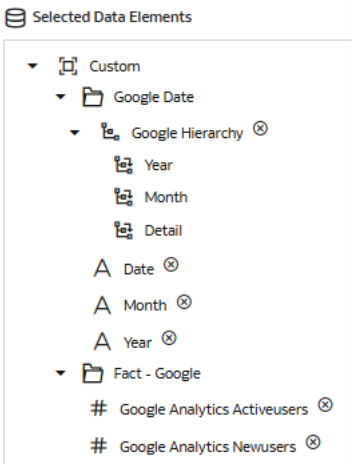


3. In step 2 of the wizard, click **Manage Elements** and then click **Manage New Customizations**.
4. In Add a Subject Area, select the custom dimension, **Dim - Google Date** dimension folder (including the hierarchy), and the custom fact, **Fact - Google** along with all the measures, and then click **Add**.



5. Review and click **Next**.



6. In step 3 of the wizard, right-click the items in the custom subject area to rename as desired or drag the items to reorder and click **Next**.

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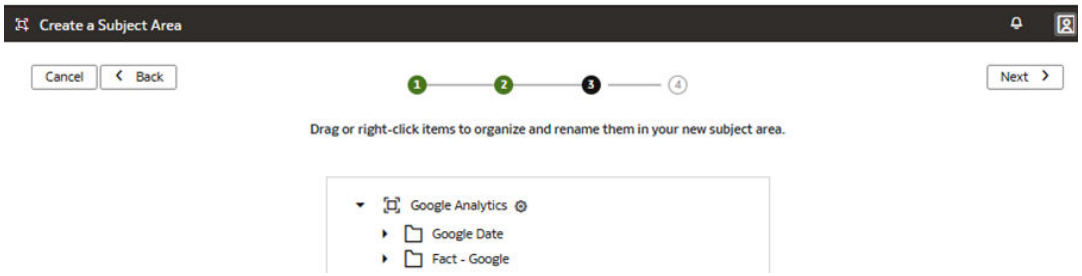
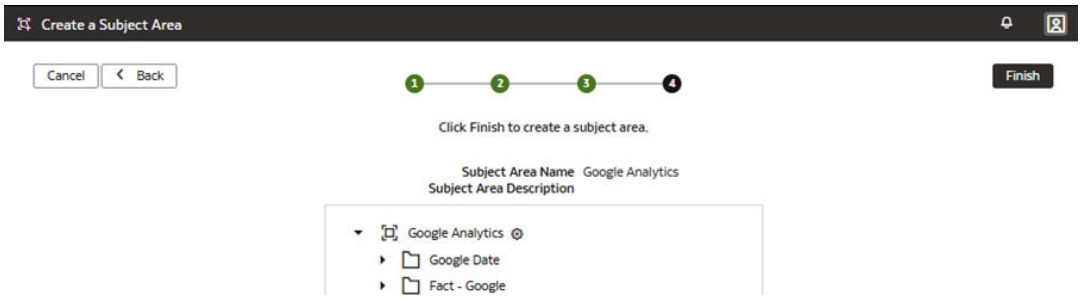


7. Review and click **Finish**.



Apply and Publish the Customizations

You apply the changes to compile the sandbox and ensure that the sandbox is error free.

Then, you use the Activity tab to debug, resolve errors, and confirm that the Apply Changes action completes and is successful. Finally, you merge the changes to the main sandbox and publish the main user extensions to share the new extensions with consumers.

In this step, you apply the changes, use the Activity tab to monitor the status, merge the *MySandbox5Mar25* sandbox to the Main sandbox, and then publish the main user extension.

1. On the Semantic Model Extensions page, hover over the **MySandbox5Mar25** sandbox to view **Actions**, and then click **Apply Changes**.
2. Click the Activity tab to monitor the **Apply Changes** task on the Activity page.
3. After the changes are successfully applied, click **Publish Model** on the Semantic Model Extensions page.
4. In Publish Model, in User Extensions, select **MySandbox5Mar25** and in Security Configurations, select **All**.
5. Click **Publish**.
6. On the Semantic Model Extensions page, click the Activity tab to monitor the **Publish Customizations** task.

   See Apply Changes and Publish Model.

Validate the Results

Verify that your customizations are visible in the semantic model.

1. On the Fusion Data Intelligence Console, click **Go to Home Page**.
2. On the Oracle Analytics Home page, click **Create**, click **Workbook**, in Add Data, select **Google Analytics**, and then click **Add to Workbook**.

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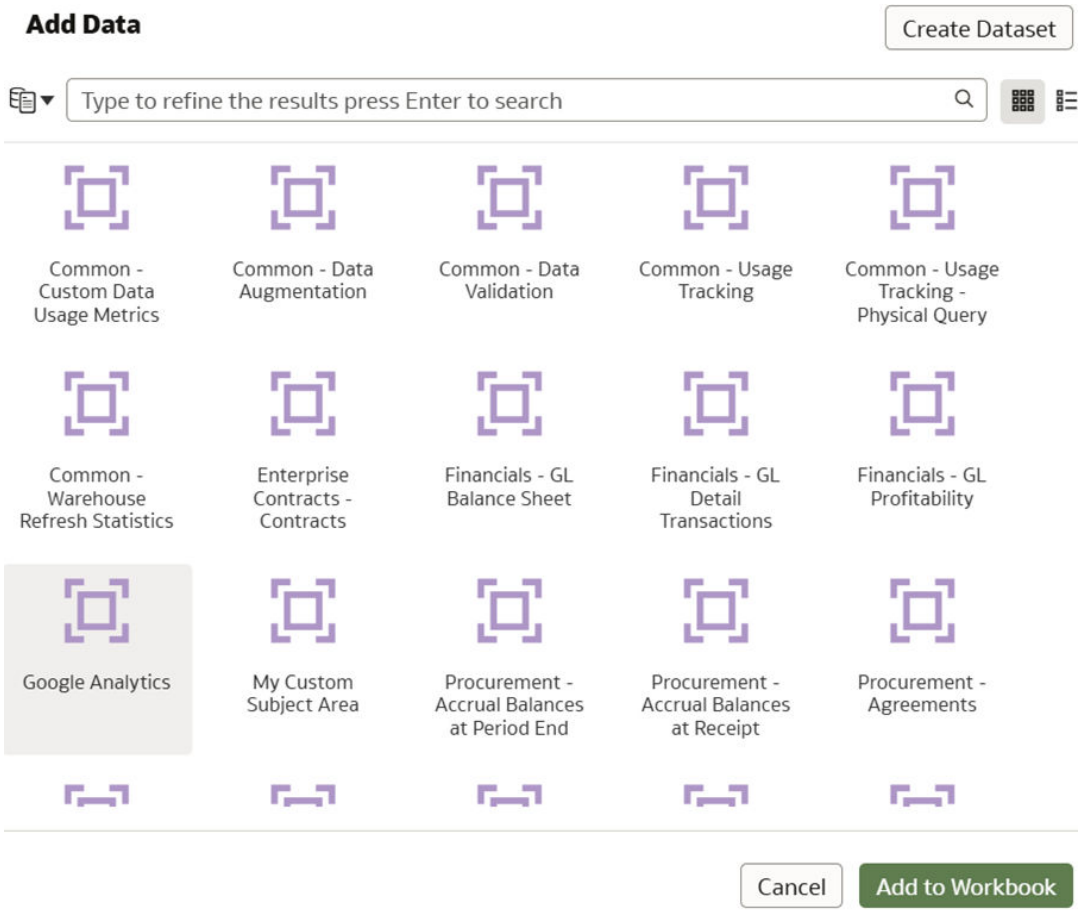

3. Create a report based on Google Analytics, the custom subject area that you created. Use the columns from the **Google Date** folder and measures from **Fact - Google** to confirm that the fact and dimension are joined correctly.

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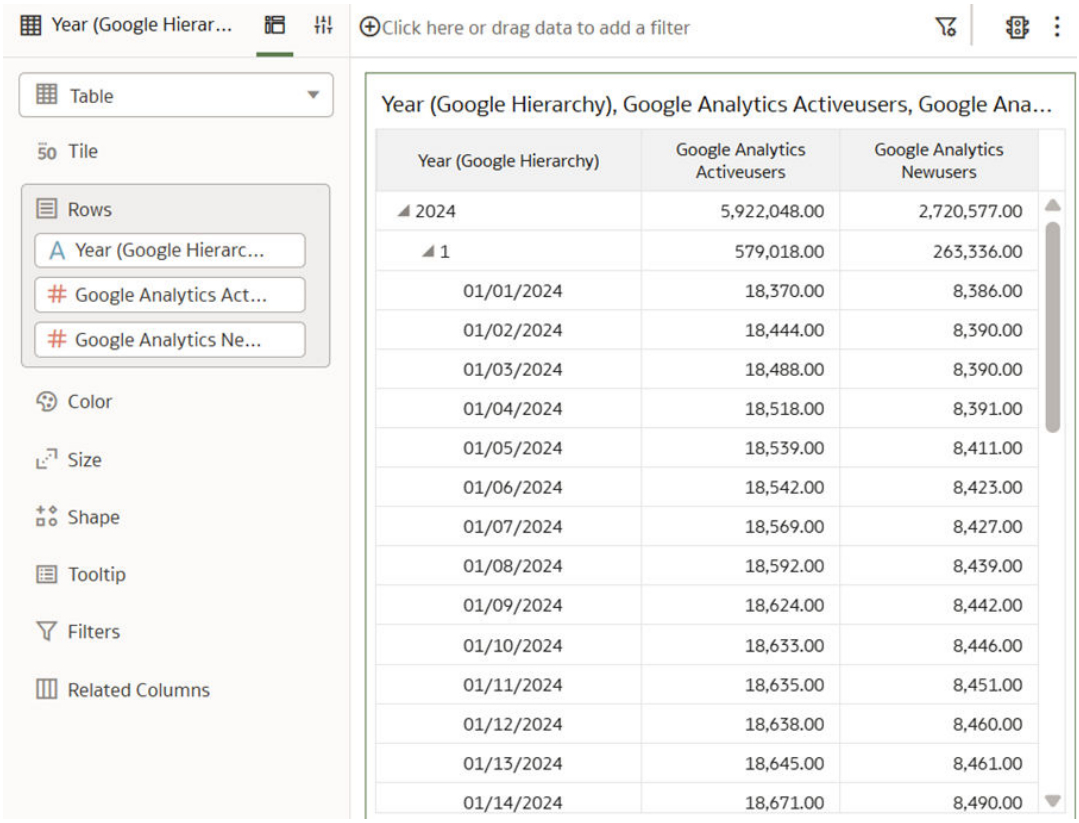

Generate and Download the Sandbox Report

You can generate and download a CSV report of the semantic model data lineage where it exports the customizations for a given sandbox.

The downloaded report enables you to quickly understand, compare, and troubleshoot customizations. You can generate and download these reports for the main and customization sandboxes. The Download Sandbox Report option is activated after the Generate Sandbox Report process is complete.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **User Extensions**.
4. On the Semantic Model Extensions page, under Customizations Sandbox, hover over an applicable sandbox to view **Actions**, click **Sandbox Report**, and then click **Generate Sandbox Report**.
5. Click the **Activity** tab on the Semantic Model Extensions page and verify that the state of the **Generate Semantic Model CSV** activity is **Done**.
6. On the Semantic Model Extensions page, under Customizations Sandbox, hover over the sandbox for which you generated the report, click **Actions**, click **Sandbox Report**, and then click **Download Sandbox Report**.

   The system downloads the sandbox report to your local machine.

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Extend the Semantic Model Using the Branch Framework

In the 26.R3 release, the Branch framework for semantic model extensions is deprecated. After all the existing customizations in the Branch framework automatically migrates to the Sandbox framework, the Branch framework will no longer be available.

> **Note**
>
> Oracle recommends that you migrate to the semantic model extensions Sandbox framework. See Migrate to the Sandbox Framework for Semantic Model Extensions.

Migrate to the Sandbox Framework for Semantic Model Extensions

Prior to switching over to the Sandbox framework for semantic model extensions, note the tasks and ensure to take appropriate action where required in the suggested sequence.

Begin by validating and resolving all semantic model validation errors within the non-production instance. Subsequently, migrate the validated (error-free) semantic model to all other instances, including production, while all instances are still on the branch framework. If you have multiple instances such as development, stage, and production, prepare a semantic model extensions migration timeline for each instance. After the initial instance is migrated, it isn't possible to bundle the semantic model extensions until the target instance is on the same semantic model extension framework. It's recommended to complete the migration of the production instance promptly after migrating the lower instances to avoid bundle delays.

Topics:

1. Perform the Pre-Migration Tasks
2. Validate the Main Branch
3. Deploy Validated Branch to Production
4. Schedule the Migration
5. Perform the Post Migration Verifications
6. Revert to the Branch Framework for Semantic Model Extensions

Perform the Pre-Migration Tasks

Prior to the migration, note these and take appropriate action:

1. Ensure that you schedule or apply all the release updates prior to the migration to avoid not being able to rollback.

   The option to revert to the Branch framework gets disabled after 60 days from the migration date or an Application update, if it happens first post migration to the Sandbox framework.
2. As a pre-clean up task, create a Semantic Model Extensions bundle of the published branch prior to making any semantic model extension changes.
3. Delete or enable disabled steps in the Main branch to be migrated because the migration process migrates only the enabled steps.
4. Delete or merge all unpublished branches because these won’t be migrated.

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5. Merge the published branch with the main branch.
6. Publish the Main Branch, confirm that all steps are error free, and confirm that all the subject areas and security referenced in workbooks operate as expected.
7. As a post-clean up task, create a Semantic Model Extensions bundle of the published Main Branch.
8. If you have multiple instances such as development, stage, and production, prepare a semantic model extension migration timeline for each instance. After the initial instance is migrated, it won't be possible to bundle the semantic model extensions until the target instance is on the same semantic model extension framework. After successfully validating the main branch in the lower environment and resolving all validation report errors, bundle the validated semantic model and migrate it to production.

Validate the Main Branch

On the Semantic Model Extensions page, when you see the banner to schedule the migration, don't click **Schedule now** until you've validated the main branch successfully with no errors.

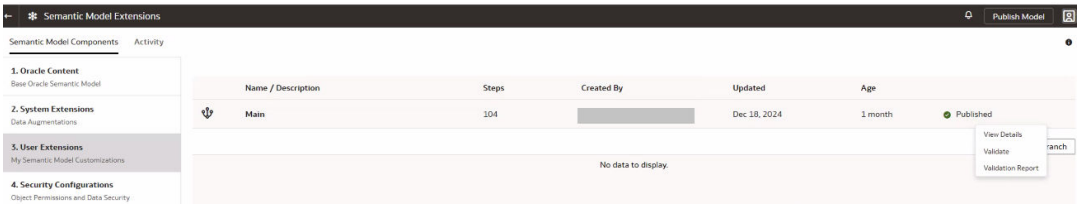
Note these and take applicable action prior to initiating the validation process:

- Don't perform any development or administrative activities that effect the semantic model extensions during validation or while the migration is in process. This includes modifying existing data augmentation or creating new data augmentation that have the semantic model extensions.
- Remove leading and trailing spaces from the object names.
- Ensure all keys are present on the join columns.
- Confirm all referenced source database objects and columns exist in Autonomous AI Lakehouse.
- Confirm grants are applied on all referenced source database objects using

  ```
  GRANT SELECT ON "OAX_USER".“TABLE_VIEW" TO "OAX$OAC";
  ```

- Resolve any duplicate object names.

1. On the Semantic Model Extensions page, click the Actions Menu for the Main Branch, and then click **Validate** to produce the Validation report.



2. Click the Activity tab on the Semantic Model Extensions page and wait for the validation of the main branch to complete. If the **State** is **Failed**, then don't proceed with the migration until you've resolved all of the errors.

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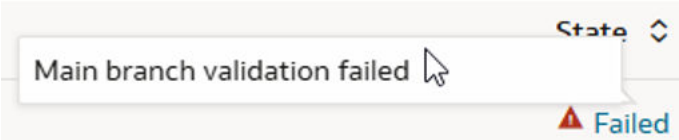
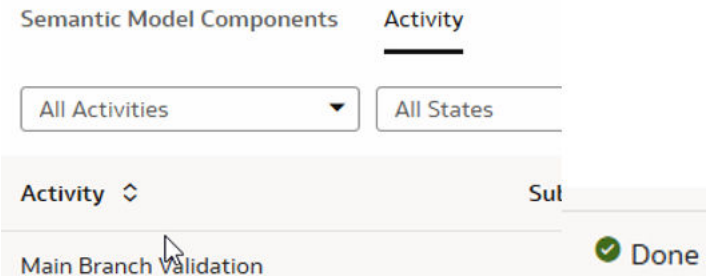


3. Click the Actions Menu for the Main Branch, and then click **Validation Report** to download and review the validation report.

> **Note**
>
> The validation report is enabled only if the validation fails with errors.

4. Resolve all errors in the validation report and repeat Validate and Validation Report steps until you've resolved all errors. For any errors that you can't resolve, contact Oracle Support before proceeding.
5. Click the Activity tab on the Semantic Model Extensions page and wait for the validation of the main branch to complete. If the **State** is **Done** and the report is error free, then proceed with scheduling the migration.



> **Note**
>
> To avoid migration issues, resolve all errors and deploy the validated semantic model bundle to all instances, including production, while maintaining the branch framework, before initiating the migration.

Deploy Validated Branch to Production

After successfully validating the main branch in the lower environment and resolving all validation report errors, bundle the validated semantic model and deploy it to the production environment.

See Deploy a Bundle.

Before scheduling the migration of the lower instance, it's crucial to perform a final user acceptance test in the production environment. After you migrate the lower instance, bundling between the migrated sandbox and the production branch instances isn't possible, until you migrate the production environment to the Sandbox framework.

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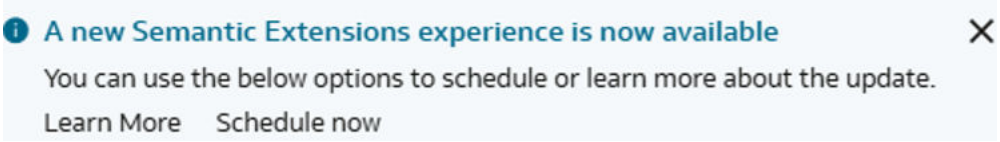
Schedule the Migration

You can initiate migration of your extensions to the Sandbox framework by submitting the request from the banner message on the Semantic Model Extensions page when you click **User Extensions**.

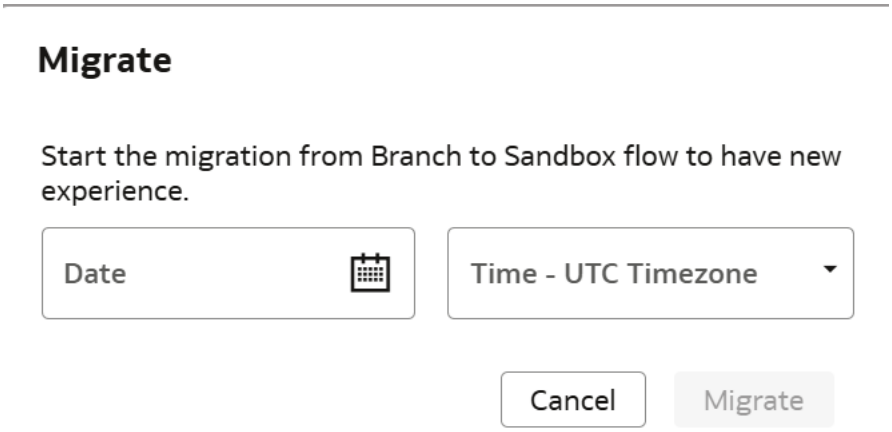
Set up the migration to happen automatically by scheduling it from the banner message. Ensure that you schedule the migration during a low usage period to avoid reporting outages.

> **Note**
>
> You can't use the semantic model extensions capability during the migration process.

1. On the Semantic Model Extensions page, in the banner announcing the ability to schedule the migration, click **Schedule now**.



2. In the Migrate dialog, specify the date and time for the migration to begin.



3. Track the progress of the migration in the Activity tab on the Semantic Model Extensions page when the migration starts.

Perform the Post Migration Verifications

After the migration is complete, note these and take appropriate action:

The migration process converts the single Main Branch to a single Semantic Model Extensions Sandbox. It migrates the existing customizations to the new framework. The security configurations remain unchanged in the new framework, hence no action from you is required.

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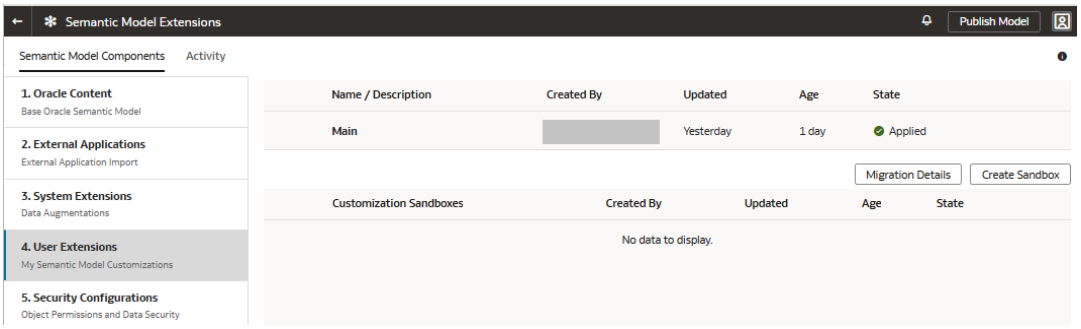
1. On the Semantic Model Extensions page, click the Activity tab and monitor the status of the migration.

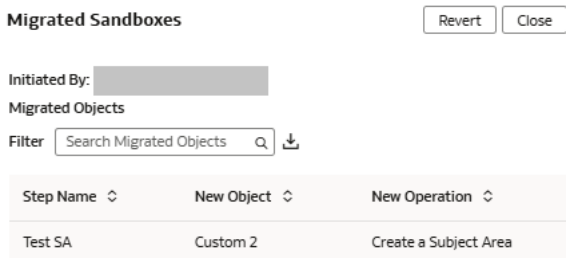
   Once the migration is complete, you receive a notification on the Console. If the migration fails, click the **Failed** state in the Activity tab for the applicable task and resolve the issues. For any unresolvable issues, reach out to Oracle Support.

2. After the migration is completed successfully, on the Semantic Model Extensions page, click **Migration Details**.



3. In Migrated Sandboxes, click the download icon to download the migration report.

   This report shows which customizations are available for which object with the Main branch object to the Main sandbox object mapping. This enables you to see all your customizations that have been brought over. In most cases, operations like Add Dim, Add Fact, Add Variable, Extend Dimension, and Add Columns have 1:1 correspondence between the old and the new framework. The Main sandbox is published and ready for use. All your subject areas, visualizations, and reports remain unchanged.



4. Sign in and sign out of your service after the migration completes. Confirm that all the subject areas and security referenced in the workbooks operate as expected.

Revert to the Branch Framework for Semantic Model Extensions

Post migration, an option to revert to the Branch framework if customizations aren't as expected is available. The migration rollback option gets disabled after 60 days from the migration date or an Application update, if it happens first post migration to the Sandbox framework.

Note these:

- Ensure to complete the reversal process within this period if you must revert. If you choose to revert, then the semantic model rolls back to the state prior to the migration being initiated. You can't rollback the migration if you've completed an Application update after completion of the migration process.

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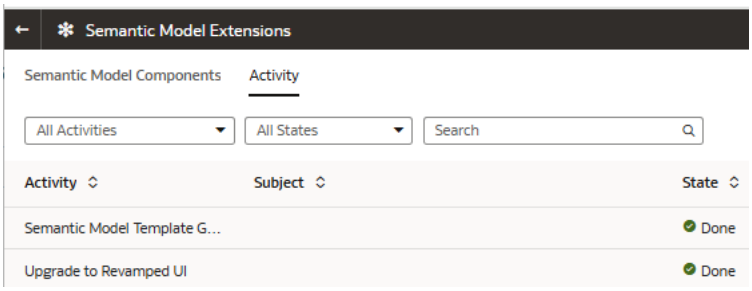
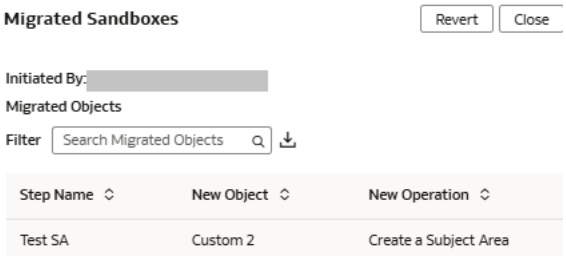
- Oracle maintains a backup of the existing semantic model extensions at the time the migration is initiated. If you encounter issues during or after migration, Oracle uses the backup to troubleshoot and enable required extensions on the new framework. Should you choose to revert to the previous state, the semantic model is restored from this backup.
- If you've made further changes to the semantic model in the new framework before choosing to revert, these customizations can't be migrated to the previous semantic model extensions framework.

1. On the Semantic Model Extensions page, click the Activity tab and verify that the status of the scheduled migration task **Upgraded to Revamped UI** is **Done**.



2. On the Semantic Model Extensions page, click **Migration Details**.
3. In Migrated Sandboxes, click **Revert** to rollback the migration.



Add Security Configurations

Add security configurations to secure the subject areas and data with prebuilt and custom duty and data type of application roles.

You can export your custom object security configuration permissions for subject areas and their elements to a CSV file for review. See Generate and Download a Security Report.

Use the Custom Security Context for semantic data model security. See Define and Assign Custom Security Contexts.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **Security Configurations**.
4. In the Security Configurations region, search for the prebuilt "Configure Object Permissions" to configure permissions for objects such as subjects areas and their elements with duty type of application roles.

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See Configure Object Permissions.

5. Optional: In the Security Configurations region, click **Reapply Steps** to validate the security configuration-related steps against the current state of the model.

Configure Object Permissions

Configure the permissions for objects such as subject areas and its elements with the ready-to-use or the custom-created duty roles.

You secure the subject areas and their elements using the **Configure Object Permissions**, a prebuilt single step. You edit this single step to specify the subject areas, their elements, and the duty roles to secure these with. The elements that you can secure are from the Main branch. Hence, if you need a newly added object to be secured, then you must ensure that the branch containing the newly added object is merged with the Main branch before configuring the security. If a custom-created role is no longer available, then the security configuration for that role is automatically updated in the existing Configure Object Permissions step.
By default, the list of permissions by duty role displays the explicit permissions set for the subject area or the elements of the selected subject area. If you want to add more permissions, then select the duty role from the list and set the required permission. Permission levels that you can set are:

- Default (inherited from the parent element).
- No Access (deny access to the respective subject area or its elements)
- Read-only (access to read the respective subject area or its elements).

Repeat the operation for all the subject areas or the subject area elements that you need to secure.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **Security Configurations**.

   You see your existing security configurations and the prebuilt object permissions-related step.
4. In the Security Configurations region, search for the prebuilt "Configure Object Permissions", and hover over it to view **Actions**, and then click **Edit**.
5. In step 1 of the wizard, click **Next**.
6. In step 2 of the wizard, select the subject areas or elements and set the corresponding desired permission to the duty role selected from the list, and then click **Next**.
7. Review your changes and click **Finish**.

View Activity History of Semantic Model Extensions

View an audit of all activities performed on the semantic model.

Amongst the activities, you may see that the system steps have been applied. Oracle Fusion Data Intelligence applies the system steps in the following scenarios:

- Any changes to augmentations and new augmentations. A new augmentation replays all the steps in the Main branch because of implicit dependencies.
- New module activations. Module activations can run augmentations related to that module, but the Main branch steps are always replayed.

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- Any changes done to flexfields (like DFFs) in your Oracle Fusion Cloud Applications instance such as deletion or addition. It doesn’t matter where the DFF's are. If they are deleted in the source, then they get deleted in the prebuilt subject area. Hence, the custom subject area also must be modified to remove it. In this case, augmentation won't fail but the Main branch fails as it's custom and needs to be modified.
- Application update such as the Oracle Fusion Data Intelligence version upgrade also runs the Apply System Steps.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **Activity History** to view an audit of all activities performed on the semantic model.
4. Hover over an activity to view details of the activity.

Move Your Customizations to Another Environment

When your changes to data augmentations, custom attribute mapper, semantic model, security configurations, and customized KPIs are ready for promotion, use the Bundles functionality to move the desired objects to other environments.

See Bundle Your Application Artifacts.

Republish Your Customizations

As the owner of the user extensions or a user with the Modeler Administrator role, you can republish them if you’ve modified them after publishing them initially.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. On the Semantic Model Extensions page, click **User Extensions**.
4. In the User Extensions region, you see a warning icon and the **Republish** button on the Semantic Model Extensions page.
5. Click **Republish** to publish your user extensions with the latest details.

Merge Your External Applications

If you have an external semantic model from standalone Oracle Analytics Cloud, Oracle Analytics Server, or Oracle Business Intelligence Enterprise Edition, you can merge it with the semantic model of Oracle Fusion Data Intelligence only in your non-production instance.

You can also merge your existing catalogs in the external Oracle Analytics Cloud with those in the Oracle Analytics Cloud instance associated with your Oracle Fusion Data Intelligence instance. Both external semantic model and semantic model extensions can co-exist and you can include the external semantic model in your semantic model extensions. On the Publish Model page, select "Yes" if you want the external semantic model to be included.

Merging external semantic models may require you to scale up your Oracle Analytics Cloud compute resources to ensure better performance. In particular, if you're merging a semantic model that was in use on a live Oracle Analytics Cloud instance, then Oracle recommends

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scaling up Oracle Fusion Data Intelligence's Oracle Analytics Cloud compute resources by the same number of CPUs as the instance the semantic model is merged from.

To successfully merge an external semantic model, you must complete these tasks in the sequence they are listed:

1. Create a custom database schema in the Oracle Autonomous AI Lakehouse associated with your Oracle Fusion Data Intelligence instance. See Create a Custom Database Schema.
2. Migrate or create database objects such as tables, views, and synonyms in the new schema. See Migrate or Create Database Objects.
3. Grant semantic model access to the database objects. See Grant Semantic Model Access.
4. Configure Oracle Analytics Client Tools (Oracle BI Administration Tool).
5. Export the semantic model template.
6. Bring in the custom database objects into the physical layer of the semantic model template by either importing, or merging, or copying and pasting.
7. Prepare your external applications to ensure they work without interruption.
8. Model the custom semantic model objects.
9. Merge the external semantic model with the semantic model of your Oracle Fusion Data Intelligence instance.
10. Validate the results.
11. Bundle the merged semantic model to your production instance.

Configure Oracle Analytics Client Tools (Oracle BI Administration Tool)

The Oracle BI Administration Tool, a component of Oracle Analytics Client Tools, enables you to manage semantic models that define how data is presented in Oracle Analytics Cloud.

The Oracle BI Administration Tool provides capabilities to import your custom database objects or merge existing semantic model metadata into the Fusion Data Intelligence semantic model template. Within the Oracle BI Administration Tool, you can model custom objects and extend supported prebuilt objects.

1. Download Client Tools.

   See Download and Install Oracle Analytics Client Tools

2. Download the wallet of Oracle Autonomous AI Lakehouse associated with the Oracle Fusion Data Intelligence instance.

   See Download Database Connection Information

3. Configure the wallet that you downloaded as follows:

   a. Extract the wallet zip file and copy all the wallet files to: `C:\Oracle\Middleware\Oracle_Home\domains\bi\config\fmwconfig\bienv\core`

   b. Edit the "sqlnet.ora" file, setting DIRECTORY path to `C:\Oracle\Middleware\Oracle_Home\domains\bi\config\fmwconfig\bienv\core`. For example, the DIRECTORY path must be as follows:

   ```
   WALLET_LOCATION = (SOURCE = (METHOD = file) (METHOD_DATA =
   (DIRECTORY="C:\Oracle\Middleware\Oracle_Home\domains\bi\config\fmwconfig
   ```


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```
\bienv\core")))
SSL_SERVER_DN_MATCH=yes
```

> **Note**
>
> Ensure that there isn't a backslash after `\core` to avoid failure.

4. Download Oracle Instant Client.

   See Oracle Instant Client Downloads.

5. Configure Oracle Instant Client as follows:

   a. Copy: `C:\Users\<your username>\Downloads\instantclient-basic-windows.x64-23.6.0.24.10\instantclient_XX_X` to: `C:\Oracle\Middleware\Oracle_Home\bi`. Replace "XX_X" with the applicable numbers.

   b. Navigate to `C:\Oracle\Middleware\Oracle_Home\bi\bifoundation\server\bin` and edit `nqinit.cmd` to set `%EXTRA_PATH%;%BI_PRODUCT_HOME%\instantclient_XX_X` as the value for `EXTRA_PATH`. Replace "XX_X" with the applicable numbers.

Export the Semantic Model Template

The semantic model template is upgraded with each application release. It's recommended to download the latest version of the uploaded semantic model template for any changes.

The semantic model template includes all dimensions available in the semantic model, and each dimension can be extended to address specific business requirements. Facts are included to support the extension of degenerate dimensions. However, apart from these supported extensions, the attributes of prebuilt facts are immutable and can't be altered or modified. To join a custom dimension to a prebuilt fact, import the custom dimension into the semantic model template and associate it with a custom or placeholder fact. Don't create a direct join to the prebuilt fact within the template. After the external application has been merged, the custom dimension is available within the Sandbox framework, where it can be joined to the prebuilt fact.

You can download the semantic model template using either the Oracle Fusion Data Intelligence Console or the Oracle BI Administration Tool.

1. If you're using the Oracle Fusion Data Intelligence Console:

   a. Sign in to your service.

   b. Click **Semantic Model Extensions** under **Application Administration**.

   c. On the Semantic Model Extensions page, in the External Application region, click **Actions**, and then click **Export Semantic Model Template** to download the semantic model template.

2. If you're using the Oracle BI Administration Tool, navigate to **Actions** and then click **Export Semantic Model Template** to download the semantic model template.

3. To obtain the default password for the Semantic Model Template, contact Oracle Support.

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Bring in Custom Database Objects

You can bring in custom database objects into the physical layer of the semantic model template using the Import, Merge, or Copy and Paste methods.

Import Custom Database Objects

Import the custom database objects or merge your semantic model metadata into the physical layer of the semantic model template.

Ensure that your corporate virtual private network (VPN) allows connectivity to your autonomous data warehouse. You can use the transparent network substrate (TNS) entry of the low offering of your autonomous data warehouse to import the tables. For example, `(description= (retry_count=20)(retry_delay=3)(address=(protocol=tcps)(port=<>)(host=<>))(connect_data=(service_name=<>))(security=(ssl_server_cert_dn="CN=my domain.com,OU=my organization,O=organization,L=my location,ST=my state,C=my country")))`

The table import process creates the tables in a separate physical schema. The custom schema definition is temporary. After you've imported the tables and tested, you must revert the settings back to the old state.

> **Note**
>
> Ensure that you revert the prebuilt connections to the original settings before uploading. Don't add any additional connections to the external semantic model.

1. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
2. On the Semantic Model Extensions page, in the External Application region, click **Actions**, and then click **Export Semantic Model Template** to download the template semantic model if you haven't done it previously.
3. Sign in to the Model Administration Tool that's a part of the Oracle Analytics Client Tools.
4. In the Model Administration Tool, open the downloaded semantic model, navigate to **Oracle_Data_Warehouse**, and edit **Oracle_Data_Warehouse_Connection_Pool**.
5. Provide the TNS entry of your autonomous data warehouse and enter the username and password of the custom schema.
6. Save your changes to the connection pool.

Prepare Your External Applications

Verify and update your external applications.

> **Note**
>
> Before June 1, 2026, review and update your external semantic model to meet these latest standards and make sure your external applications continue to work without interruption.

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Verify your external semantic model

What you need to check and update	Perform these tasks…
Hierarchy (logical dimension) based on more than one logical table	• Ensure that the hierarchy (logical dimension) is based on only one logical table (dimension table). Semantic Modeler enforces that a hierarchy (logical dimension) is sourced from one logical table. • Before you migrate the model, go to Model Administration Tool, combine the logical tables, and then delete the logical table that you merged the data from. For example, if you have a Snowflake model that has a hierarchy (logical dimension) sourced from a dimension table and a dimension extension table, go to Model Administration Tool and add the dimension extension table data to the dimension table. After you've combined the logical tables, delete the dimension extension table.
Logical foreign key joins	• Ensure that the semantic model doesn't contain logical foreign key joins. Logical foreign key joins don't exist in Semantic Modeler and won't be included with the migration. • Before you migrate the model, replace the logical foreign key joins with logical joins.
Primary keys	• Ensure that the semantic model's logical levels contain primary keys.
Application Roles	• Ensure that the semantic model uses application roles for object permissions and data security. Because the user-level security was deprecated for semantic models developed in Administration Tool, Semantic Modeler won't migrate any user-level security. In Administration Tool, you can use the Identity Manager to check that the model uses application roles and not users.
Display Folders	• Search the semantic model to find and delete all display folders in the Physical layer and Business Model and Mapping layer. Display folders contain shortcuts to objects. When you delete a display folder it deletes only the shortcuts to the objects and not the objects themselves.
Consistency	• Ensure that the semantic model passes the consistency check before migration. • In Model Administration Tool, run consistency check on the model and fix any errors before migration.

Verify if your external semantic model complies with the standards

To ensure uninterrupted service for your external applications, review and update your external semantic model to comply with these standards. Failure to meet these requirements might result in Oracle ignoring changes, system errors, or the deletion of non-compliant objects.

General:

- The size of external semantic model must be less than 25 MB.
- Catalog folder and objects names must be unique and must not conflict with prebuilt entries.

Connections:

- The external semantic model must connect only to the Oracle Autonomous AI Lakehouse associated with Oracle Fusion Data Intelligence.
- Don't add any additional connections to the external semantic model.

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- Before uploading, reset the prebuilt connections to their original settings. Set the data source name to "DSN" and leave the user name and password fields blank.

Joins and Lookups:

- Logical lookups aren’t supported in the external semantic model.
- Logical foreign key joins aren’t supported in the external semantic model.

Facts

- Logical facts must contain at least one aggregated measure.
- Descriptive attributes must be modeled as degenerate dimensions rather than direct fact attributes.

Dimensions

- Every logical dimension created must be paired with an associated logical hierarchy.
- Dimension granularity must match data. Otherwise, query results will be inaccurate.
- The primary key of the lowest or detail level of a dimensional hierarchy must match the primary key of the logical dimension table that the hierarchy is based on.

Hierarchies

- A hierarchy (logical dimension) must be derived from one and only one logical table (dimension table).
- The parent-child hierarchies defined in external semantic model can't be used for subsequent modeling within the Branch or Sandbox frameworks. Use level-based hierarchies instead.
- Level-based hierarchies require a defined grand total level and a detail level. Set the number of elements at each level to one or more.
- Logical foreign key joins will be deprecated. Delete the logical foreign key joins and replace them with logical joins.
- All logical levels must have a primary key defined.
- Optimize hierarchy performance by limiting available attributes to essential fields.

Columns

- Data types of the conforming columns must match.
- Limit your derived column expressions to 1499 characters to ensure they remain valid.

Security

- User-level security will be deprecated. Update the external semantic model to exclusively use application roles for all object and data security permissions.
- You must provide a display name and description for all custom roles created within the external semantic model.
- If the external semantic model references application roles and groups, then you must create them manually. The merge capability imports only the mappings and doesn't import the roles and groups definitions. Create the applicable groups in your identity provider. Create application roles using the Security page in Oracle Fusion Data Intelligence.
- Use application roles to secure object access and not to manage data security.

Data Augmentations

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- Don't enable the SME Options for Data Augmentation under the Generally Available Features tab on the Enable Features page unless you have already created data augmentation types such as Create Dimension, Create Fact, and Extend Entity. These augmentation types are no longer recommended and might be removed in a future release. SME Options for Data Augmentation directly updates the semantic model, which can trigger errors due to synchronization failures. If you encounter these errors, replace the SME augmentation with a Dataset type augmentation and configure user-defined semantic model extensions instead.

System Variables

- Don't reference system variables in your external application extensions. System variables are allowed in the Sandbox framework.

Bundle Deployment

- You must ensure that the functional areas enabled in the target environment and the development environment from where the template semantic model was extracted are the same to avoid failure of the external application merge.

Model the Custom Semantic Model Objects

Import, merge, copy and paste, or manually configure the semantic model's *business model and mapping* and *presentation* layer objects.

Make the external semantic model consistent, and free of errors and warnings. Ensure that the column mapping is fully qualified in the external semantic model to avoid any application upgrade failures

Merge External Applications

As a modeler, modeler administrator, and security administrator, you can merge or replace the semantic model of an external application such as another Oracle Analytics Cloud instance with Oracle Fusion Data Intelligence. You can also merge your existing catalogs in the external Oracle Analytics Cloud with those in the Oracle Analytics Cloud instance associated with your Oracle Fusion Data Intelligence instance.

Topics:

- Import Semantic Model
- Replace Application
- Import Oracle Analytics Content
- Publish the Merged Model
- Remove the External Application
- Download the Imported Semantic Model

Import Semantic Model

Use the **Semantic Model Import** option to merge your semantic model.

Semantic Model Import option is available during initial import when **Upload Multiple External Applications** is disabled, and it’s always available when **Upload Multiple External Applications** is enabled. When **Upload Multiple External Applications** is disabled, use **Replace Application** to replace the existing application. See Replace Application.

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When merging External Applications, the **Upload Multiple External Applications** setting determines whether the system replaces an existing application or creates an additional one.

- If **Upload Multiple External Applications** is disabled (Single External Application - recommended), the External Application name has no effect, and the existing application is always replaced.
- If **Upload Multiple External Applications** is enabled (Multiple External Applications - recommended only for important business case requirement), using the same name replaces the existing application, while using a different name creates an additional External Application and merges changes from both the current and new semantic models, combining existing customizations with newly introduced customizations.

Use environment-agnostic names for the external application semantic models. Don't use environment-specific suffixes (such as Test, Dev, and Prod) in the semantic model name because this might cause the target instance to merge the semantic model instead of replacing the semantic model.

> **Note**
>
> Import a newer version of the Semantic Model for merging only if some changes are missing in your current version. Importing multiple versions can cause delays due to increased validation and merging requirements. If your updated Semantic Model already includes all the previous changes, it is recommended you replace the model rather than create additional versions. You can replace the model by disabling **Upload Multiple External Applications**, reusing the existing application name, or directly replacing the existing application. If multiple versions of the application were unintentionally imported, delete the older duplicate versions and disable **Upload Multiple External Applications** to prevent future accidental duplication. Retain only the latest version, provided it encompasses all the changes from the previous imports.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. In the External Application region, click **Actions**, and then click **Import Application** to import the external semantic model.
4. In **Select Application and Content to Merge**, if **Upload Multiple External Applications** is disabled (recommended), you can provide any application name. If **Upload Multiple External Applications** is enabled for a business case requirement, use the name of the existing external application to replace the application when the semantic model already includes all previous customizations and changes, or use a different name to merge changes from both current and new semantic models.

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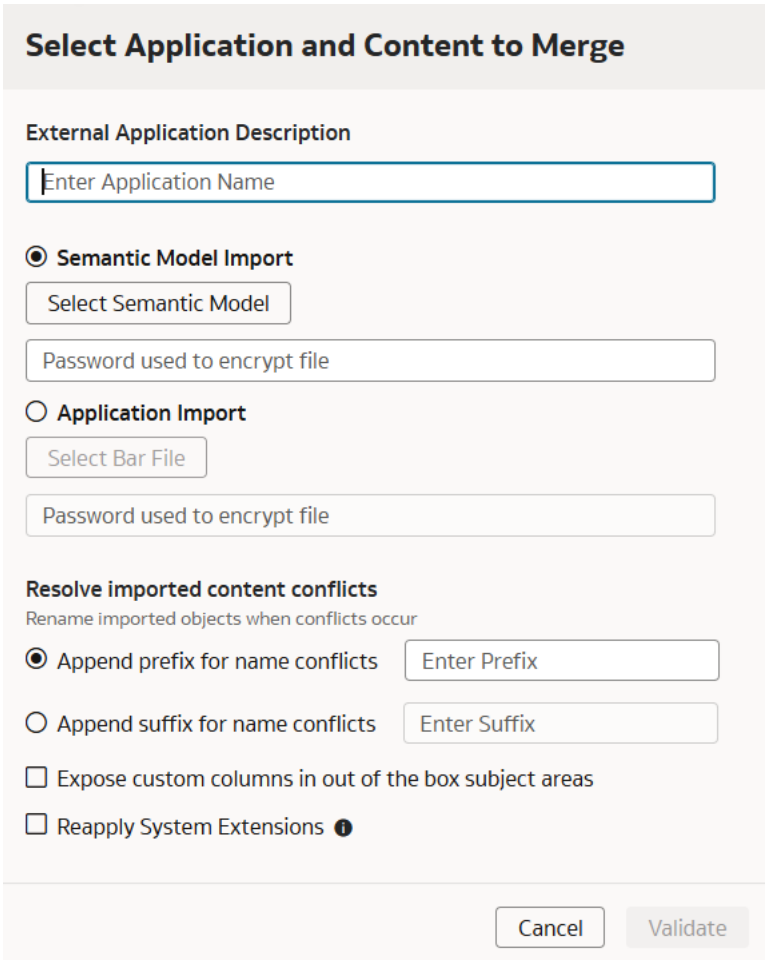

5. In **Resolve imported content conflicts**, choose the option to rename the imported objects with either a prefix or suffix when a conflict occurs.
6. Select **Expose custom columns in out of the box subject areas** to expose columns added to the conformed dimensions in all the applicable subject areas.
7. If you have enabled the **Manual Execution of Apply System Extensions** reporting global parameter to delay applying the system extensions, but now you want to reapply the system extensions, select **Reapply System Extensions**.

   When you select **Reapply System Extensions**, the newly created objects such as data augmentations, applications, and data applications (for example, Frequent Data Refresh, Descriptive Flex Fields, Configurable Account Analysis, Fusion Accounting Hub, and Supply Chain Planning Application) are made available for reference in the semantic model before the external application is imported and merged. This guarantees inclusion of all the necessary system customizations for the external application, but the overall time required for the merge process increases.

   You must **Reapply System Extensions** if you have extended prebuilt dimensions and have selected to **Expose custom columns in out of the box subject areas**.

   See Set Up the Global Report Parameters and Apply System Extensions.
8. Click **Validate**.

   The system validates the external semantic model and displays a report in the Validation tab. The different statuses are:

   - When you import, the status is **Validation InProgress**.

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- If there aren't any errors and validation is complete, the status is **Validation Successful**. The system displays the **Merge Application** button; click it to complete the merge process.
- If there are errors, the status is **Validation Failed**. The system displays the errors and doesn't initiate the merge. You must review the validation report, fix the errors in the external semantic model, and try again. See View Validation Report.

9. On the Semantic Model Extensions page, click the Activity tab to verify that the validation process has completed and then click **Merge Application**.

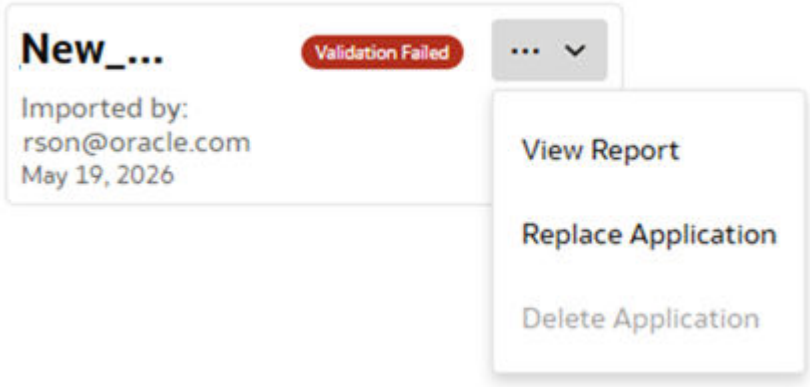
   The initial status is **InProgress**; while in progress you may see it as **Merged** but its still running. When it finishes, you see the **External Application Merge** activity in **Done** status.

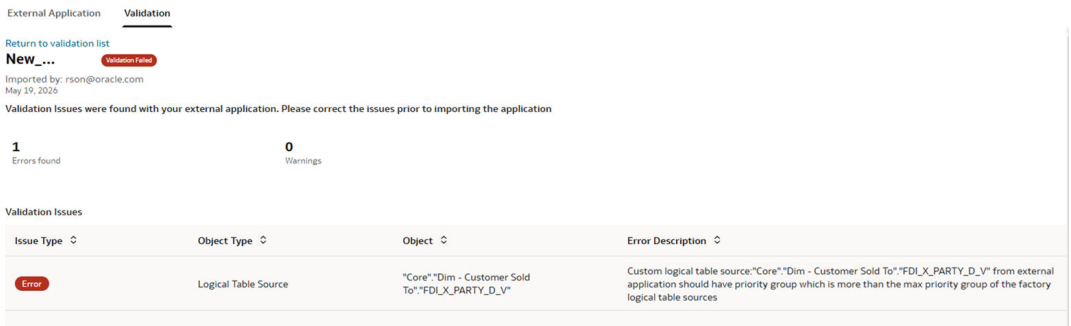
View Validation Report

Use the **View Report** option to view the validation report of an external application.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. In the External Application region, from the Validation tab, click **Actions**, and then click **View Report** to view the validation report of the external application.

   If the validation fails, you get a list of validation issues found in your external application. You must correct the issues before you attempt to import the application.





See How do I resolve inconsistent activated modules between the environment and the semantic model template?

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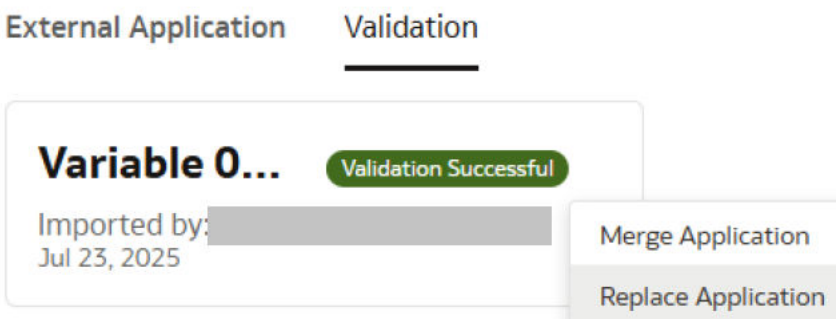
Replace Application

Use the **Replace Application** option to entirely replace the semantic model.

To correctly manage deletions in the semantic model, you must replace it. Prior to replacing, ensure to verify that your updated semantic model includes all of the desired previous changes. After the semantic model is imported or replaced, the system validates it and displays the validation report in the Validation tab in the External Application region. If there are no errors in the external semantic model, then you can proceed with the merge.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. In the External Application region, from the Validation tab, click **Actions**, and then click **Replace Application** to replace the external semantic model.



4. In Select Application and Content to Merge, select **Semantic Model Import**, and click **Select Semantic Model** to import and replace the applicable Oracle Analytics Cloud semantic model from your local machine, and enter the password that you use to encrypt the semantic model file.
5. In Resolve imported content conflicts, choose the option to rename the imported objects with either a prefix or suffix when a conflict occurs.
6. Select Expose custom columns in the prebuilt subject areas to expose columns added to the conformed dimensions in all the applicable subject areas.
7. Click **Validate**.

   The system validates the external semantic model and displays a report in the **Validation** tab. The different statuses are:

   - When you import, the status is **Validation InProgress**.
   - If there aren't any errors and validation is complete, the status is **Validation Successful**. The system displays the **Merge Application** button; click it to complete the merge process.
   - If there are errors, the status is **Validation Failed**. The system displays the errors and doesn't initiate the merge. You must review the validation report, fix the errors in the external semantic model, and try again. See View Validation Report.

   See How do I resolve inconsistent activated modules between the environment and the semantic model template?
8. On the Semantic Model Extensions page, click the Activity tab to verify that the validation process has completed and then click **Merge Application**.

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The initial status is **InProgress**; while in progress you may see it as **Merged** but its still running. When it finishes, you see the **External Application Merge** activity in **Done** status.

Delete Application

Use the **Delete Application** option to external applications that aren't published.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. In the External Application region, from the Validation tab, click **Actions**, and then click **Delete Application** to delete the application.

Import Oracle Analytics Content

Use the **Application Import** option to import content you created in a different Oracle Analytics product such as Oracle Analytics Cloud, Oracle Analytics Server, Oracle Business Intelligence Enterprise Edition and exported to a BAR file (archive).

Before importing the application, you must import and merge the semantic model components that are referenced by the workbooks within it. The bar file imports the JAZN file and the catalogs.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Semantic Model Extensions** under **Application Administration**.
3. In the External Application region, click **Actions**, and then click **Import Application** to import the external semantic model.
4. In Select Application and Content to Merge, enter a name for your application in **External Application Description** and select **Application Import**.
5. Click **Select Bar File** to import the applicable BAR file from your local machine and enter the password that you use to encrypt the BAR file.

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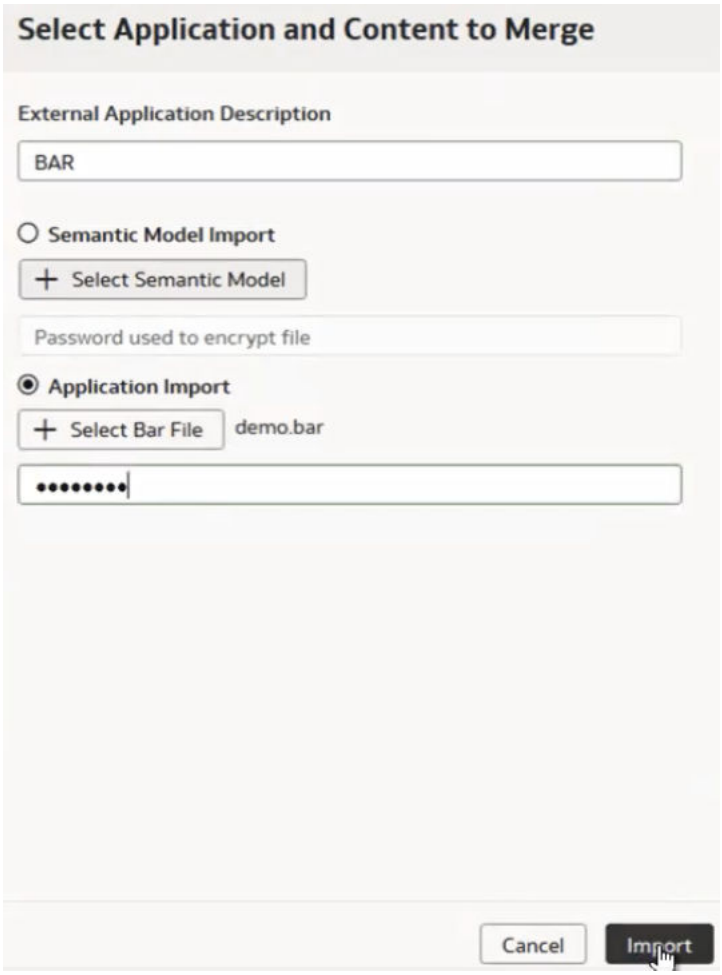

6. Click **Import**.
7. On the Semantic Model Extensions page, click the Activity tab to verify that the import process has completed.

Publish the Merged Model

If you have session variables defined in the merged model, you must publish it. Otherwise, you don't have to publish the merged model because the merge process makes the merged changes available in the Oracle Fusion Data Intelligence semantic model.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence Console, click **Semantic Model Extensions** under **Application Administration**.
3. In the External Application region, click **Publish Model**.
4. In the Publish Model dialog, select **Main** in **User Extensions**, **All** in **Security Configurations**, and click **Publish**.

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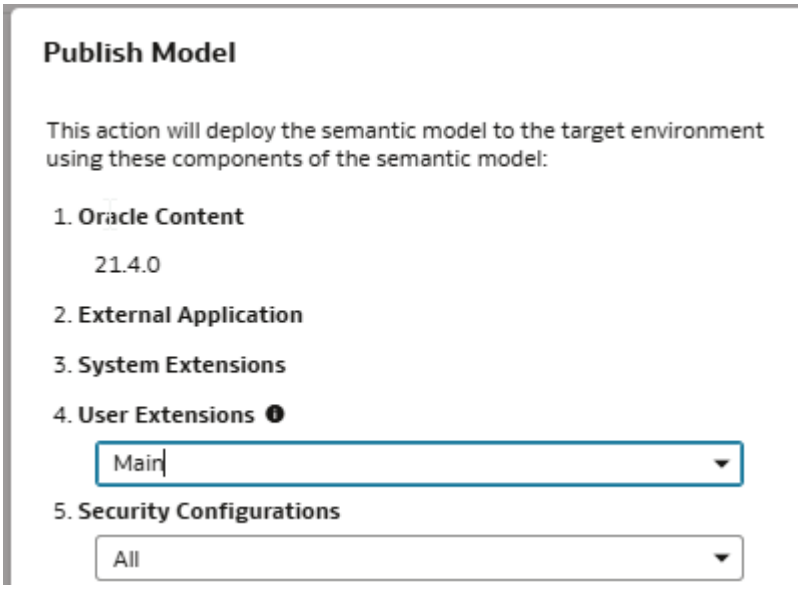
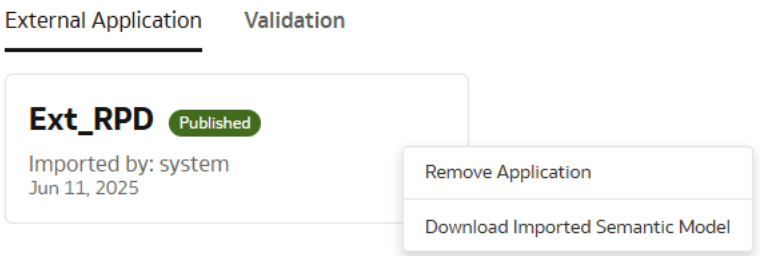


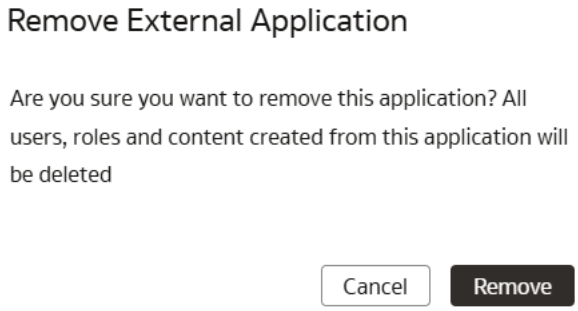
Remove the External Application

If you want to undo your changes and revert to the semantic model prior to the merge, you can remove it.

1. Sign in to your service.
2. In the Oracle Fusion Data Intelligence, click **Semantic Model Extensions** under **Application Administration**.
3. In the External Application region, right-click the published merged external application.



4. Click **Remove Application** and in the Remove External Application message, click **Remove**.



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5. Verify the Remove activity in the Activity tab.

Download the Imported Semantic Model

To download the imported semantic model that contains your customizations, you can either use the Oracle Fusion Data Intelligence Console or the Oracle BI Administration Tool.

1. If you're using the Oracle Fusion Data Intelligence Console:
   a. Sign in to your service.
   b. Click **Semantic Model Extensions** under **Application Administration**.
   c. On the Semantic Model Extensions page, in the External Application region, right-click the published merged external application.
   d. Click **Download Imported Semantic Model** to save it on your local machine.
2. If you're using the Oracle BI Administration Tool, click **External Application**, click **Actions**, click **Download Imported Semantic Model**, and save it on your local machine.

Validate the Results

Once the external semantic model has been successfully imported and merged, verify that you can create a user extension using the objects from the merged external semantic model.

1. On the Oracle Fusion Data Intelligence Console, click **Go to Home Page**.
2. On the Oracle Analytics home page, click **Create**, click **Workbook**, in Add Data, select the objects from the merged external semantic model, and then click **Add to Workbook**.
3. Use the selected objects to build visualizations, perform analysis, and validate that the data model behaves as expected within the Oracle Analytics environment.

Bundle the Merged Semantic Model

To move the merged semantic model from your non-production instance to your production instance, the recommendation is to perform the test to production process using the Bundles functionality.

See Bundle Your Application Artifacts.

Manage Frequently Refreshed Data in the Workbooks

The frequently refreshed data is available in the semantic model either automatically or you can add such data manually.

The sandbox framework supports some manual refresh scenarios, but more complex configurations require external applications.

When you enable and schedule the frequent data refresh process for the automated frequent refresh scenarios, the system creates an **FDR** folder in the applicable subject area. This folder has an **FDR** flag column that you can filter on Y to include the frequently refreshed data in the workbook. If the subject area contains multiple fact tables, you'll see only one **FDR** folder or flag. When you enable and schedule the frequent data refresh process for the manual scenarios, you must configure the semantic model customizations to use such data.

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> **Note**
>
> If you have enabled **Manual Execution of Apply System Extensions** , you must Apply System Extensions for the **FDR** flag to be visible in the subject area. See Apply System Extensions and Set Up the Global Report Parameters.

Topics:

- Automatic Availability of Frequently Refreshed Data in the Semantic Model
- Manual Addition of Frequently Refreshed Data in the Semantic Model
- Known Issues with Frequent Data Refresh
- Examples of Enabling and Using Frequently Refreshed Data in the Semantic Model
- Schedule Frequent Data Refreshes
- Top FAQs for Frequent Data Refresh
- Frequent Data Refresh V2 Data Lineage for Fusion CX Analytics
- Frequent Data Refresh V2 Data Lineage for Fusion ERP Analytics
- Frequent Data Refresh V2 Data Lineage for Fusion SCM Analytics

Automatic Availability of Frequently Refreshed Data in the Semantic Model

Certain frequently refreshed data is automatically made available in the semantic model after the completion of the frequent data refresh process.

The frequently refreshed data is automatically available in the semantic model in these scenarios:

- When you enable frequent data refresh on functional areas and want to display the frequent data refresh supported prebuilt facts and adjoined prebuilt degenerate dimensions. To display the frequently refreshed data for prebuilt conformed frequent refresh supported dimensions, manually add the object to the semantic model.
- When you enable frequent data refresh for the Configurable Account Analysis (CAA) and Fusion Accounting Hub (FAH) data applications.
- When you enable frequent data refresh on the extended prebuilt fact or adjoined degenerate dimension of a new data augmentations dataset. In this scenario, the prebuilt fact or adjoined degenerate dimension is already extended in the semantic model and you enable frequent data refresh on the functional area of the extended fact.
- When you enable frequent data refresh on the extended prebuilt fact or adjoined degenerate dimension of an existing data augmentation. In this scenario, you enable frequent data refresh on the target table of the data augmentation extend entity. You extend the prebuilt fact or adjoined degenerate dimension using a data augmentation and enable frequent data refresh on the functional area of the data augmentation of the extended entity fact.
- When you enable frequent data refresh on a supported prebuilt fact that is joined to a custom dimension using a simple join.
- When you enable frequent data refresh on a supported prebuilt fact that is joined to a custom dimension using a complex join, and you join the Lambda fact table to the custom dimension in the Logical star.

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Manual Addition of Frequently Refreshed Data in the Semantic Model

Certain frequently refreshed data isn't automatically made available in the semantic model after the completion of the Frequent Refresh process. You can add such data manually in the semantic model.

You can manually add the frequently refreshed data in the semantic model in these scenarios:

- When you enable frequent data refresh on functional areas and want to display the frequently refreshed prebuilt conformed dimensions.
- When you enable frequent data refresh on the target table of a new data augmentation dataset that has been extended or utilized in a semantic model customization such as custom fact, custom dimension, extend prebuilt or custom confirmed dimension, and extend custom fact.
- When you enable frequent data refresh on the target table of an existing data augmentation such as extend entity on confirmed dimension, create dimension, and create fact.

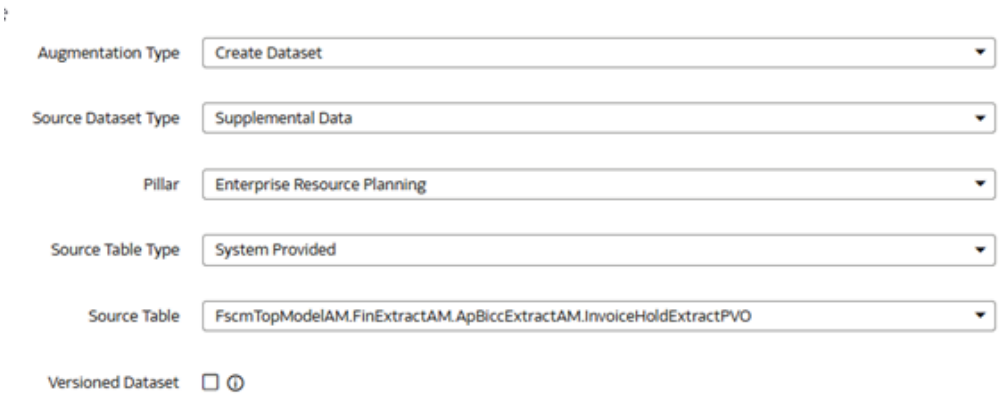
Examples of Enabling and Using Frequently Refreshed Data in the Semantic Model

Here are few examples that show how to enable and use the frequently refreshed data in the semantic model.

Create a Data Augmentation and Enable Frequent Data Refresh

Create a data augmentation extension on Dim – AP Invoices Details, a prebuilt degenerate dimension in the Financials – AP Invoices subject area.

1. Create a dataset augmentation type.



2. Using the Sandbox framework, extend a degenerate dimension. In the Financials – AP Invoices subject area, select Fact – Fins – AP Invoice Schedule.

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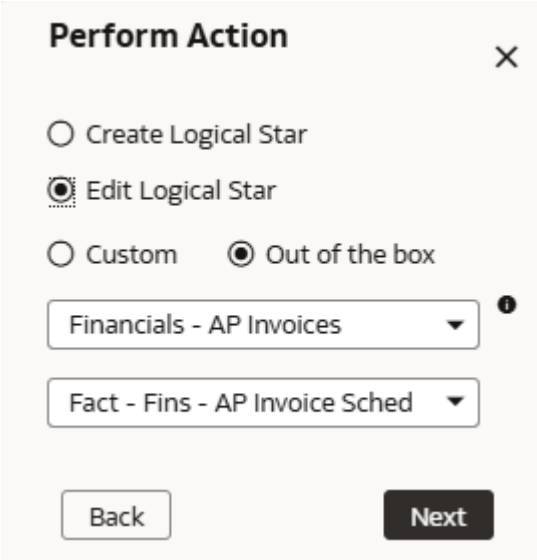
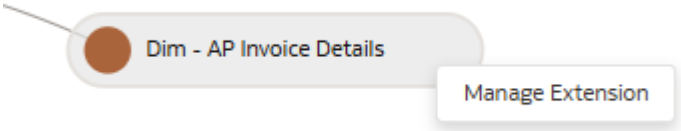
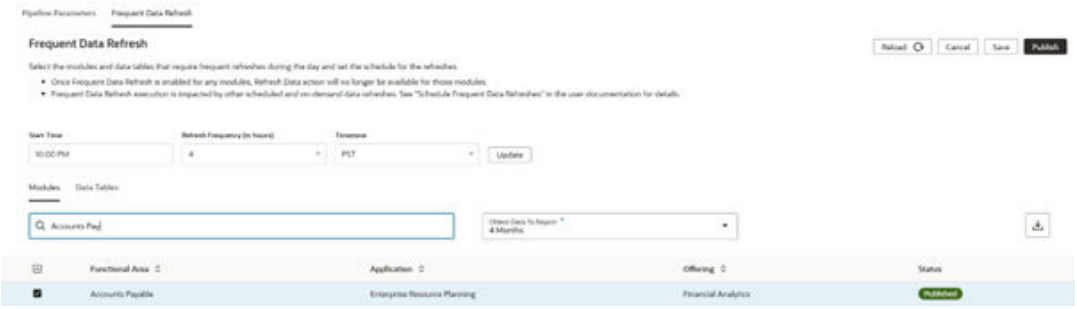


3. Extend the Dim – AP Invoices Details degenerate dimension.



4. Enable frequent data refresh on the applicable functional area, which is Accounts Payables in this case.



5. Enable frequent data refresh on the DW_FA_X_AP_INVOICE_CF_DS table which is the data augmentation dataset target table in this case.

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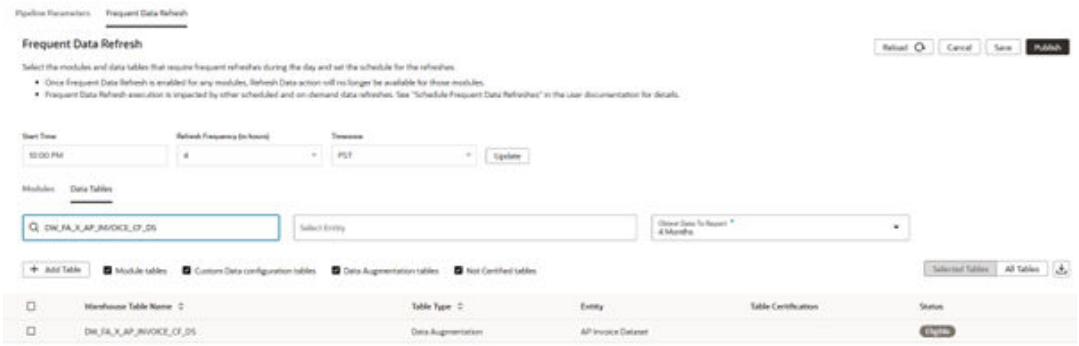

6. After the Frequent Data Refresh process runs successfully, verify that the process adds an FDR Flag folder with an FDR Flag column to the Financials – AP Invoices subject area.



7. Navigate to Oracle Analytics Cloud associated with your Oracle Fusion Data Intelligence instance and create a workbook using the frequently refreshed data. You can use the FDR Flag column as a filter to switch between the frequently refreshed data and non-frequently refreshed data.



8. Create a visualization with or without the FDR Flag.

Use an Existing Data augmentation and Enable Frequent Data Refresh

If you've defined augmentation that extends an entity, then you can enable frequent data refresh on the applicable functional area and table to have the ability to include the frequently refreshed data in your workbooks.

1. Note the details of a data augmentation that extends an entity, for example AP Invoice Header.

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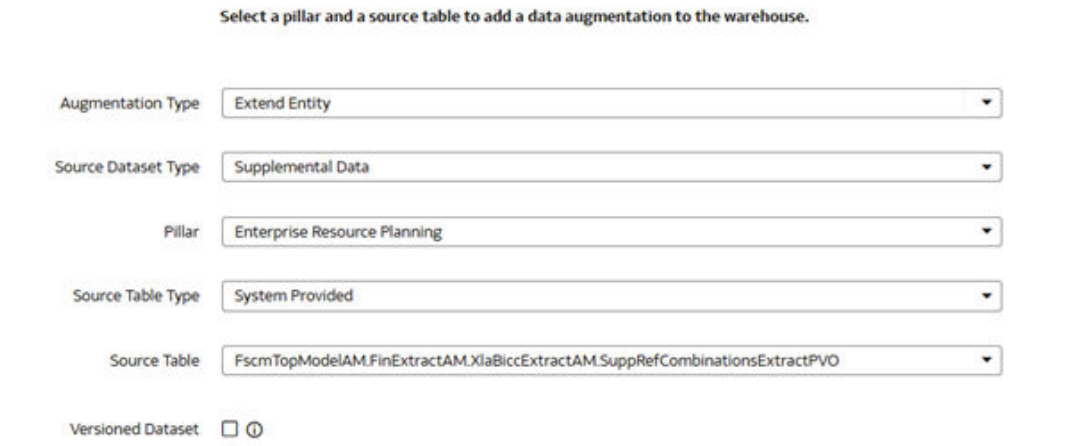
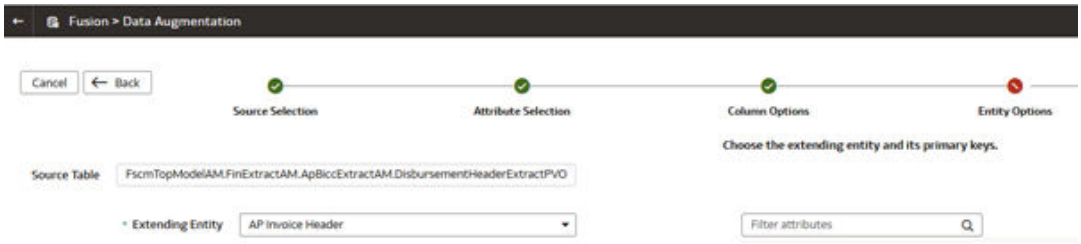
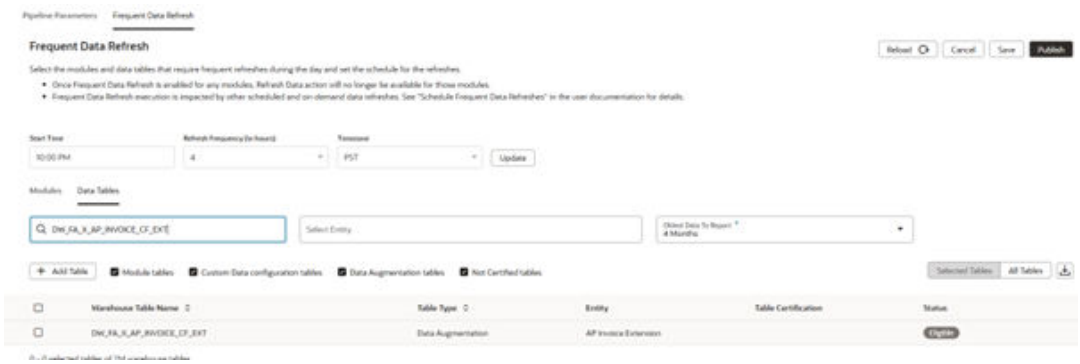


2. Enable frequent data refresh on Accounts Payables, the functional area of the AP Invoice Header extended entity in this example.



3. Enable frequent data refresh on DW_FA_X_AP_INVOICE_CF_EXT, the data augmentation extension target table.



4. After the frequent data refresh process runs successfully, verify that the process adds an FDR folder with an FDR Flag column to the Financials – AP Invoices subject area.
5. Navigate to Oracle Analytics Cloud associated with your Oracle Fusion Data Intelligence instance and create a workbook using the frequently refreshed data. You can use the FDR Flag column as a filter to switch between the frequently refreshed data and non-frequently refreshed data.

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Generate and Download a Security Report

You can generate and download a CSV report detailing custom security context and custom object security configuration permissions.

The downloaded report enables you to quickly understand, compare, and troubleshoot security customizations. The Generate Security Report option is activated when security changes are detected. The Download Security Report option is activated after the Generate Security Report process is complete.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Security** under **Service Administration**.
3. On the Security page, click the Application Roles tab.
4. On the Application Roles tab, click **Security Report**, and select **Generate Security Report option**, and then click **Generate**.
5. Click the Activity tab on the Semantic Model Extensions page and verify that the state of the Generate Security Report activity is Done.
6. Return to the Security page, click the Application Roles tab, and select **Download Security Report** option, and then click **Download**.

   The system downloads the security report to your local machine.

Column Name	Description
Type	Security Type: Data Security or Object Security
Step Name	Name of the semantic model extensions data security customization step
Application Role Name	Application role associated with the security configuration
Security Context Name	Security context defined in the Security Console
Source	Source of the security configuration: Security Console or semantic model extensions
Securing Object	Attribute used to drive security (non-advanced) or dimension used to drive security (advanced) for contexts defined in the security console.
Secured Objects	Facts or objects to which security has been applied
Functional Group	Functional group defined in the Security Console or semantic model extensions
Data Filter Expression	Filter argument defined in the semantic model extensions data security step
Object Security Privilege	Object access granted to the duty role such as Read or No Access

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8

Manage Oracle Fusion Data Intelligence

As the cloud account administrator with the functional administrator or system administrator application role, you can manage your Oracle Fusion Data Intelligence instance to ensure that you have the latest application updates, backups to restore in case of emergencies, and snapshots of your application artifacts.

Topics:

- Manage Application Updates
- Bundle Your Application Artifacts
- Configure a Virus Scanner
- Back Up and Restore
- About Disaster Recovery
- About Scaling Resources
- About Licensing

Manage Application Updates

As a service administrator, you can decide when to apply the application updates except the emergency patches that are deployed automatically.

Topics:

- About Application Updates
- Update Your Application
- View Release Update Activity
- Reset Content

About Application Updates

Application updates are available for major releases (quarterly basis), patches (monthly basis), and emergency fixes (as needed).

Except the emergency patches, you can decide when to apply the application updates. You can schedule the update for current and major releases to occur by a deadline. After that deadline, Oracle automatically updates your application. These updates have zero downtime.

The auto-update process updates the data model and then immediately after the data model update, this process updates the content. After the Platform 26.R2 release, the application upgrades will no longer trigger data refreshes. Instead, data will be refreshed through scheduled incremental refreshes. You can check the last refresh date either from the Console or the subject area to ensure that the data has been refreshed.

To ensure a successful update, verify the connection between Oracle Fusion Data Intelligence and all of the sources are healthy. You must define a data refresh schedule with a valid date because the application updates during the incremental load process. You must ensure that

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the Data Pipeline Status toggle is in enabled status before any release update. This toggle is available on the Pipeline Settings page, under Data Pipeline.

You can view the application updates and plan accordingly using the Release Updates tile under Service Administration on the Console. You also see a notification on the Data Configuration page when an application update is available. You can then plan to uptake using the Release Updates tile. You can specify the date and time (in your local time zone) the upgrade will begin. If the upgrade and an incremental refresh are scheduled at the same time, the incremental refresh happens first, followed by the upgrade.

During the application upgrade, the data gets refreshed to support new data model and content changes. This upgrade provides the ability to use new functionality such as functional areas, changes in the data model, changes in the content such as KPIs and dashboards. The upgrade deletes data related to any deactivated functional areas and you may potentially lose the data that was there in the warehouse for these functional areas. As part of application upgrade, the system also cleans up the data warehouse based on the relative initial extract date that you specified in the Pipeline Parameters. Hence, the upgrade can be a long running process. While the upgrade is in progress, the Administration Console displays a banner that shows the estimated time to completion. You can use this estimate to plan the schedule for future upgrades. You can consider scheduling the upgrade during non-business days such as weekends to ensure sufficient time for the process to complete.

The data pipelines for functional areas that have been activated are preserved during the upgrade. The data pipelines in Saved or Scheduled status are reset to Saved status. To activate these data pipelines, you must set them to Activated status. The application upgrade adds new and replaces existing modified content with the latest version. When you upgrade the application, all custom content gets updated with the latest version. If you have merged an external application, some objects in the semantic model are also updated. After every upgrade, download your most recently imported semantic model from the External Application tab, and then apply your future changes to the newly downloaded semantic model. See Download the Imported Semantic Model.

See About Oracle Fusion Data Intelligence Releases.

You can skip an upgrade for one major release. However, you must upgrade when the next release is available. If you aren't able to upgrade for more than two major releases or upgrade isn't happening automatically, reach out to Oracle Support.

Update Your Application

As the service administrator, you can view available application updates, schedule a date to accept the update, and know when an update isn't getting applied as expected.

Oracle Fusion Data Intelligence provides automatic updates of the application to ensure you're using the most current software. You can schedule the update earlier than the predefined date and time. If you do nothing, the application upgrade automatically runs on the date shown on the Release Updates page. However, prior to updating your application, you must ensure that a data pipeline for at least one functional area has been activated.

When your application update starts, a banner states the approximate time to complete the upgrade. Content upgrade involves complex metadata changes and can take several hours to complete.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Release Updates** under **Service Administration**.

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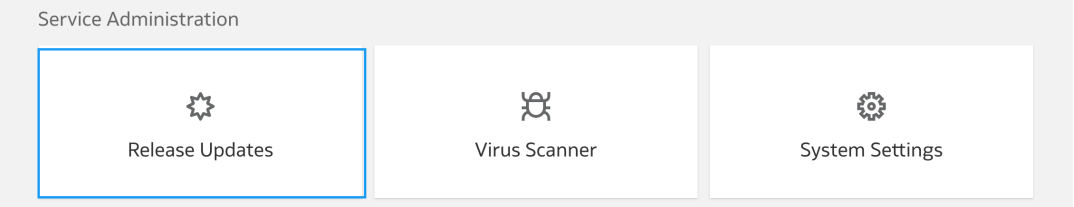
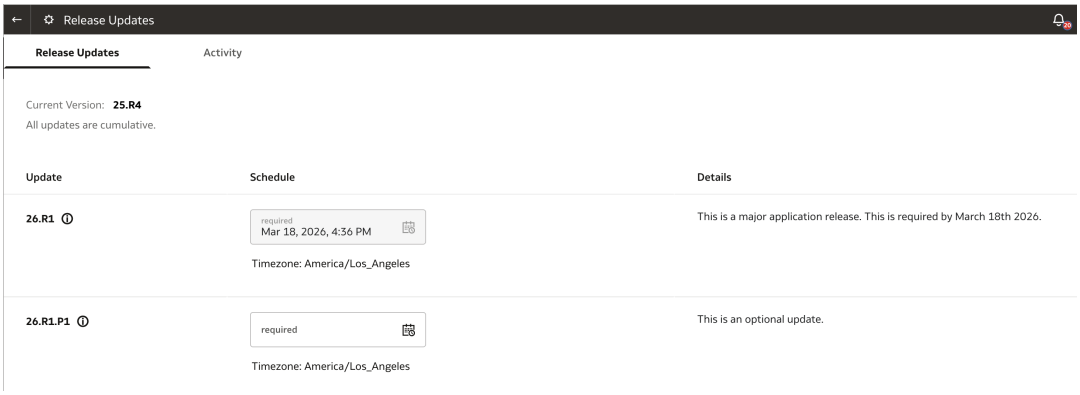
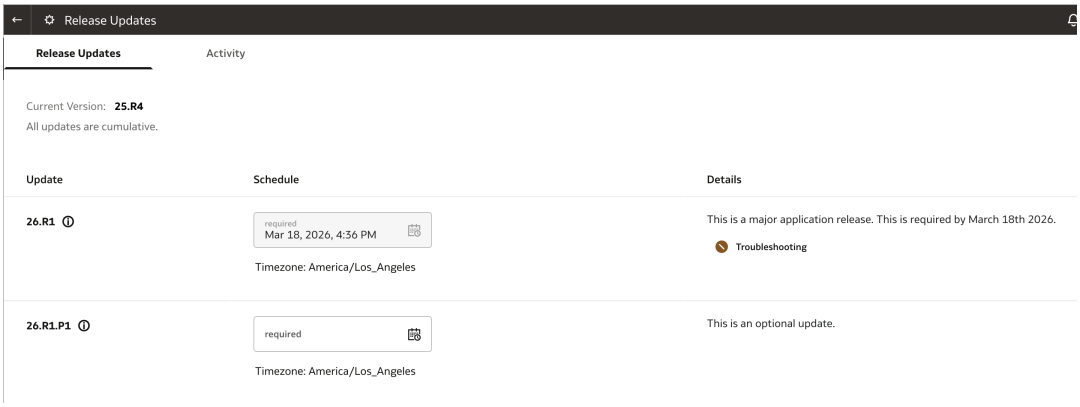


3. On the Release Updates page, select an application update under **Update**, and then in **Schedule**, select the date and time of when you want to apply the update.



4. Click **Save**.
5. Verify that the update is applied as expected on the scheduled day.

   If there's an issue while applying the update, the system displays the **Troubleshooting** icon.



6. Click **Troubleshooting** to view the details and reach out for help to resolve the issue.

View Release Update Activity

You can view the actual date when a release was deployed for the instance and any service administrator actions such as date selections for release or patch uptake.

1. Sign in to your service.

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2. In Oracle Fusion Data Intelligence **Console**, click **Release Updates** under **Service Administration**.
3. On the Release Updates page, click **Activity**.
4. In the Activity section, view the release update details.

Reset Content

If a content patch fails and the system detects an outdated content release of three releases, administrators can reset content.

In Reporting Configuration page, click **Reset Content** on the top-right corner, and schedule content reset.

When the content reset operation starts at the scheduled time, your Semantic Model customizations and security configurations will be in unpublished state, and then the content upgrades to the latest version, while preserving your sandboxes. After the content update completes and your sandbox is error free, you can re-publish your customizations.

Bundle Your Application Artifacts

As a service administrator, you can manage snapshots of your application artifacts as bundles.

Topics:

- About Bundles
- Create a Bundle
- Edit a Bundle
- Publish a Bundle
- Export a Bundle
- Import a Bundle
- Deploy a Bundle
- Delete a Bundle
- View the Activity History of Bundles
- Share Bundles

About Bundles

Bundles are point-in-time snapshots of application artifacts (configurations and customization). Bundles capture metadata only and don’t include data.

Version and Size Requirements

- Bundles work when the source and target environments are on the same version, or when the target is on a higher version than the source.
- Keep non-content bundle size under 1 GB. If a bundle exceeds 1 GB, split it by including only the required artifacts. A practical way to confirm size is to generate and download the bundle.

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- The content bundle can support sizes as large as 10 GB. Use the Maximum Content Bundle Size icon to view the largest bundle size you can create. See Create a Content Bundle.

Validation Before Deployment

Before deployment, the system validates that the bundles contain all prerequisites. If validation fails, the bundle shows Validation Failed and can't be deployed until you correct the issue and retry.

Why Use Bundles?

Use bundles to:

- Package a subset of artifacts for development, test, or production environments.
- Migrate and deploy custom development to another environment.
- Synchronize environments by promoting changes from one environment to another. For example, from production to test environment.
- Restore an environment after an issue (full system restore).
- Create backups of an environment or a subset of artifacts.
- Restore specific artifacts by importing a bundle.

Bundle Types

- **Data Config Bundle** includes:
  - Pipeline parameters
  - Priority datasets
  - Functional area activation metadata
  - Data augmentations
  - Data Applications
  - Frequent data refresh
  - Data share
  - Schedule override

  Notes:

  - Can be deployed after resetting the data warehouse to keep content unchanged and re-establish data pipeline configuration. See Reset the Data Warehouse.
  - Includes only deployed augmentations or configurations. Augmentations or configurations not deployed in the source aren't included.
  - You can include extract configurations for connections, but not connection details. The target environment must already have the required connections defined.
  - Prior to adding the Frequent Data Refresh V2 definition in a bundle, ensure that all datasets referenced in the Frequent Data Refresh V2 definition exist in the target environment. When you import and deploy a bundle that has the Frequent Data Refresh V2 definition on a target environment that has Frequent Data Refresh V2 enabled, the applicable Frequent Data Refresh V2 definition may get updated with datasets that aren't available in the target environment and this may cause errors.
  - The Oldest Data To Report parameter information in the Frequent Data Refresh V2 definition isn't included in the bundle.

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  - If you've enabled the Data Share capability, you can select the Data Share configuration in the Data Config bundle. See Configure the Connection to Oracle Cloud Infrastructure Object Storage (Preview).

- **Semantic Model Bundle** includes all custom components of the semantic model, such as:
  - External applications
  - System extensions
  - User extensions
  - Security configurations

  Notes:
  - Depending on the semantic model extensions framework that you use, bundle includes main sandbox or branch, and custom sandbox or branch along with the custom components. For the branch framework, you can select the tag and version to bundle and deploy.
  - Deployment merges the extensions and not replace them Existing extensions in the target environment remain if they aren’t overwritten by the bundle.
- **Security Bundle** includes:
  - Group to application role assignments
  - Custom application roles
  - Custom data security
- **Content Bundle** includes snapshots of Oracle Analytics Cloud content, such as:
  - Folders (excluding datasets)
  - Projects
  - Workbooks
  - Key metrics
  - Connections
  - Analyses
  - Duty roles for content
  - Report parameters
  - Data applications (for example, configurable account analysis)

  Notes:
  - Content bundle always merges the catalog content from source to target.
  - If conflicts occur while merging, the system replaces conflicting items.
  - Deleted content. aren't tracked.
- **Composite Bundle** includes any combination of the other bundle types.
  Notes:
  - When you generate a composite bundle, the system generates the composite bundle and its included bundles together.
  - When you import a composite bundle, the system imports both the composite bundle and the individual bundles.

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  - You can deploy the composite bundle as a whole or deploy the individual bundles as needed. For example, you can deploy the complete composite bundle in one environment and the individual bundles in different environments.

- **Environment Bundle** includes:
  - Everything in the semantic model, security, and Content bundles.
  - Additional essential elements not covered elsewhere.

  Before deploying an Environment bundle, you must deploy a Data Config bundle or activate data pipelines in the target environment.
- **Application Bundle** includes:
  - Content bundle
  - Data Augmentation Scripts
  - (Optional) Data Augmentation Scripts configuration
  - Semantic model extensions
  - Security bundle

  Applications bundle includes applications created with the Pipeline Builder and other pipeline applications created on the Data Applications page. Using the Applications bundle, you can create a composite bundle including the Pipeline Builder, external semantic model, prebuilt content, and security (JAZN).

Prerequisites for Bundle Deployment

Before working with semantic models or content:

- Activate the functional areas and ensure data is available.
- In the target environment, to ensure that configurations and activation are at the same level as the source environment, either:
  - Manually configure and activate your data pipelines
  - Deploy a Data Config bundle

Only then should you deploy Environment bundle, Semantic Model bundle, or Composite bundle, because these depend on data being available.

Recommended Practices

- Include the applicable security-related information in the Semantic Model and Content bundles.
- Reassign groups to users after deployment because the Security bundle doesn't overwrite the user-group mappings.
- When exporting a Semantic Model bundle from test to production, include security configuration.
- While creating a Security bundle, if the number of application roles exceed 1000, then you may encounter an error. In such a case, use the **Select Application Roles** button to select specific roles.
- Use unique names for semantic model extension steps to ensure tags work correctly when migrating with a Semantic Model bundle.

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What's Available In Bundles

Learn what's available in bundles.

Area	Artifact	Included in Bundles
Security	Application Roles	Security and Environment
Security	Users and Groups	No – move manually, done in Identity Cloud Service
Security	Group to Application Role assignments	Security and Environment
Security	Security contexts including Configurable Context	No – move manually
Uploaded files	Financial Categories, Security assignments	No – move manually
System settings	Oracle Analytics Cloud system settings including Preview features	No – create manually in target environment
Enable features	Activated Oracle Fusion Data Intelligence features	No – create manually in target environment
Semantic model extensions	System, user, security configuration	Semantic and Environment
Data validations	Scheduled validations such as AP Invoices, weekly	No – create manually in target environment
Reporting configurations	Basic reporting configurations	Content
Reporting configurations	Advanced (Configurable Account Analysis)	No – create manually in target environment
Data pipeline	Pipeline parameters, functional areas, augmentations, and priority datasets	Data configurations
Data pipeline	Frequent refresh modules and tables	Data configurations
Data pipeline	Warehouse full reload schedules	Data configurations
Data pipeline	Data applications – DFFs	Data configurations
Data pipeline	Data applications such as Configurable Account Analysis	Content
Data pipeline	Data share, if enabled	Data configurations
Connections	Data Augmentation Connectors	No – create manually in target environment
Oracle Analytics Cloud content	Key metrics, Workbooks, Connections, Analyses	Content and Environment
Oracle Analytics Cloud	Data flows, Functions, Machine Learning apps	Content and Environment
Oracle Analytics Cloud	Datasets	Content bundle - move manually Composite bundle - move manually Environment bundle - included
Oracle Cloud Infrastructure Console settings	Entitlements, connections, PaaS component settings	No – create manually in target environment
Oracle Autonomous AI Lakehouse custom schema	OAX_USER schema objects and data	No – use data pump to back up to and restore from Oracle Object Storage Service

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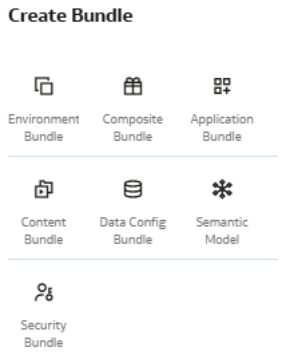
Create a Bundle

Create a snapshot of your application artifacts to save their current state. You can view the bundles that you created on the Bundles page.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, click **Create**.



4. In Create Bundles, select the type of bundle that you want to create. For example, Content Bundle.



5. Enter a name and description for your bundle.
6. Depending on the type of bundle, select the applicable option.
7. Click **Save**.

Create a Content Bundle

Create a snapshot of your application artifacts to save their current state. You can view the bundles that you created on the Bundles page.

Before creating the bundle, delete any duplicate or unused catalog folders to reduce bundle size and improve deployment efficiency. It's recommended you avoid creating duplicate Shared Folders because the duplicate folders consume unnecessary space, increase bundle size, and might cause performance issues or errors.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, click **Create**.



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4. In Create Bundles, select **Content Bundle**.
5. Enter a name and description for your bundle.
6. For a content bundle, select the following options depending on your requirement or select the applicable Oracle Analytics Cloud content, workbooks, and key metrics using the corresponding buttons.
   - Select **Include All** if you want to include all Oracle Analytics Cloud content under Shared Folders and My Folders, and key metrics.
   - Select **All OAC Content under Shared Folders** if you want to include all Oracle Analytics Cloud content under Shared Folders .
   - **All OAC Content under My Folders** if you want to include all Oracle Analytics Cloud content under My Folders.

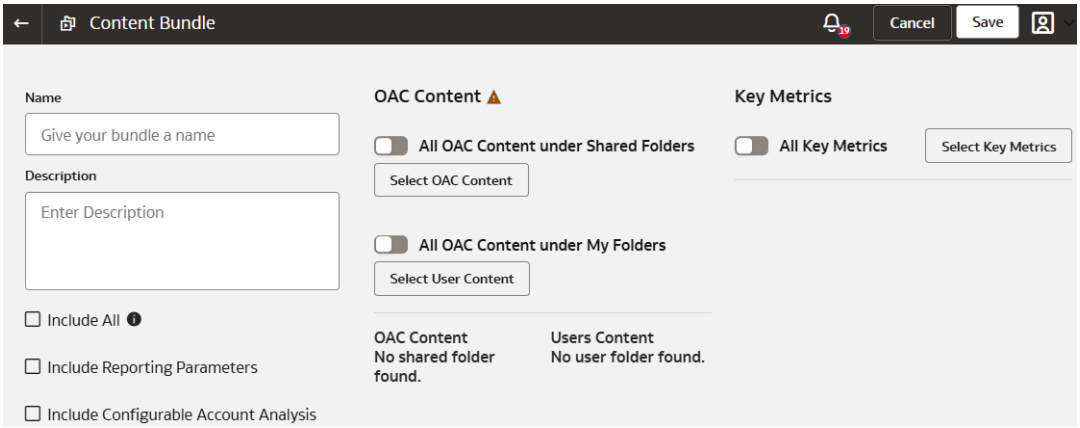
> **Note**
>
> When you deploy a content bundle with **Include All** or specific My Folders selected, the existing content in the affected My Folders will be replaced with the content from the bundle. Oracle recommends that you create a backup bundle of your current content before you proceed with the deployment.

You can select the **Include Reporting Parameters** and **Include Configurable Account Analysis** checkboxes, if applicable.

While creating an Oracle Analytics Cloud content bundle in your source instance, ensure that you select only the data sources that are also available in the target instance to avoid deployment failures in the target instance.

If there aren't any key metrics to back up in the content bundle, then you can only select the Oracle Analytics Cloud content options from the user interface.

Content bundles exclude non-catalog items such as datasets, connections, and machine learning artifacts. You must manually recreate these excluded items in the target instance. You can rebuild datasets from scratch or import using a .dva file.



Use the Maximum Content Bundle Size icon next to **OAC Content** to view the largest bundle you can create. If your bundle exceeds this limit, select individual Oracle Analytics Cloud items instead of including all content. To verify the bundle size, generate and download it.

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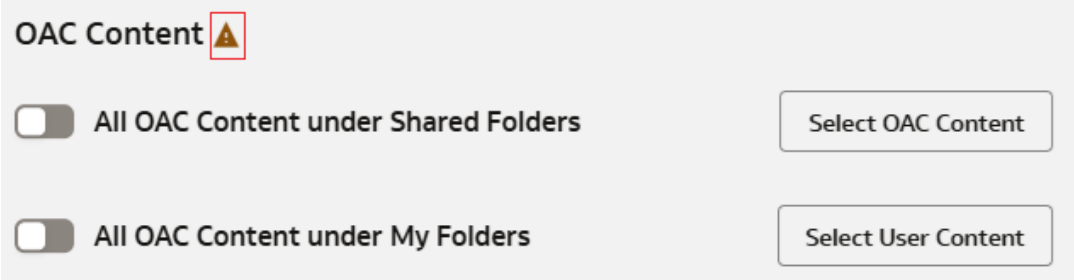

7. For a key metrics content bundle, select the key metrics you want to bundle using the corresponding toggles and buttons. Key metrics are also included with Environment Bundles. To improve performance, select the specific key metrics you want to bundle.

> **Note**
>
> To import key metrics, you must deploy a key metric bundle into a new instance with key metrics enabled. You can import key metrics in datasets; however the entire dataset won't be imported due to security limitations. Datasets without key metrics aren't included in key metrics.

8. Click **Save**.

Create a Data Config Bundle

Create a snapshot of your application artifacts to save their current state. You can view the bundles that you created on the Bundles page.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, click **Create**.
4. In Create Bundles, select **Config Data Bundle**.
5. Enter a name and description for your bundle.
6. For a data configuration bundle, select the **Include all data configuration settings** checkbox, or select the applicable modules, augmentations, data applications, and pipeline settings using the corresponding toggles and **Select** buttons.

> **Note**
>
> The **Include all data configuration settings** selects only the deployed data applications, the activated data augmentations, and the activated functional areas. After activating the data augmentation and functional area (Activation Completed status), you may experience a slight delay in viewing the data augmentations and functional areas with Activation Completed status on the data configuration bundle page.

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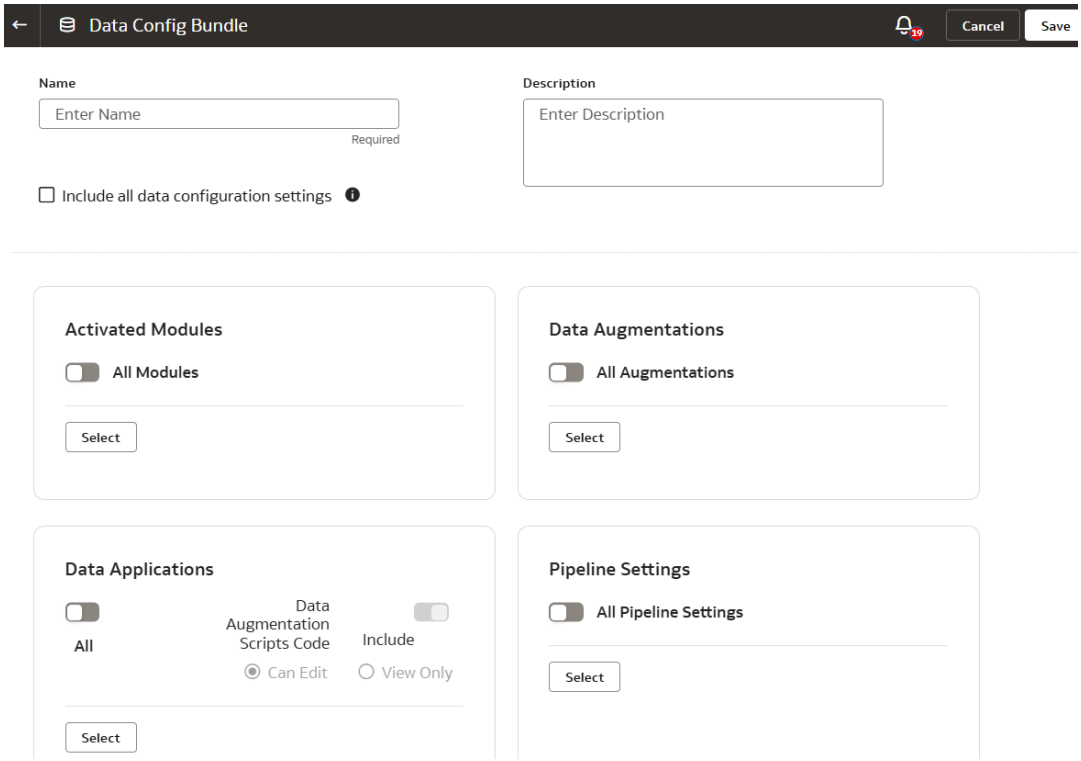

If you've enabled the Data Share capability, you can select the Data Share configuration in the Data Config bundle under **Pipeline Settings**. When you deploy a bundle with data share configuration, the deploy process updates the data share definition with the datasets from the bundle and keeps them in a saved state which is in “Not Shared” status. You must explicitly perform the Share action to share these datasets with the relevant sinks. If the data share target has some definition such as D1(with connection C1), D2(with connection C2) and if the bundle brings in definitions D1(with connection C2), D2(with connection C3), D3(with connection C1), D4(with connection C1), then the system adds new datasets, D3(with connection C1) and D4(with connection C1) while retaining the existing definitions in the target environment.

> **Note**
>
> When deploying bundles that have Data Share configurations, ensure that the data share connections in the target environment have the same “Connection Code” to avoid bundle deployment failure.

If you've created and deployed Data Augmentation Scripts data application, you can select the **Exclude LoCode Configuration** checkbox to not include this configuration in the Data Config bundle.

7. For a data configuration bundle, select the **Include all data configuration settings** checkbox, or select the applicable modules, augmentations, custom attribute mappings, and pipeline settings using the corresponding toggles and **Select** buttons.

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> **Note**
>
> The **Include all data configuration settings** selects only the deployed data applications, the activated data augmentations, and the activated functional areas.

8. Click **Save**.

Create a Semantic Model Bundle

Create a snapshot of your semantic models to save their current state.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, click **Create**.
4. In Create Bundles, select **Semantic Model Bundle**.
5. Enter a name and description for your bundle.
6. Depending on the type of bundle, select the applicable option.
   - For a Sandbox Semantic Extensions Bundle, you can select:
     - Include all semantic extensions: Select **Include all semantic extensions** to deploy and publish all semantic model components, including external semantic models. Note that if you select **Include All Semantic Extensions** or **All Sandboxes**, or any custom sandbox, you must also select a specific sandbox for publishing.
     - External application: Use the **External Application** drop-down to select the external application you want to include and publish.
     - Customization sandboxes: Use the **All Sandboxes** toggle to select all or specific sandboxes for deployment to non-Production instances. Selecting any custom sandbox automatically includes the main sandbox.
     - Sandbox to publish: Use the drop-down to choose the specific sandbox to publish.

     Selection Rules:

     - Selecting a customization Sandbox automatically includes the Main Sandbox for deployment.
     - To make a sandbox available for publishing, you must first apply changes to the sandbox.
     - Any sandboxes selected to be published will also be deployed.
     - If you select **Include All Semantic Extensions** or select a customization Sandbox, you must also specify a Sandbox to be published.
     - You may selectively migrate external applications only. This action will also deploy security.
     - Unchecking **All Sandboxes** will retain the selection of **Publish a Sandbox** that was previously chosen.

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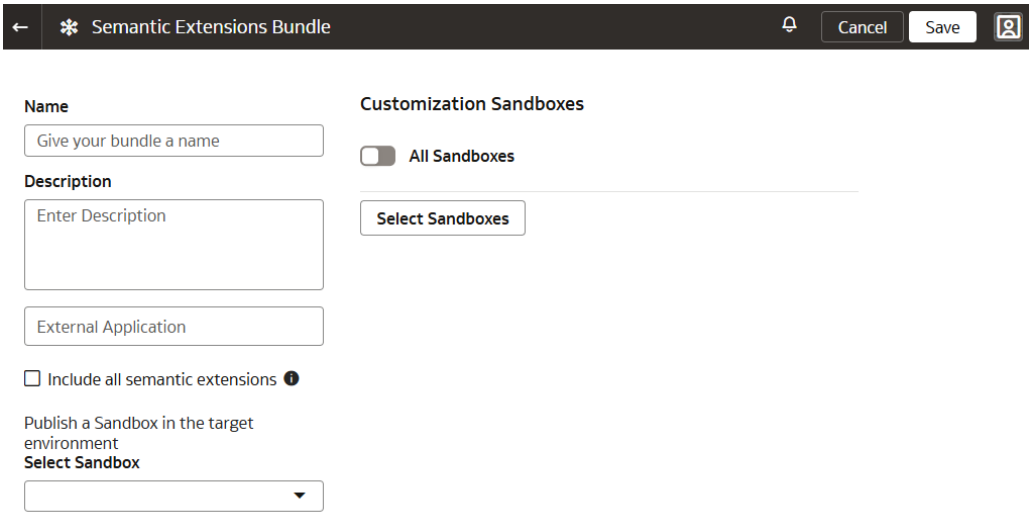

- For a Branch Semantic Extensions Bundle, you can select:
  - Include all semantic extensions: Select **Include all semantic extensions** to deploy and publish all semantic model components, including external semantic models. Note that if you select **Include All Semantic Extensions** or **All Branches**, or any custom branch, you must also select a specific branch for publishing.
  - Include external RPD: Select **Include External RPD** to include external RPD.
  - Publish external RPD: Select **Publish External RPD** to publish the external RPD.
  - Main branch tags: Use the **All Tags** toggle to select all or specific tags to deploy.
  - Customization branches: Use the **All Branches** toggle to select all or specific branches for deployment to non-Production instances. Selecting any custom branch automatically includes the main branch.
  - Tag or branch selection: Use the drop-down to choose the specific tag or branch to publish.
  - If you have tagged a step in your branch, you must select **Include External RPD** or select the applicable branch or tag in the **Publish a branch or tag in the target environment** drop-down or select your applicable tags and branches. See Tag the Main Branch's Steps.

7. Click **Save**.

Create a Security Bundle

Create a snapshot of your application security artifacts to save their current state.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, click **Create**.



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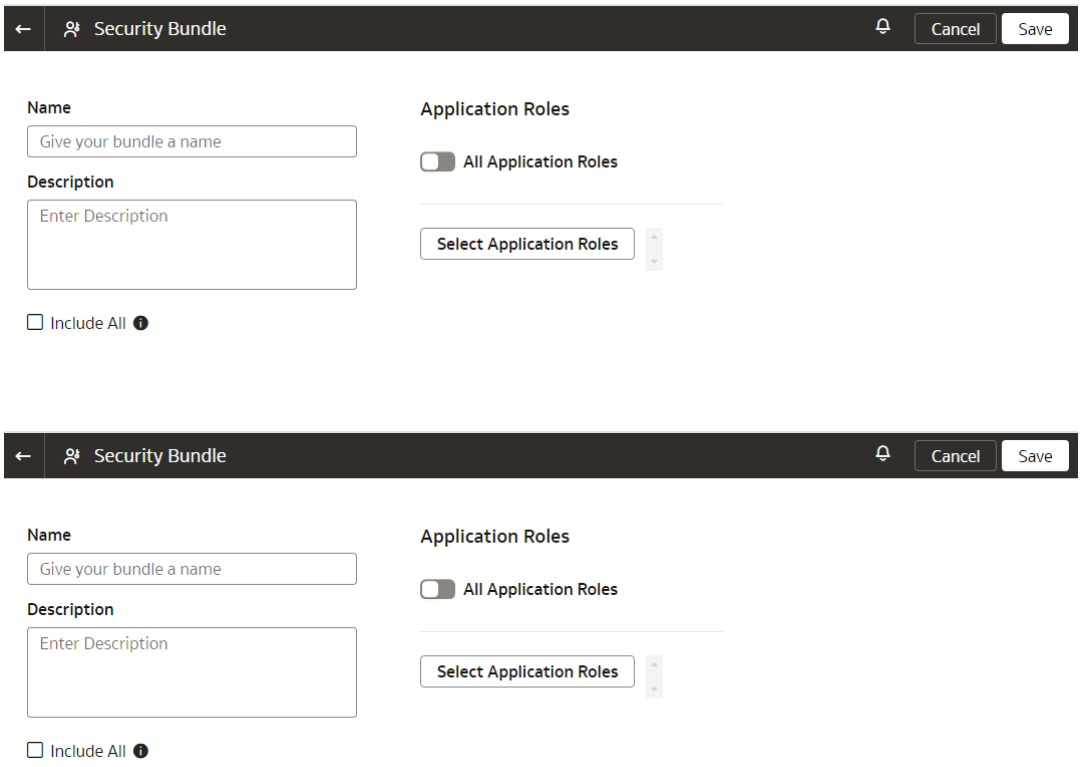
4. In Create Bundles, select **Security Bundle**.
5. Enter a name and description for your bundle.
6. Select the applicable option:

   Select the **Include all security settings** checkbox or select all the application roles. If the number of application roles exceed 1000, then you may encounter an error. In such a case, use the **Select Application Roles** button to select specific roles.

> **Note**
>
> If you have the enhanced security capability of Oracle Fusion Data Intelligence , then you no longer can specifically select groups as part of the Security bundle. See About Managing Users, Groups, Application Roles, and Data Access.



7. Click **Save**.

Create an Environment Bundle

Create a snapshot of the non-catalog items of your application to save their current state.

Environment bundles include non-catalog items such as datasets, connections, and machine learning artifacts. However, the underlying files that aren't included must be uploaded manually. Before generating an environment bundle, verify that all the dataset names are free of special characters.

Before creating the bundle, delete any duplicate or unused catalog folders to reduce bundle size and improve deployment efficiency. It's recommended you avoid creating duplicate Shared

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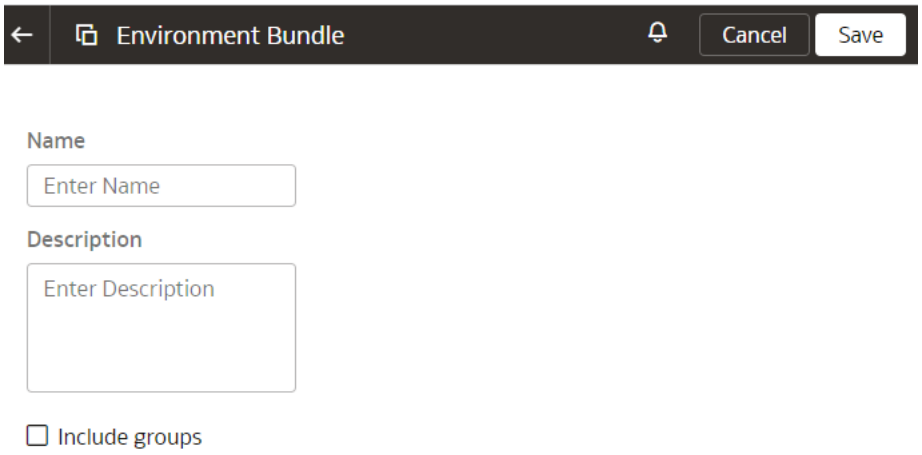
Folders because the duplicate folders consume unnecessary space, increase bundle size, and might cause performance issues or errors.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, click **Create**.
4. In Create Bundles, select **Environment Bundle**.
5. Enter a name and description for your environment bundle.



6. Click **Save**.

Create a Composite Bundle

Create a snapshot of your application catalog artifacts to save their current state.

Composite bundles exclude non-catalog items such as datasets, connections, and machine learning artifacts. You must manually recreate these excluded items in the target instance. You can rebuild datasets from scratch or import using using a .dva file.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, click **Create**.



4. In Create Bundles, select **Composite Bundle**.

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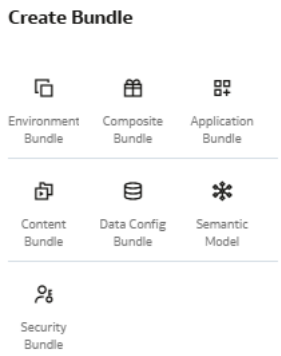
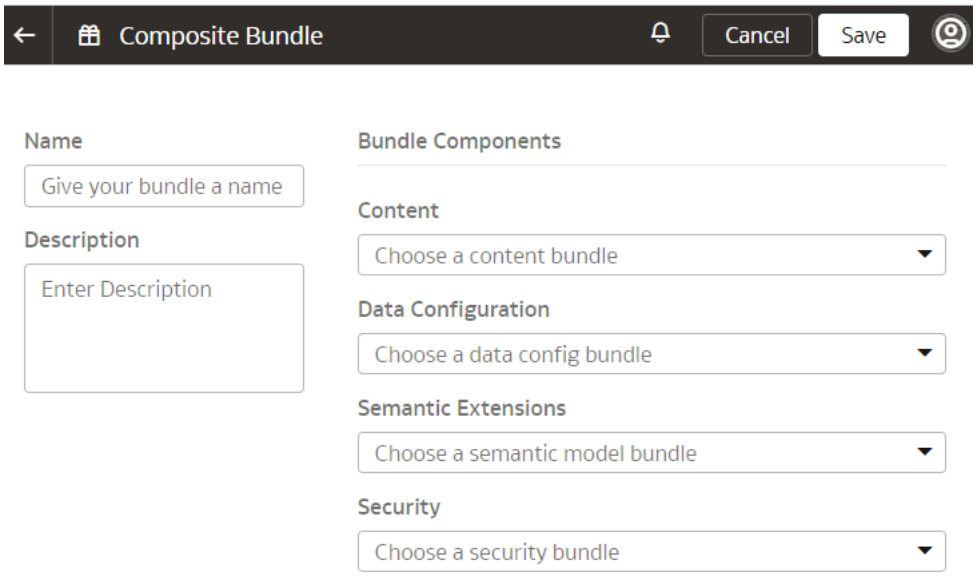


5. Enter a name and description for your bundle.
6. Select any of the other bundles.



7. Click **Save**.

Create an Application Bundle

Create a snapshot of your application artifacts to save their current state.

For an application bundle, ensure that you raise a service request to have this option made available. Then enable the **Application Bundle** feature from the Preview tab on the Enable Features page.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, click **Create**.



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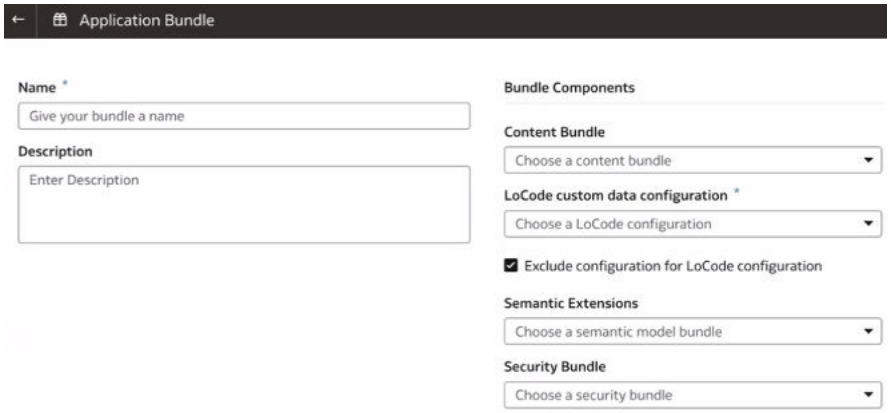
4. In Create Bundles, select **Application Bundle**.
5. Enter a name and description for your bundle.
6. For an application bundle, select a content bundle, Data Augmentation Scripts data application, semantic model extensions, and security bundle. Ensure that you include the source configuration while creating this bundle by not selecting the **Exclude configuration for LoCode configuration** checkbox. This enables the bundle to work with any version of the target data model.



7. Click **Save**.

Edit a Bundle

Edit a bundle if you need to change the application artifacts captured in the bundle.

> **Note**
>
> When you edit a bundle, you can't see the bundle definitions till you complete the bundle deployment. Functional areas and data augmentations in the bundle are visible after the bundle deployment process schedules them. The data applications in the bundle are visible after the deploy data application process is completed.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, hover over the bundle that you created and click under **Actions**.
4. From **Actions**, select **Edit**.

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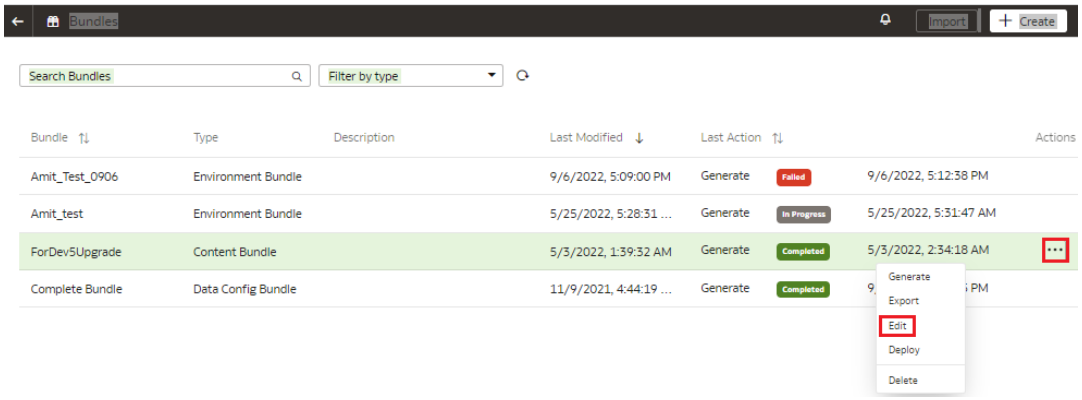
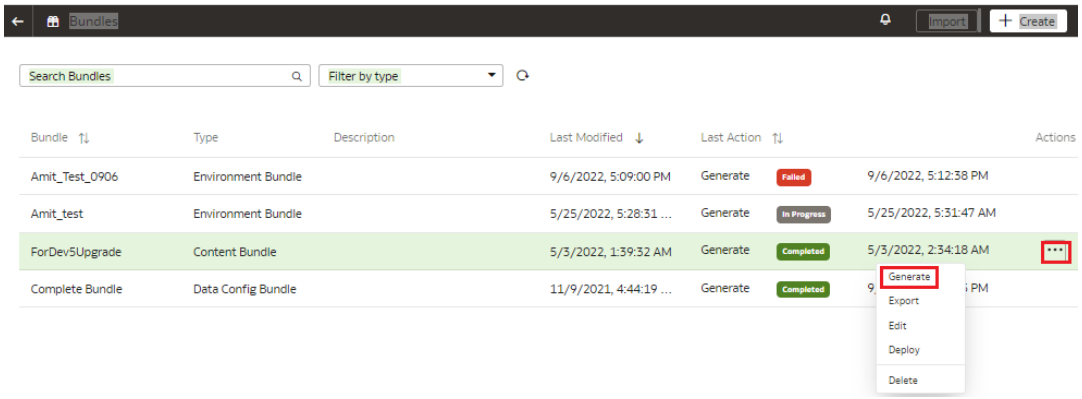


5. On the applicable bundles page, make your changes and then click **Update**.

Publish a Bundle

Publish a bundle from the source environment. This action generates a snapshot of the application artifacts and saves the snapshot to a repository. You can download this bundled artifact and import it into different instances.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, hover over the bundle that you created and click under **Actions**.
4. From **Actions**, select **Generate** to create and publish the bundle.



You see the bundle with Generated status on the Bundles page.

Deploy a Bundle

Use the **Deploy** option to convert or revert artifacts in the target environment to the state represented by a generated bundle. Before attempting deployment, the system validates the bundle to ensure that software and model version requirements along with any other dependencies are met.

For example, deploying a bundle created in instance A to instance B converts the artifacts in instance B to the state represented by the bundle created in instance A. If you later change

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artifacts in instance B and want to revert the changes, again deploy the bundle created in instance A to restore the state.

Oracle recommends that you backup your current bundle before deploying a new one.

Deploy a Content Bundle

Create a backup bundle of your current content before you proceed to deploy a Content bundle.

When you deploy a content bundle that was created with **Include All** or specific My Folders selected, the existing content in the affected My Folders will be replaced with the content from the bundle.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, hover over the Content bundle that you created, and select **Deploy** from **Actions**.
4. If you're sure that you want this bundle to replace the content in My Folders selected in the Content bundle, click **Deploy**.
5. Enter a name and description for your bundle.
6. For a content bundle, select the following options depending on your requirement or select the applicable Oracle Analytics Cloud content, workbooks, and key metrics using the corresponding buttons.

Deploy a Data Config Bundle

Create a backup bundle of your current data config before you proceed to deploy a Data Config bundle.

When you deploy a Data Config bundle, if the required pipeline parameters are missing in either the bundle or the target environment, the system won’t run the pipeline. Even if you select all modules (functional areas, data augmentations, custom configurations), they will stay in “Saved” state and won't be scheduled.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, hover over the Data Config bundle that you created, and select **Deploy** from **Actions**.
4. In Deploy Bundle, select the deployment option.

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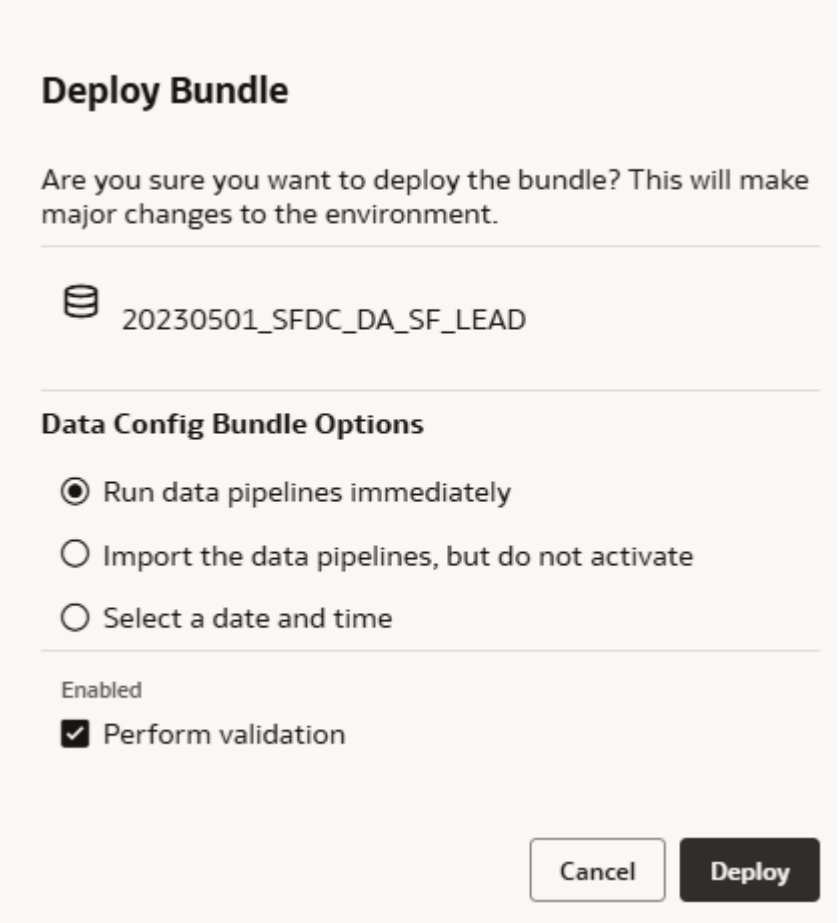

5. Select **Perform validation** to validate the bundle prior to deployment and click **Deploy**.

   If you choose to deselect **Perform validation**, the bundle deployment will always show a final status of Completed, even if some components failed and were skipped during deployment. If you do deselect this option, it's recommended you manually validate the deployment by reviewing the bundle reports.

Deploy a Semantic Model Bundle

If you're deploying the semantic extensions bundle or the composite bundle, you can either merge or replace the sandbox content and sandbox security in the target environment.

When you replace, you delete the existing semantic model extensions in the target environment and migrate the latest bundle. You must confirm the semantic model replacement to prevent unintended content loss. The merge option is helpful when you've deleted items in your source instance and want those deletions to be applied to the target instance. The default, Merge Sandbox Content, combines the changes from your source sandbox instance with the existing content on the target system.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, hover over the bundle that you created, click **Actions**, and from **Actions**, select **Deploy**.

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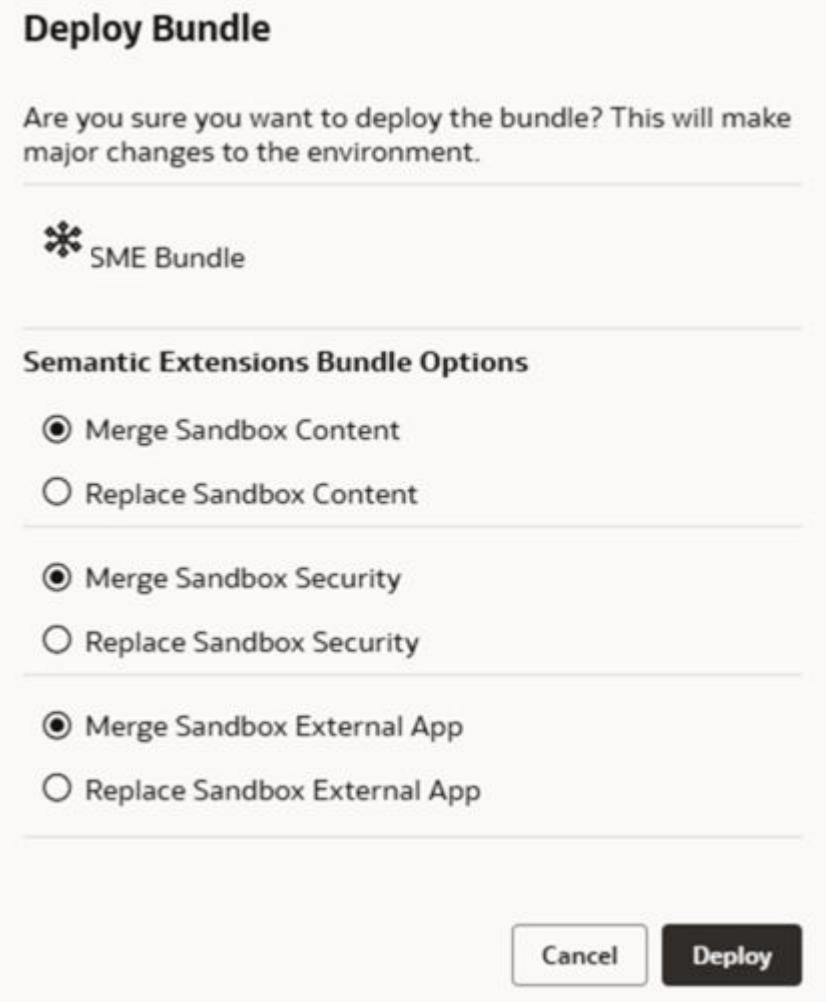
4. You can choose to merge or replace the sandbox content, external application, or security in Semantic Extensions Bundle.

   If you have enabled Upload multiple External Applications, you can choose to merge or replace the External Application. See Generally Available Features and Import Semantic Model.

   To Merge your Semantic Model, click **Deploy** to continue the merge immediately without a warning, or click **Cancel** to quit.

   To replace a Semantic Model component, click **Deploy**, then click **Confirm** to continue the replacement immediately without a final warning, or click **Cancel** to quit.

   > **Note**
   >
   > Replacing Sandbox Content will delete all existing sandboxes on the target and replace them with the sandboxes included in the bundle.



If you have chosen to replace a Semantic Model component, you get the following message to confirm or cancel the operation:

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During Semantic Model Extensions bundle deployment, the validation process checks for references to missing Data Augmentations or Descriptive Flexfields in the generated bundle. If any referenced objects are missing, the validation fails and a detailed report is available to download. Click **Download missing dependency details** to download a report of the missing objects. Then either deploy the missing objects to the target instance using the Data Config Bundle or remove their references from the Semantic Model Extensions customizations and regenerate the bundle.

Deploy a Security Bundle

Create a backup bundle of your current security before you proceed to deploy a Security bundle.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, hover over the Security bundle that you created, and select **Deploy** from **Actions**.
4. In the Deploy Bundle dialog, click **Deploy** if you are sure that you want to deploy the bundle. This will make major changes to the environment.

Deploy an Environment Bundle

Create a backup bundle of your current environment before you proceed to deploy a Environment bundle.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, hover over the Environment bundle that you created, and select **Deploy** from **Actions**.
4. In the Deploy Bundle dialog, click **Deploy** if you're sure that you want to deploy the bundle.

Deploy a Composite Bundle

Create a backup bundle of your current composite components before you proceed to deploy a Composite bundle.

When you deploy a Composite bundle, select the bundles for deployment and the applicable parameters.

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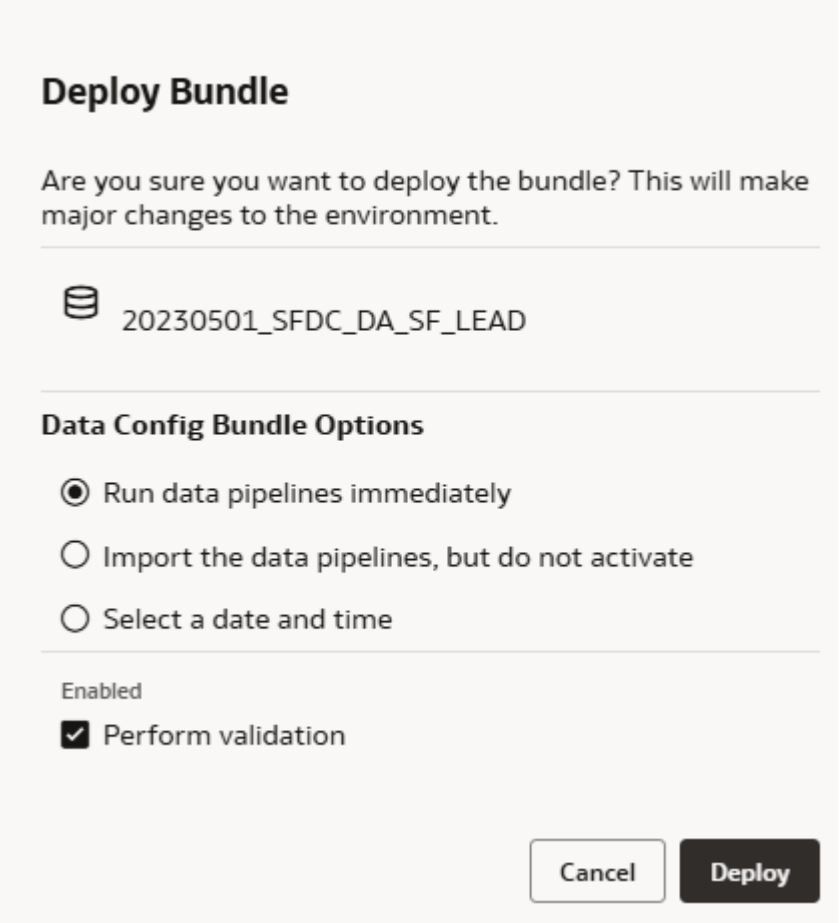
1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, hover over the Composite bundle that you created, and select **Deploy** from **Actions**.
4. Complete all parameters based on the base bundles selected in the composite bundle.

Deploy an Application Bundle

Create a backup bundle of your application before you proceed to deploy an Application bundle.

When you deploy an Application bundle, select the bundles for deployment and the applicable parameters.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, hover over the Application bundle that you created, and select **Deploy** from **Actions**.
4. In Deploy Bundle, select the deployment option.



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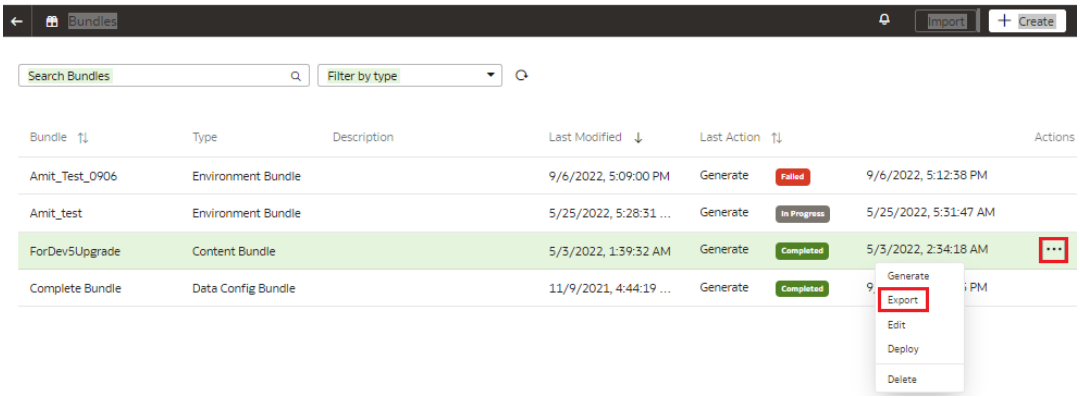
5. Select **Perform validation** to validate the bundle prior to deployment and click **Deploy**.

   If you choose to deselect **Perform validation**, the bundle deployment will always show a final status of Completed, even if some components failed and were skipped during deployment. If you do deselect this option, it's recommended you manually validate the deployment by reviewing the bundle reports.

Export a Bundle

Export the bundle .aab file from your source system to a repository or your local machine.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, hover over the bundle that you created and click under **Actions**.
4. From **Actions**, select **Export**.



Import a Bundle

Import the bundle .aab file into the target environment from your computer to restore the state of the application to the checkpoint represented by the bundle.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, click **Import**.



4. In the Import Bundle dialog, click in Drag and Drop, and then select the applicable .aab file from your local machine.

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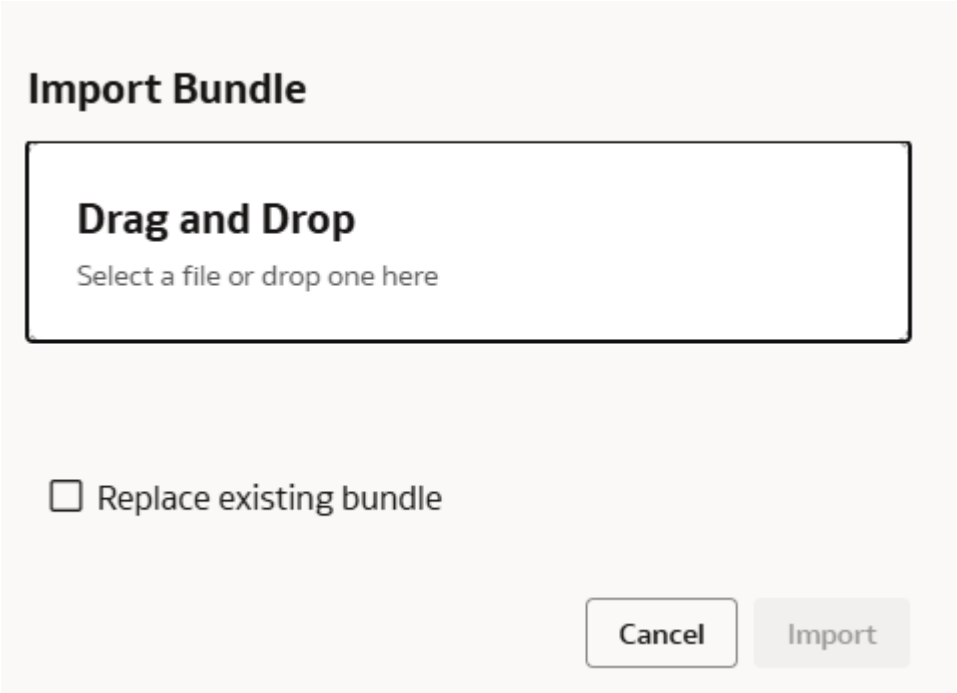
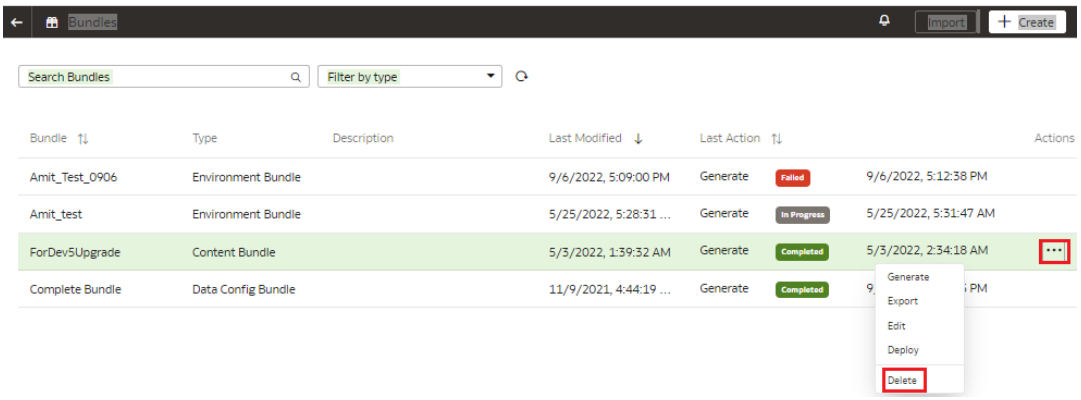


5. If you want to replace the existing bundle with the bundle you're importing, select **Replace existing bundle**.
6. Click **Import**.

Delete a Bundle

Delete a bundle if you no longer require the snapshot of your application artifacts captured in the bundle.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, hover over the bundle that you created and click under **Actions**.
4. From **Actions**, select **Delete**.



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View the Activity History of Bundles

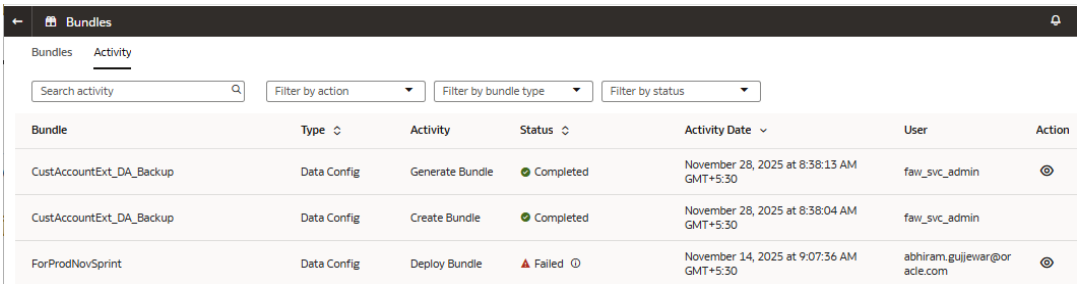
View all the bundles-related activities to understand the changes made to your instance, which bundles to use, and whether the existing bundles are still current. This information enables you to make informed decisions about creating updated bundles or deploying an existing bundle.

You see all the activities by bundle-related action, bundle names, bundle type, status, user who performed the activity, and date. You can organize the display by sorting columns, searching for activities, and filtering by action, bundle type, or status.

For a data configuration bundle, content bundle, and security bundle, you can view a report of:

- What was done when generate bundle was invoked.
- What was applied in the target system when the bundle was deployed.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundles** under **Application Administration**.
3. On the Bundles page, click the **Activity** tab.
4. For the content, security, and data configuration bundle-related generate and deploy activities, click the Action icon to view the activity details.



For example, click the Action icon for a generate data configuration bundle activity to view the details.

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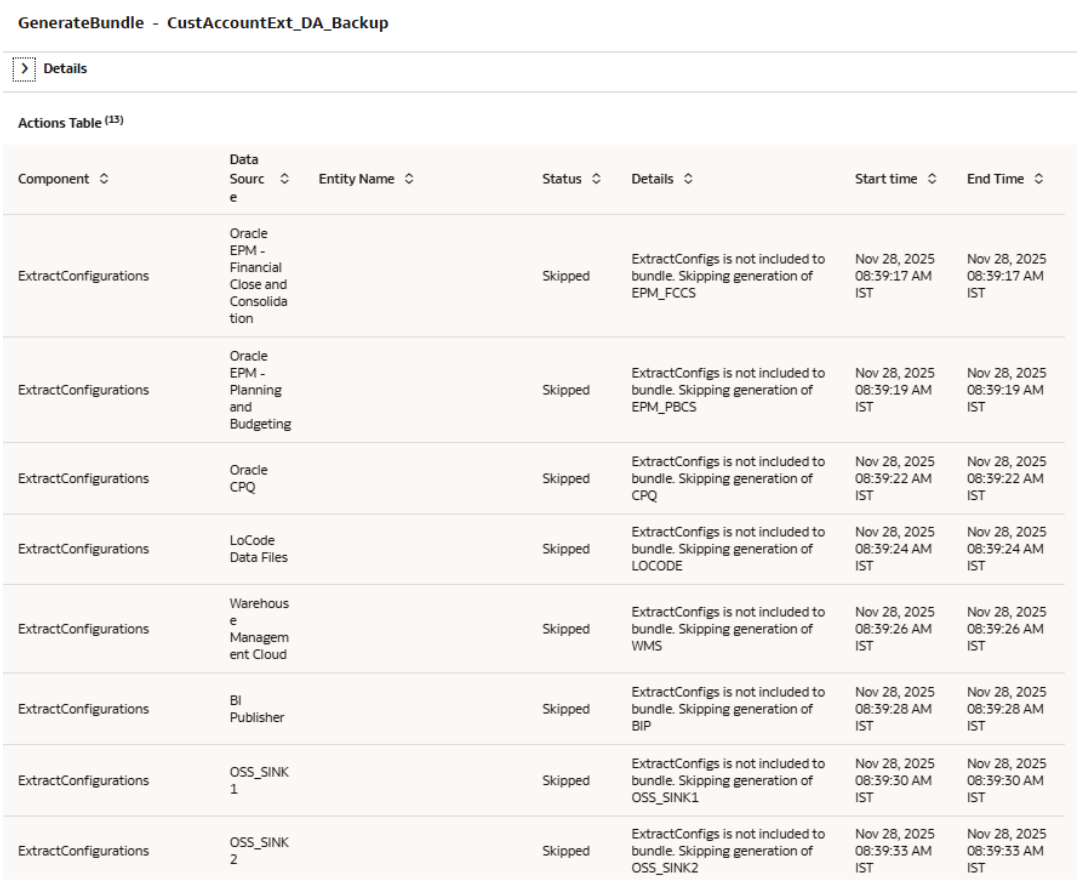

GenerateBundle - CustAccountExt_DA_Backup

Details

Actions Table (13)

Component	Data Source	Entity Name	Status	Details	Start time	End Time
ExtractConfigurations	Oracle EPM - Financial Close and Consolidation		Skipped	ExtractConfigs is not included to bundle. Skipping generation of EPM_FCCS	Nov 28, 2025 08:39:17 AM IST	Nov 28, 2025 08:39:17 AM IST
ExtractConfigurations	Oracle EPM - Planning and Budgeting		Skipped	ExtractConfigs is not included to bundle. Skipping generation of EPM_PBCS	Nov 28, 2025 08:39:19 AM IST	Nov 28, 2025 08:39:19 AM IST
ExtractConfigurations	Oracle CPQ		Skipped	ExtractConfigs is not included to bundle. Skipping generation of CPQ	Nov 28, 2025 08:39:22 AM IST	Nov 28, 2025 08:39:22 AM IST
ExtractConfigurations	LoCode Data Files		Skipped	ExtractConfigs is not included to bundle. Skipping generation of LOCODE	Nov 28, 2025 08:39:24 AM IST	Nov 28, 2025 08:39:24 AM IST
ExtractConfigurations	Warehouse Management Cloud		Skipped	ExtractConfigs is not included to bundle. Skipping generation of WMS	Nov 28, 2025 08:39:26 AM IST	Nov 28, 2025 08:39:26 AM IST
ExtractConfigurations	BI Publisher		Skipped	ExtractConfigs is not included to bundle. Skipping generation of BIP	Nov 28, 2025 08:39:28 AM IST	Nov 28, 2025 08:39:28 AM IST
ExtractConfigurations	OSS_SINK 1		Skipped	ExtractConfigs is not included to bundle. Skipping generation of OSS_SINK1	Nov 28, 2025 08:39:30 AM IST	Nov 28, 2025 08:39:30 AM IST
ExtractConfigurations	OSS_SINK 2		Skipped	ExtractConfigs is not included to bundle. Skipping generation of OSS_SINK2	Nov 28, 2025 08:39:33 AM IST	Nov 28, 2025 08:39:33 AM IST

Share Bundles

You can share bundles within the same tenancy as private bundles and as public bundles for tenancies with specific entitlements.

The Bundle Repository is a resilient store for bundles and provides the ability to create and manage the deployment of bundles. This repository enables you to easily manage sharing, importing, and deploying bundles.

Topics:

- About the Bundle Repository
- Publish a Bundle to the Repository
- Import a Shared Bundle
- Deploy a Shared Bundle

About the Bundle Repository

The Bundle Repository is an app-store like experience for users to import bundles created by partners or other users.

The repository enables Oracle internal and external partners to share bundles easily with users and provide updates. You can migrate bundles from lower to higher environments in the same tenancy. You don’t need to download bundles on your local machine or server.

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As a bundle creator, you can create a bundle using the Bundles tile on the Console and publish it to the repository using the Bundles Repository tile on the Console. While publishing the bundle to the repository, you can add terms and conditions, documentation, and usage guidelines. When you share any bundle to the Bundle Repository, the bundle is accessible to other instances. You must review and ensure the bundles are shared with correct settings and descriptions.

As a bundle consumer, you can view the details of each shared bundle and import them into your instance. After you import a shared bundle, you can then deploy it in your instance.

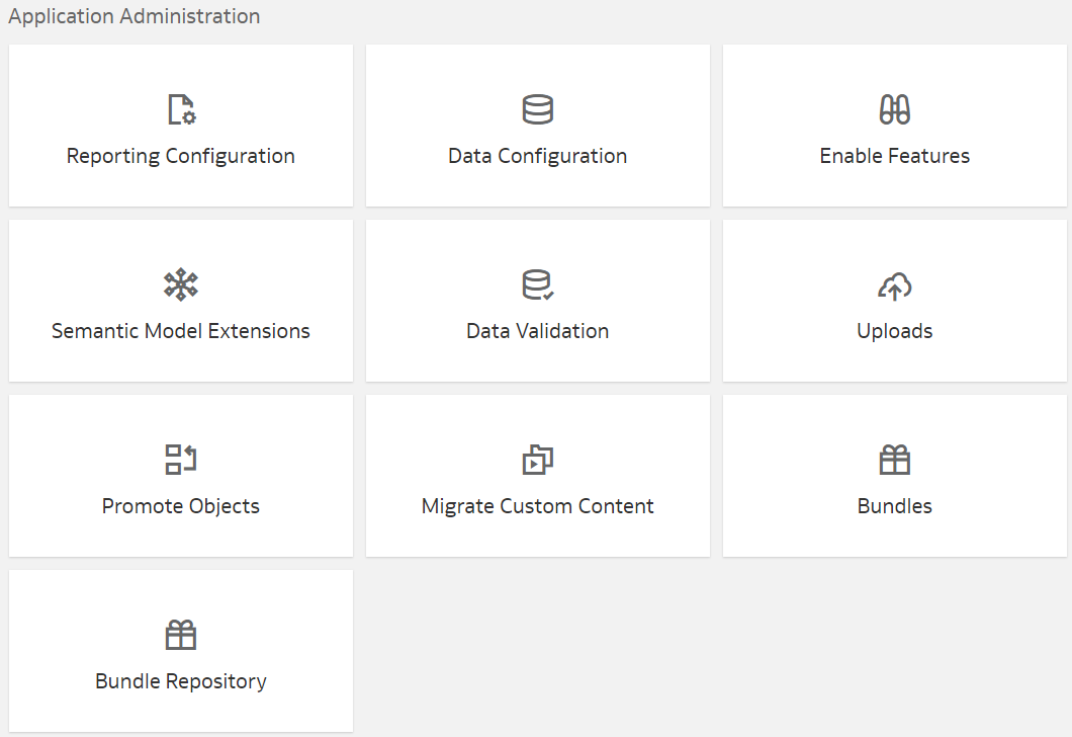
Bundle creators maintain any updates to a bundle and any restrictions for use. The updated bundle displays an "Update Available" message if you had installed it previously. You can then reimport it.

Publish a Bundle to the Repository

You publish a bundle to the repository to share it with others.

On the Bundle Repository page, under My Bundles, you see the bundles that you created using the Bundles tile. See About Bundles.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundle Repository** under **Application Administration**.



3. On the Bundle Repository page, click the My Bundles tab, and for the applicable bundle, click the Action icon and then click **Publish**.

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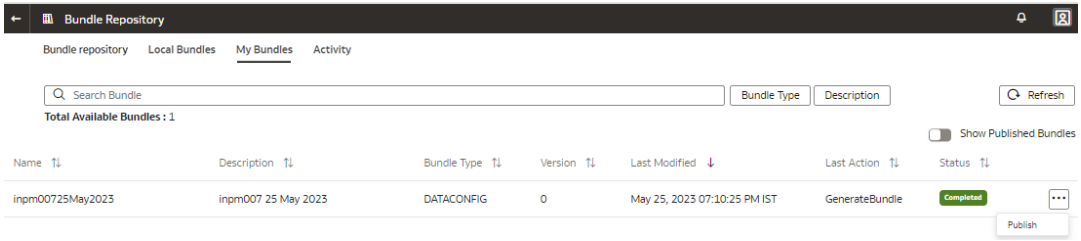

4. On the Publish Bundle page, provide the bundle details based on the bundle permission, and then click **Done**.

   A private bundle is a bundle that can be shared only within the same tenancy, meaning it is limited to users of that tenancy and not exposed as a public bundle for other tenancies.

   A public bundle is a bundle that is shared through the Bundle Repository and can be accessed by other tenancies that have the required entitlement, unlike a private bundle which is only visible within the same tenancy.

   When the protected bundles feature is enabled, you can protect the data application bundles you publish, and securely distribute the data application bundles in the Bundle Repository. Users can view the protected bundles in the Bundle Repository, but they require approval from the publisher of the protected bundle to import the protected bundle. Users can request access to protected bundles and the publisher can approve or reject the bundle access request. Select **Protected** to publish a protected bundle.



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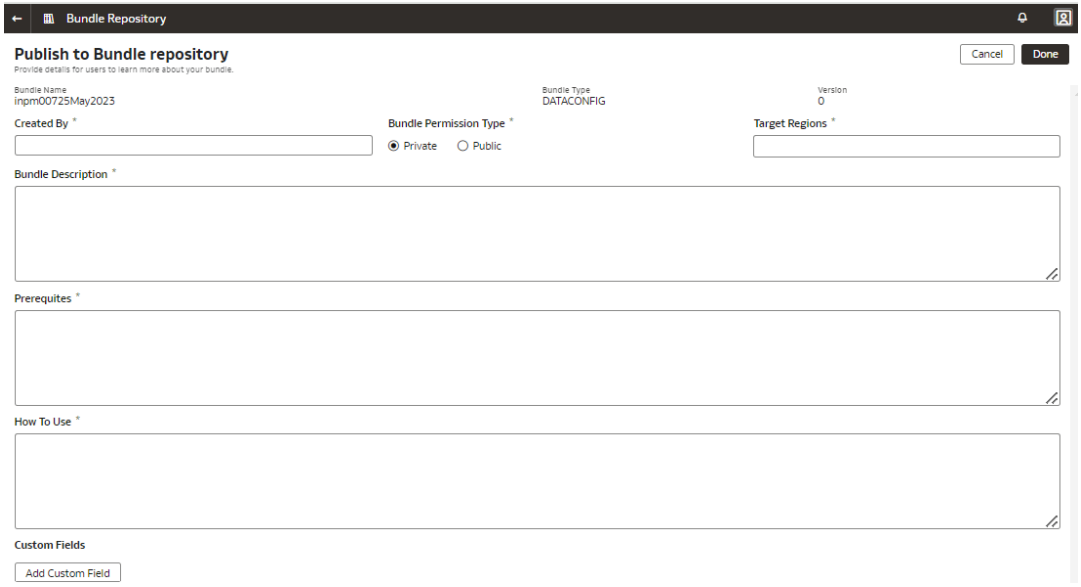

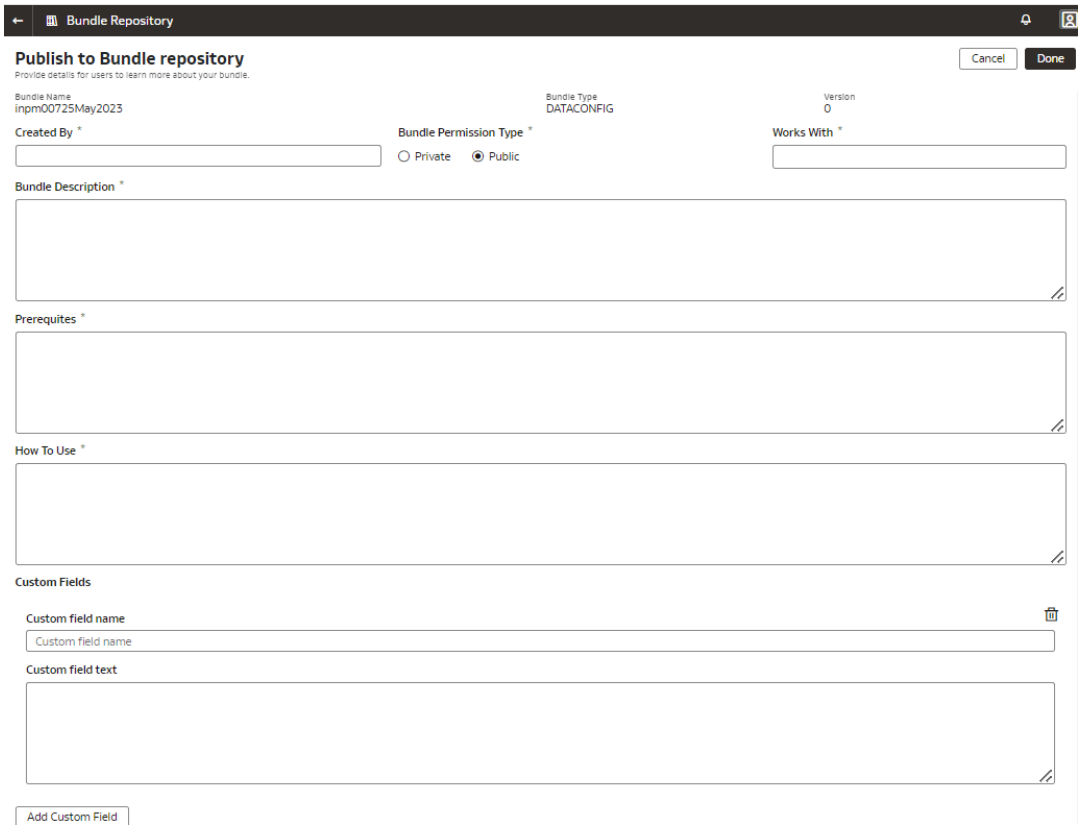

Import a Shared Bundle

You can view the bundles shared by others on the Bundles Repository page and you can import it into your instance to use the bundle objects in your semantic model extensions and data augmentations.

1. Sign in to your service.

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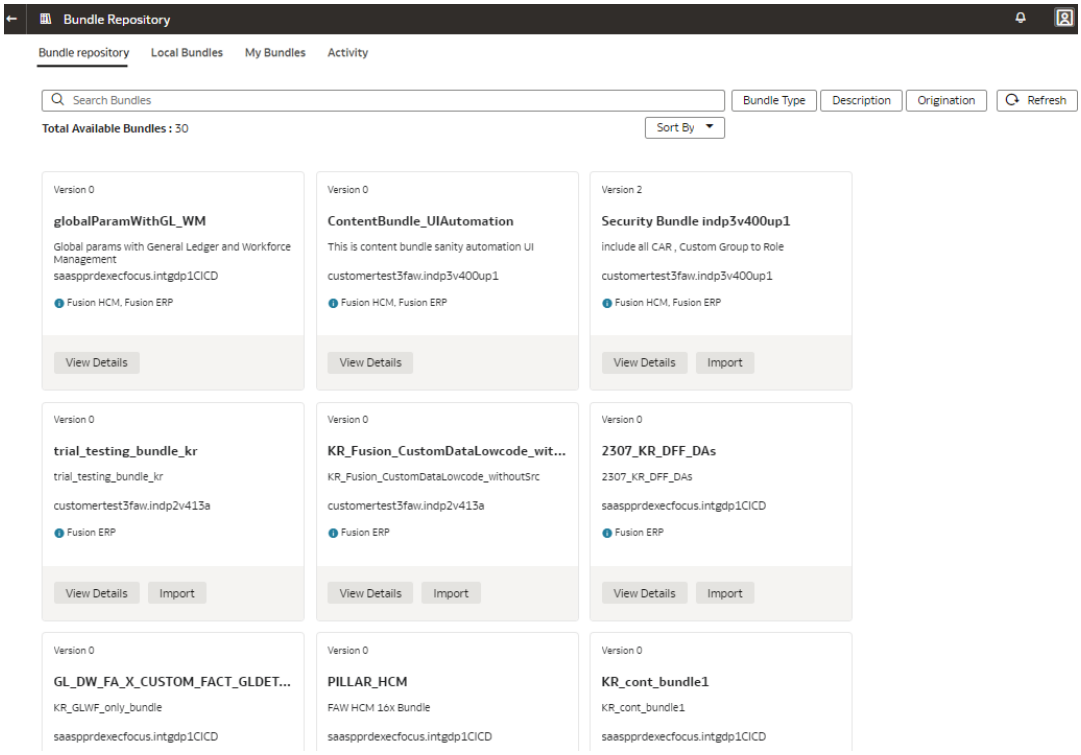
2. In Oracle Fusion Data Intelligence **Console**, click **Bundle Repository** under **Application Administration**.
3. On the Bundle Repository page, under the Bundle Repository tab, click an applicable bundle or search for a shared bundle, click **View Details** to review the shared details, and click **Import** to install the bundle in your instance.



If you want to import a protected bundle, you must have approval from the publisher to access the protected bundle. See Request Access to Protected Bundles.

4. In the Import Bundle dialog, review the terms of use, select the **I Agree to the terms** checkbox, and click **Submit**.

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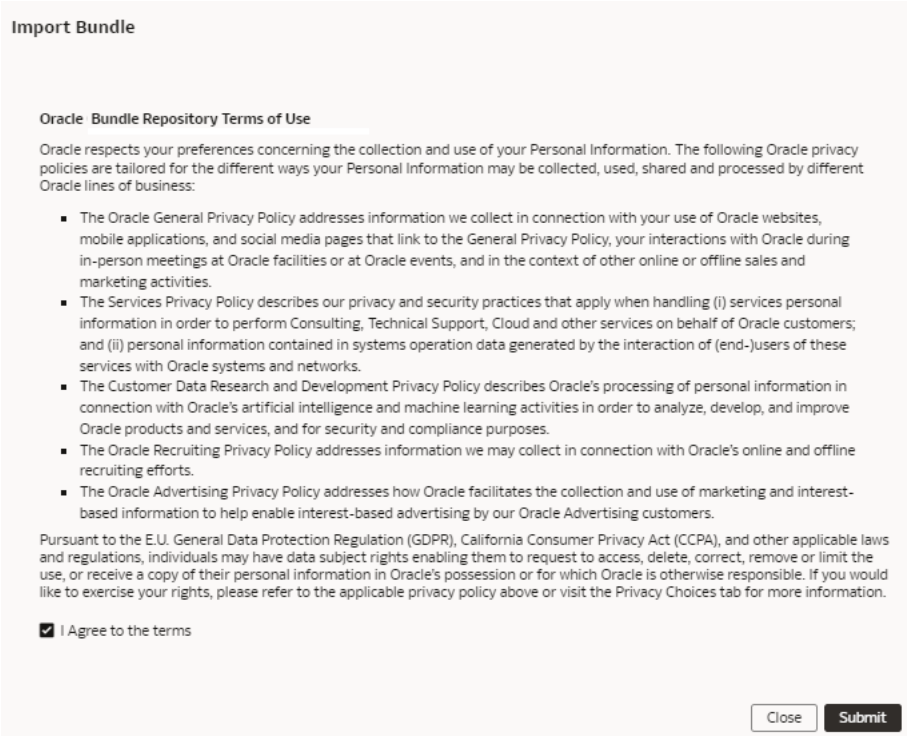
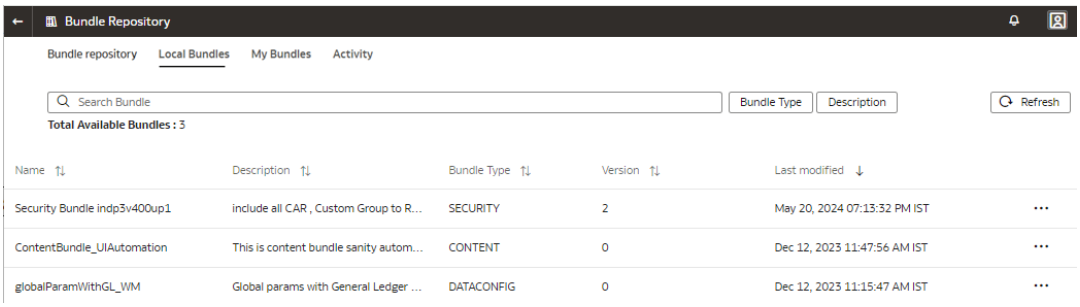


5. Verify the status of the import process on the Activity page and then verify that the shared bundle is visible under the Local Bundles tab.



Deploy a Shared Bundle

You can deploy the shared bundle that you imported into your instance to use the objects in the shared bundle. Oracle Fusion Data Intelligence validates the bundle before attempting any deployment to ensure software and model versions and any other dependencies are met.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundle Repository** under **Application Administration**.
3. On the Bundle Repository page, click the Local Bundles tab, hover over a shared bundle that you had imported, and then click the Actions icon.

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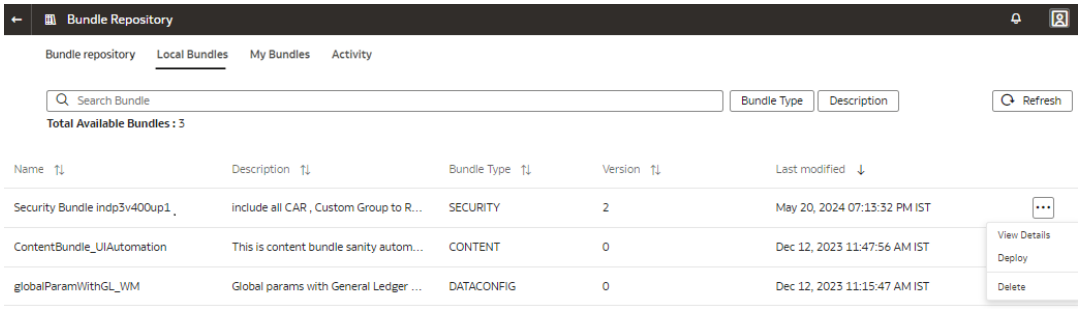
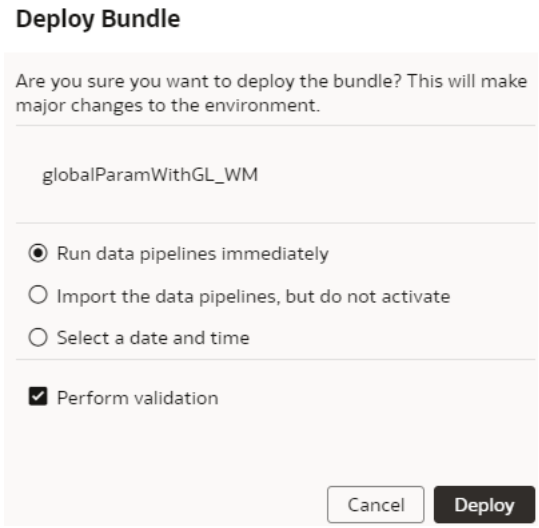


4. From Actions, select **Deploy**.
5. In the Deploy Bundle dialog, ensure that you see the bundle that you have selected, select the applicable actions, and then click **Deploy**.



Request Access to Protected Bundles

If you want to import a protected bundle from the Bundle Repository, you must first get access to the protected bundle.

Only after you get approval from the publisher of the protected bundle, you can import a protected bundle from the Bundle Repository. Perform these steps to request access to a protected bundle.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Bundle Repository** under **Application Administration**.
3. On the Bundle Repository page, under the Bundle Repository tab, click the protected bundle or search for the bundle you want to request access, click **View Details** to review the shared details, and click **Request Access** .

   Protected bundles are identified by a lock icon, indicating restricted access and controlled usage within the Bundle Repository.

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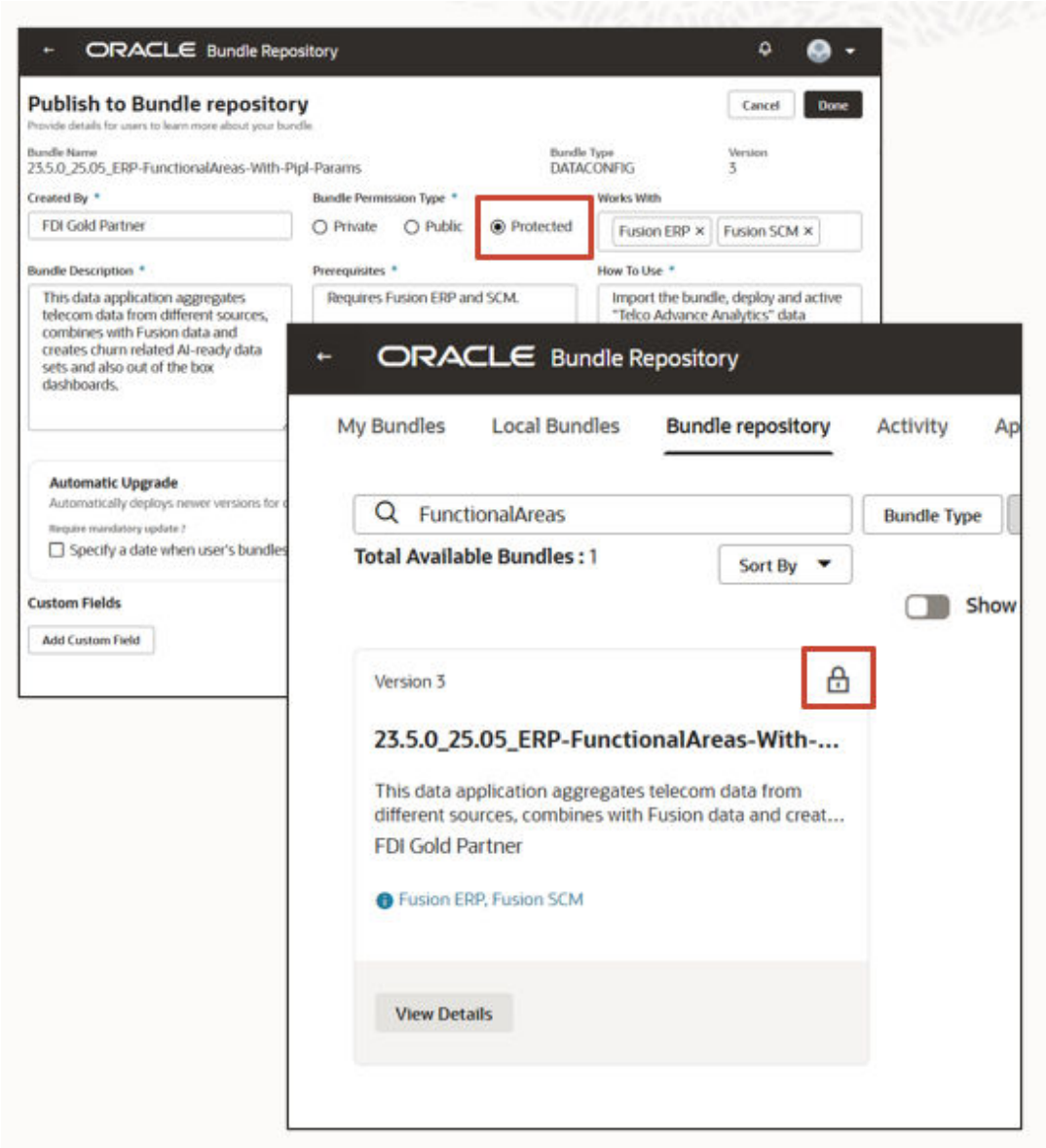

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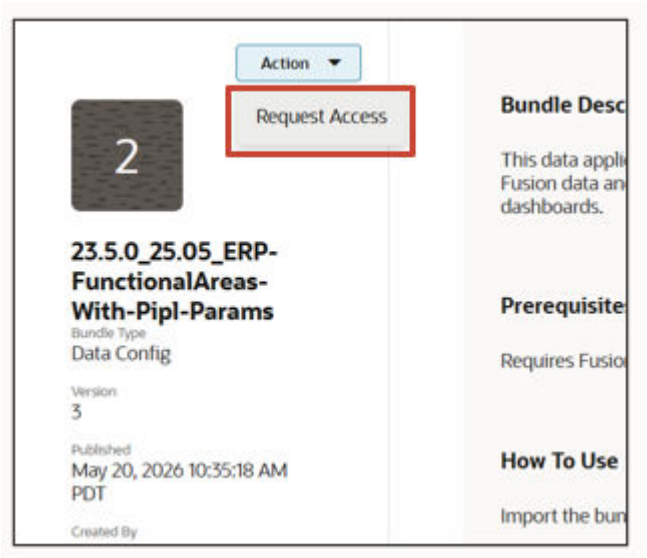
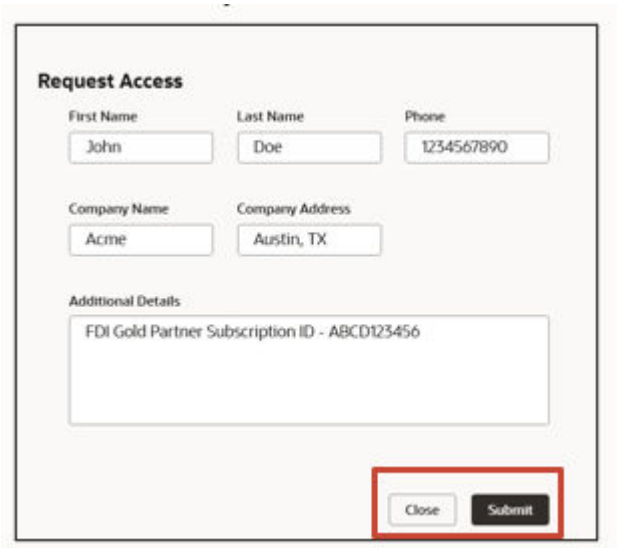


4. Provide your details in the Request Access form and click **Submit**.



The publisher of the protected bundle receives the bundle access requests and can approve or reject the request. Only after you receive approval from the publisher, you can import a protected bundle. See Import a Shared Bundle.

Approve Protected Bundle Access Requests

The publishers of protected bundles can review and manage access requests for their protected bundles. Publishers can view request details, filter requests by status, and take actions such as Approve, Reject, or View Details directly from the request list.

A requestor can withdraw a request if the bundle is no longer required or if the bundle was requested by mistake. In case the publisher rejected a request, the requestor can resubmit the request by providing additional details mentioning why they need to access the protected bundle. Publisher can review both new requests and resubmitted requests.

1. Sign in to your service.

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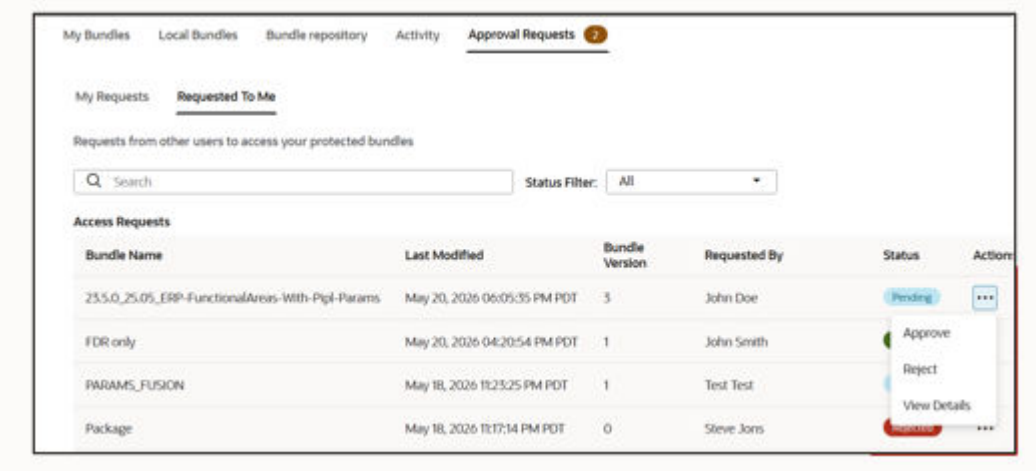
2. In Oracle Fusion Data Intelligence **Console**, click **Bundle Repository** under **Application Administration**.
3. On the Approval Requests tab, click **Requested to me** to view the access requests received for your protected bundles.



4. Click **View Details** to review the request details and take action such as **Approve** or **Reject**.

Configure a Virus Scanner

To keep Oracle Fusion Data Intelligence virus-free, Oracle highly recommends that you set up the virus scanning servers used by your organization running on either 443 or 1708 ports only, to scan any files that are uploaded to Oracle Fusion Data Intelligence.

When you configure virus scanning, the scanner checks all uploaded files including data files from the data pipeline and snapshots that you upload to restore content or to migrate content from another environment.

1. Sign in to your service.
2. In Oracle Fusion Data Intelligence **Console**, click **Virus Scanner** under **Service Administration**.
3. On the Virus Scanner page, 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**.

Back Up and Restore

You might need to back up or restore Oracle Fusion Data Intelligence for several critical reasons, including business continuity, regulatory compliance or auditing, testing or development, and ensuring peace of mind.

Key scenarios for backup and restore:

- **Recovering from errors or unintended changes**

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An effective backup and recovery plan considers all key components, including Oracle Cloud Infrastructure Identity and Access Management, Oracle Fusion Data Intelligence Console configurations, Oracle Analytics Cloud, and Oracle Autonomous AI Lakehouse. This allows you to revert to a previous state that is free of errors and unintended changes across the solution stack.

- **Syncing test and development instances with production instance**

  Backing up and restoring production data in test or development environments enables accurate replication for testing, development, or training. This approach allows you to experiment with new features, troubleshoot issues, or conduct training without impacting the production environment.

- **Cloning instances for disaster recovery (DR) or regional moves**

  Backups are vital for rapid restoration after significant incidents such as natural disasters or major system failures. Maintaining a backup in another region enhances resilience against localized disasters or supports business needs for geographic relocation. This can be achieved through new subscriptions or an Additional Test Environment (ATE). See About Disaster Recovery.

- **Data loss prevention for custom objects and Autonomous Data Warehouse data**

  Backing up data and custom objects stored in Oracle Autonomous AI Lakehouse creates a reliable safety net. This protects your business from risks such as accidental deletions, overwrites, or unexpected disasters. See Custom Backup for Oracle Autonomous AI Lakehouse.

Tools and features available to support the backup and restore operations for Oracle Fusion Data Intelligence:

- **Bundles**

  Enables point-in-time snapshots of application artifacts, such as configurations and customizations, allowing easy backup and retrieval. See Bundle Your Application Artifacts.

- **Data Configuration Resets**

  You have two options for reset:

  - Reset the Data Warehouse - Restore your data warehouse to a prebuilt state. Resetting the data warehouse will lead to permanent deletion of all existing data. To resume data loading, you must reactivate all the functional areas; data will remain unavailable until the pipelines are complete.
  - Reset and Reload the Data Source - Reset and reload the data source to trigger a complete refresh, that will delete all your existing data and perform a full reload from the beginning, based on the defined initial extract date. This action applies to all active functional areas, augmentations, and data applications.

- **Automatic Backups**

  Oracle Autonomous AI Lakehouse performs automated daily backups, ensuring ongoing data protection with minimal manual intervention. See Automated Backup for Oracle Autonomous AI Lakehouse.

- **Data Pump**

  Supports high-speed transfer of data and metadata between databases, facilitating both backup and migration activities. See Custom Backup for Oracle Autonomous AI Lakehouse.

- **Manual Processes**

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Involves capturing screenshots or manually exporting configuration data from the source system, an then manually entering or recreating in the target system. This method might be less efficient; however this method might be necessary for specific use cases or for supplementing the automated processes.

Refer to the backup and restore strategies for each component to facilitate your recovery should it be required. When backing up and restoring, utilize bundles when feasible. Perform the specified tasks manually for strategies where you can't use bundles to backup and restore.

Topics:

- Strategies for Backing up and Restoring Oracle Cloud Infrastructure Identity and Access Management
- Strategies for Backing up and Restoring Oracle Fusion Data Intelligence Console Configurations
- Strategies for Backing up and Restoring Oracle Analytics Cloud
- Strategies for Backing Up and Restoring Oracle Autonomous AI Lakehouse
- Automated Backup for Oracle Autonomous AI Lakehouse
- Custom Backup for Oracle Autonomous AI Lakehouse

Strategies for Backing up and Restoring Oracle Cloud Infrastructure Identity and Access Management

When backing up and restoring Oracle Cloud Infrastructure Identity and Access Management to another instance, it's recommended to use the Oracle Cloud Infrastructure Console to recreate the users, group entitlements, connections, and PaaS component settings.

Area	Artifact	Bundles	Manual	Backup and Restore Strategy
Security	Users and Groups	No	Yes	Manage Users, Groups, Application Roles, and Data Access
Oracle Cloud Infrastructure Console settings	Entitlements, connections, PaaS component settings	No	Yes	Get to Know the Console

Strategies for Backing up and Restoring Oracle Fusion Data Intelligence Console Configurations

When backing up and restoring Oracle Fusion Data Intelligence Console settings to another instance, it's recommended to utilize bundles when feasible, and handle the remaining settings through manual adjustments.

Area	Artifact	Bundles	Manual	Backup and Restore Strategy
Security	Application Roles	Yes	No	Security and Environment bundle

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Area	Artifact	Bundles	Manual	Backup and Restore Strategy
Security	Group to Application Role assignments	Yes	No	Security and Environment bundle
Security	Security Contexts including Configurable Context	Yes	No	Semantic and Environment bundle
Uploaded files	Financial Categories and Security assignments	No	Yes	Manage Uploads and Downloads
System settings	Oracle Analytics Cloud system settings including Preview features	No	Yes	Configure Advanced Options
Enable features	Activated Fusion Data Intelligence features	No	Yes	Make Preview Features Available
Semantic model extensions	Custom Semantic Model components such as External Applications, System Extensions, User Extensions, and Security Configurations	Yes	No	Semantic and Environment bundle
Data validations	Scheduled validations such as AP Invoices, weekly	No	Yes	Perform Data Validation
Reporting configurations	Oracle Analytics Cloud reporting artifacts (excluding datasets)	Yes	No	Content bundle
Reporting configurations	Advanced (Configurable Account Analysis (CAA) and Fusion Accounting Hub)	No	Yes	Advanced Configurations
Data pipeline	Pipeline parameters, functional areas, and data augmentations	Yes	No	Data Configurations bundle
Data pipeline	Frequent refresh modules, tables, and prioritized refresh	No	Yes	Schedule Frequent Data Refreshes
Data pipeline	Warehouse full reload schedules	No	Yes	Schedule Reload of Data
Data pipeline	Data applications – DFFs	Yes	No	Data configurations bundle

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Area	Artifact	Bundles	Manual	Backup and Restore Strategy
Data pipeline	Data applications such as Configurable Account Analysis	Yes	No	Content bundle
Data pipeline	Data share and bulk data augmentations, if enabled	Yes	No	Data configurations bundle
Connections	Data augmentation connectors	No	Yes	Manage Data Connections

Strategies for Backing up and Restoring Oracle Analytics Cloud

When backing up and restoring Oracle Analytics Cloud content components, utilize bundles when feasible and handle the remaining settings through manual adjustments.

Oracle Analytics Cloud traditionally provides snapshots as a mechanism to backup artifacts. However, Oracle Fusion Data Intelligence doesn't have the ability to use the Oracle Analytics Cloud snapshots. Use bundles to backup Oracle Analytics Cloud artifacts and Oracle Fusion Data Intelligence customizations and configurations. For example, you can export an Oracle Fusion Data Intelligence environment bundle periodically (for example, weekly) to a resilient file store like Oracle Storage Service. When something goes wrong with one of your environments, you can import the bundle into another Oracle Fusion Data Intelligence environment and deploy it. See Bundle Your Application Artifacts.

When you restore the content, the system restores it to the point of backup. Any incremental content that you added between the backup and restore actions won't be available. If your instance has been upgraded after you've taken a backup and you restore on the upgraded instance, Oracle upgrades the platform to the new instance version before restoring the content. To restore your latest content, you must create a service request. Once you have restored a previous version of the content and completed the next pipeline run, create a service request for Oracle to update the content metadata to ensure the latest definitions of the objects are created. This enables future patching and upgrades to be performed on the restored snapshots.

Area	Artifact	Bundles	Manual	Backup and Restore Strategy
Reporting	Key metrics, Workbooks, Connections, and Analyses	Yes	No	Content and Environment bundle
Advanced modelling	Data flows, Functions, and Machine Learning applications	Yes	No	Environment bundle

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Area	Artifact	Bundles	Manual	Backup and Restore Strategy
Datasets	Datasets based on Connections (such as Databases, Object Storage, Essbase, REST Endpoints)	No	Yes	• Export and Import Workbook (which includes the datasets reference). See Import a Workbook File . • Configure the connection configurations. See Create Datasets from Data Sources .
Datasets	Datasets based on file uploads (.XLSX, .XLS, Google Sheets, CSV, and TXT)	No	Yes	• Export and Import Workbook (which includes the datasets reference). See Import a Workbook File. • Import the file into the dataset. See Create Datasets from Files.

Strategies for Backing Up and Restoring Oracle Autonomous AI Lakehouse

To ensure effective backup and recovery of your Oracle Autonomous AI Lakehouse, it's important for you understand how each object was originally created and populated. By accounting for these origins, you can design a backup strategy that captures all critical components of your data warehouse.

Oracle Autonomous AI Lakehouse objects are typically created in one of the following ways:

- **Oracle Fusion Data Intelligence Prebuilt Pipelines**

  Objects are automatically created and populated by the Oracle Fusion Data Intelligence's standard, prebuilt data pipelines. These objects don't require separate backups. If you need to restore, use the Reset the Data Warehouse option to restore the objects created by prebuilt data pipelines.

- **User-Defined Configurations**

  Objects are generated through Oracle Fusion Data Intelligence's built-in configuration options (for example, data augmentations or custom user-defined configurations). These objects also don't require separate backups. If you need to restore, use the Reset and Reload the Data Source option to restore the user defined configurations.

- **Manual Methods**

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Objects that are created or populated manually, such as through direct database interactions (for example, PL/SQL scripts, query editors) or Extract, Transform, and Load (ETL) tools. These objects require backup. Oracle recommends you use Oracle Data Pump to back up and restore these objects.

When backing up and restoring the Oracle Autonomous AI Lakehouse objects to another instance, follow these manual processes.

Area	Artifact	Bundles	Manual	Backup and Restore Strategy
Custom database objects	• Custom database schemas and all objects within the custom schema • Custom objects within OAX_USER schema	No	Yes	See *Backing Up and Restoring Oracle Autonomous AI Lakehouse Objects and Data* mentioned later in this table.
Database objects created from Oracle Fusion Data Intelligence Console configurations	Database objects created or updated by data pipeline	No	Yes	Reset the Data Warehouse
Database objects created from Oracle Fusion Data Intelligence Console configurations	Database objects created or updated by data augmentation	No	Yes	Reset and Reload the Data Source
Database objects created from Oracle Fusion Data Intelligence Console configurations	Database objects created or updated by data applications (such as Configurable Account Analysis and Fusion Accounting Hub)	No	Yes	Advanced Configurations
Database objects created from Oracle Fusion Data Intelligence Console configurations	Database objects created or updated by the Frequent Data Refresh process	No	Yes	Schedule Frequent Data Refreshes

Automated Backup for Oracle Autonomous AI Lakehouse

Oracle Autonomous AI Lakehouse has automated daily backups for the last 30 days.

These backups allow you to restore the database within a region. While automated backups are available, directly restoring an Oracle Autonomous AI Lakehouse associated with Oracle Fusion Data Intelligence is not the preferred method because it can lead to an inconsistent state for the data pipelines and prebuilt content. See About Backup and Recovery on Autonomous Database. If you decide to use the automated Oracle Autonomous AI Lakehouse backup to restore, ensure to reload all custom schemas.

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Custom Backup for Oracle Autonomous AI Lakehouse

For backing up Oracle Autonomous AI Lakehouse selective custom schemas and custom objects, Oracle Data Pump is the recommended approach.

Create fine-grained backups using Oracle Data Pump and securely save the backups to a resilient file store such as Oracle Storage Service. You can subsequently import these backups to recover database objects and data in the event of a disaster. See Back Up Oracle Fusion Data Intelligence Data with Oracle Data Pump Technical Paper and Overview of Oracle Data Pump.

About Disaster Recovery

Oracle Fusion Data Intelligence is built upon Oracle Cloud Infrastructure and leverages Oracle PaaS services like Oracle Analytics Cloud and Oracle Autonomous AI Lakehouse.

For Oracle Fusion Data Intelligence prebuilt content, you can provision a fresh Oracle Fusion Data Intelligence environment with the latest software and perform the data activation steps. Oracle Fusion Cloud Applications provides the data for Oracle Fusion Data Intelligence. Use a data reset to populate Oracle Fusion Data Intelligence with historical data from the Oracle Fusion Cloud Applications source at any time. Customizations to Oracle Fusion Data Intelligence and any custom ETL and schemas are the key concerns in case of a region-wide disaster recovery event.

There is currently no automated failover in the event of a region-wide disaster. If you need a disaster recovery strategy for region-wide failures, then here are two suggestions:

1. Purchase another Oracle Fusion Data Intelligence subscription and provision it in a region other than your production environment. This gives you another active environment for your business users in case the primary region has a disaster.
2. Provision an Oracle Fusion Data Intelligence Additional Test Environment (ATE) in a different region than the production environment as a backup instance.

> **Note**
>
> Autonomous Data Guard and Cloning capability aren't supported to replicate Oracle Fusion Data Intelligence data. See Usage Guidelines for Autonomous AI Lakehouse Associated with Oracle Fusion Data Intelligence.

In either option, you can connect the backup instance to the same Oracle Fusion Cloud Applications source as your production instance and refresh data. You may choose a different data refresh frequency (for example, daily or weekly) or a different start time compared to the production instance (for example, 12 hours after production instance daily refresh time). In the case of a disaster, the Oracle Fusion Cloud Applications source URL continues to be available after a failover.

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> **Note**
>
> An integrated instance mandatorily uses the same cloud tenancy, identity domain, region, compartment, and instance type as that of the Oracle Fusion Cloud Applications instance. The authentication setup between Oracle Fusion Data Intelligence and Oracle Fusion Cloud Applications is OAuth only. Using the Network Access options, you can allow access to the instance from anywhere or create an instance with restricted access through a private endpoint.
>
> If you want to use a different tenancy, identity domain, region, compartment, and instance type from that of the Oracle Fusion Cloud Applications instance, then see Create an Oracle Fusion Data Intelligence Standalone Instance or Create an Oracle Fusion Data Intelligence Instance Without Oracle Fusion Cloud Applications Source.

Maintain the backup environment in synchrony with the primary production environment by repeating any action taken in the production environment. It's best to make this a part of your change process and operations play book. You can use Bundles as a tool to export customizations from the production environment and import them into the backup instance.

In the event of a disaster, you can ask key business users to use the Oracle Analytics Cloud URL from your backup instance until the production region is restored. If you setup ATE as a backup instance, it won't have the same size as production. If you wish to switch all business users to this instance, then you will have to pay to scale-up the ATE resources such as Oracle Analytics Cloud OCPUs or Oracle Autonomous AI Lakehouse ECPUs and storage.

For non-OC1 (non-commercial) realms, an additional configuration is required. For example, if you want to create a backup instance in UK Gov West (Newport) while the primary is in UK Gov South (London), then you must:

1. Sign in to the default domain, switch to the UK Gov West (Newport) region, and create a domain that is homed in the UK Gov West (Newport) region. See Creating an Identity Domain.
2. Configure single sign-on to the domain in the UK Gov South (London) region. See Configure Single Sign-on Between Two Identity Domains.
3. Sign in to the new domain in UK Gov West (Newport) and create the Oracle Fusion Data Intelligence instance. See Create an Oracle Fusion Data Intelligence Instance.

About Scaling Resources

You can scale the resources provided by default with Oracle Fusion Data Intelligence based on your workload.

An activated Oracle Fusion Data Intelligence subscription enables a cloud account administrator and service administrator to create the following types of instances:

- Development/Test
- Additional test (ATE)
- Production

The development/test and ATE instances typically have smaller capacity compared to the production instance. These instances are different in the following ways:

- The development instance and ATE are for testing with a subset of data such as last 1 year as opposed to the full history and a subset of concurrent business users.

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- The development instance is to develop or test reports and customizations before deploying them in the production instance for business users.
- The production instance is for production level business needs such as all historical data and all business users.
- The production instance has higher resources and therefore higher performance.
- Oracle monitors the production instances to ensure satisfactory level of service for the predefined content.

Prior to scaling these instances, note the following:

- You'll incur additional usage charges if you scale up compute and storage resources.
- You can scale up resources on your own using the Oracle Cloud Infrastructure Console if you've an UCC subscription for PAYGO.
- You can't scale down below the provisioned capacity.
- You might need to scale up the Oracle Analytics Cloud instance associated with your Oracle Fusion Data Intelligence instance in scenarios such as these:
  - Extensive semantic model extensions.
  - Extensive custom reports.
  - Use of large custom data sets.
  - Merge of external applications into the Oracle Fusion Data Intelligence semantic model.
  - Sluggish report performance due to many concurrent users.
- You can monitor the Oracle Analytics Cloud instance associated with your Oracle Fusion Data Intelligence instance using the Metrics option. See Monitor Metrics.
- You might need to scale up the Oracle Autonomous AI Lakehouse instance associated with your Oracle Fusion Data Intelligence instance in scenarios such as these:
  - Extensive use of data warehouse tools such as Oracle Machine Learning (OML) and Application Express (APEX).
  - Custom data that exceeds 50 GB.
  - Extensive custom queries.
  - Use of custom apps or tools against the database.
  - Many concurrent users running reports.
- You can monitor the Oracle Autonomous AI Lakehouse instance associated with your Oracle Fusion Data Intelligence instance using the Performance Hub and Metrics Explorer options. See Monitor and Manage Database Performance andMonitor Metrics.
- You can scale up the development/test instance and ATE in scenarios such as these:
  - Testing customizations before deploying them to the production instance.
  - Stress-testing that requires temporarily scaling up the instance.
  - Bringing additional volumes of data into the development/test instance and ATE.

Scale the resources as follows:

- To scale the Oracle Analytics Cloud instance associated with your Oracle Fusion Data Intelligence instance, see Change Oracle Analytics Cloud Capacity.
- To scale the Oracle Autonomous AI Lakehouse instance associated with your Oracle Fusion Data Intelligence instance, see Scale Up Oracle Autonomous Data Warehouse.

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About Licensing

If you plan to use the data from Oracle Fusion Data Intelligence with third-party tools or in applications you build on your own or for exporting data to a third-party store, then you need to use the employee metric for your Oracle Fusion Data Intelligence subscription.

For example, if you've a ten-user license of Oracle Fusion ERP Analytics and you export data into a data lake to combine with other data or for any other downstream use, then you need to license Oracle Fusion Data Intelligence for all employees in your organization.

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9

Use AI capabilities in Oracle Fusion Data Intelligence

You can connect Oracle Fusion Data Intelligence to AI, such as AI agentic workflows, applications, agents, and MCP hosts/clients.

Topics:

- Access AI Concierge
- Access Oracle Fusion Data Intelligence MCP Server (Preview)

Access AI Concierge

AI Concierge provides administrators and consumers AI-powered capabilities in Oracle Fusion Data Intelligence. You can ask questions in conversational English, and receive real-time information related to configurations specific to the instance and get assistance for your queries.

The AI Concierge experience for administrators and consumers depends on their privileges. Consumers can only make informational queries. They aren't allowed to take any action such as enabling features. See Licensed Roles.

> **Note**
>
> Security Disclaimer: AI Concierge requests are always processed within a secure Oracle Cloud Infrastructure environment. Your AI Concierge request may be routed to another Oracle Cloud Infrastructure region for processing.

Topics:

- AI Concierge for Administrators
- Live Information Queries
- Sample Queries
- Tips for Optimal Usage of AI Concierge
- DA Script Tutor
- Extend Entities with DA Script
- DA Script Code Assistant
- AI Concierge for Consumers

AI Concierge for Administrators

Users with administrator privileges can ask administrative questions and use AI Concierge to help perform tasks such as activating functional areas, enabling features, creating data extensions, and configuring data pipeline parameters under their supervision.

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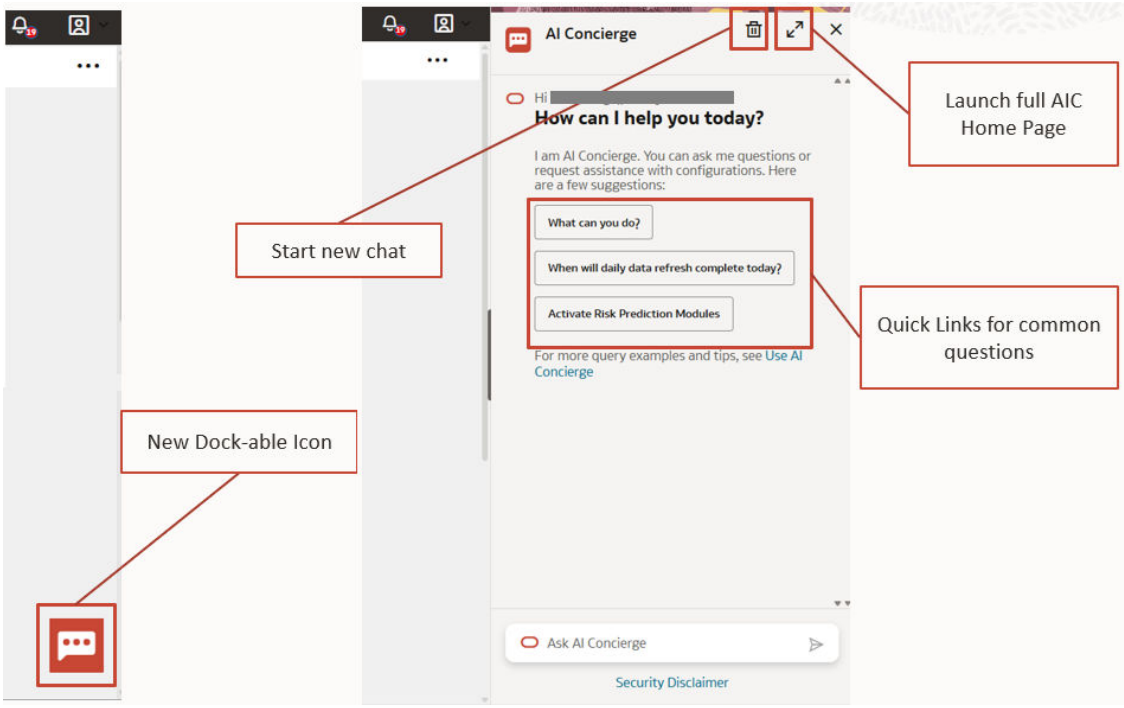
Administrators can use AI Concierge in a full-page view for better readability or switch to in-console view (side panel) while using the admin pages. Administrators can start a new chat, use quick links for common questions, and use seamless access to AI assistance without disrupting the workflow.



Administrators can ask AI Concierge administrator-related questions such as:

- Information queries: How do I activate a functional area?
- Pipeline refresh status: What's the estimated completion time for my daily data refresh?
- Frequent Data Refresh: Is Accounts payable selected for frequent data refresh?
- Reload Data Schedule: Which Functional Areas are not configured in the reload data schedule?

Administrators can ask AI Concierge task-related questions such as:

- Data augmentation: Extend invoices with collector name and date of issue.
- Configuration: Activate HCM Benefits functional area.

You're always in control because for each task it first shows you what steps must be performed to accomplish your goal, and it acts only with your consent.

Live Information Queries

Use AI Concierge to make informational queries related to Oracle Fusion Data Intelligence instance and receive real-time information related to configurations specific to the instance.

Here are some of the capabilities you can query on:

- Pipeline Observability - Details of scheduled, in-progress, or completed data refreshes
- Activated Functional Areas
- Pipeline settings

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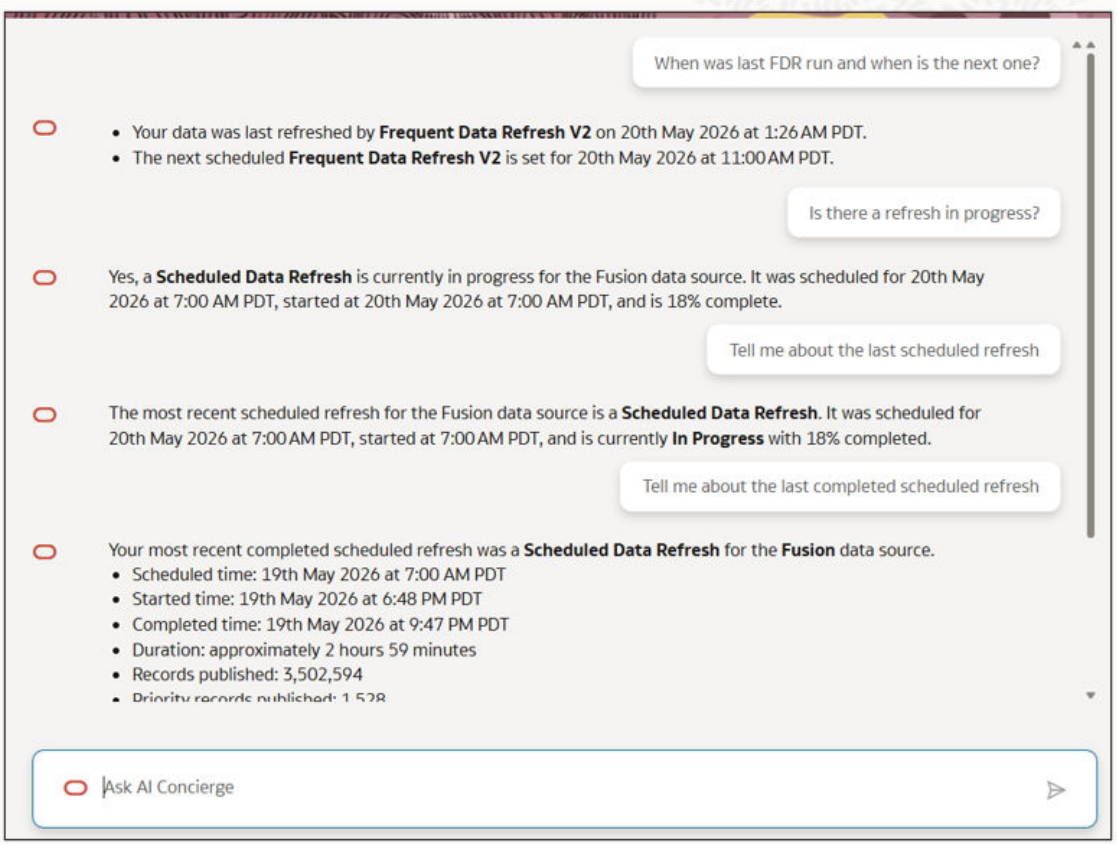
- Request history
- Prioritized refresh
- FDR configurations
- Full reload schedule configurations
- Data maintenance
- Reload data schedule
- Semantic Model Extensions



Sample Queries

Here's a few sample queries to help you get started with AI Concierge:

- As an administrator, you want to know about the capabilities of AI Concierge and how it can help.
  Example query: What are your capabilities or What can you do?
- As an administrator, you want to know when your daily refresh of data is completed, and how to ensure that you're notified about certain events (when it is completed, if it will be delayed on a particular day, and so on) .
  Example query: How can I improve my daily refresh completion time? or When will my data refresh end?
- If you want to know more about a feature, you don't have to look up product documentation anymore. Ask AI Concierge your question, and it looks up the answer for you - it even provides relevant documentation links, for additional reference.

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Example query: What is frequent data refresh, and how is it useful to me? or What is the use of the "Initial Extract Date" pipeline parameter ?

- You can also activate a new feature or functional area. AI Concierge shows you the required steps, and (with your consent) performs each step. It also navigates to each screen with you so that you can follow along at each step.
  Example query: Activate HCM Benefits Functional Area. Or My user would like to activate planned production analytics.

Tips for Optimal Usage of AI Concierge

Follow these tips for an optimal usage of AI Concierge:

- Be clear and specific, providing context as much as possible. For example, instead of asking “what are pipeline parameters, analytics currency and initial extract date,” you can split the question into multiple queries (1 question per query) such as "What are pipeline parameters? What's analytics currency?"
- Avoid multi-turn conversation by framing your needs in a single query. For example, instead of saying "I want to extend the warehouse," say "I want to extend Sales Order with email and address."
- Mention the keyword “information” when explicitly asking for information. For example, instead of saying “Which functional areas contain transactions related to general ledger,” say "I want information on which functional areas contain transactions related to general ledger."
- Avoid generic queries, informal talk, and casual conversation. AI Concierge is specifically designed for the data that's configured with Oracle Fusion Data Intelligence and can't answer generic queries or have a general conversation.
- In your Informational queries, define the format and structure you want to see. For example, explain how to activate a functional area, give 3 bullet points.

Extend Entities with DA Script

AI Concierge helps to easily and securely build error-free data extensions in DA scripts.

AI Concierge supports extensibility with EFF and KFF in DA scripts. When you want to extend the entities in Oracle Fusion Data Intelligence data model with Extended Flex Fields (EFF) and Key Flex Fields (KFF) from Oracle Fusion Cloud Applications, you don’t need to manually write data augmentation scripts and carefully map every flex field attribute. You just need to provide a plain-English request, and AI Concierge understands the entity and EFF or KFF to use. AI Concierge uses a guided, conversational flow to create production-ready DA script. The AI Concierge doesn’t just suggest what to configure; it generates, validates, and builds the DA scripts in the same conversation thread.

This capability of AI Concierge to implement technical tasks such as adding external attributes to an entity offers reduction in implementation effort along with these benefits:

- Eliminates the need for deep HRF syntax knowledge to extend common HCM entities.
- Built-in check for duplicates prevents configuration drift and rebuild errors.
- Conversational confirmations keep the administrator in control without requiring developer intervention.
- Conversational English explanations make scripts reviewable by project managers and auditors, not just technical staff.

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- All actions are within the secure Oracle Cloud Infrastructure environment. No data leaves Oracle Cloud.
- Reduces a time consuming scripting task to a less than five minutes of guided conversation.

DA Script Tutor

Use AI Concierge DA Script Tutor to get started with DA scripts.

If you ask AI Concierge “I want to learn how to use Data Augmentation Scripts”, AI Concierge teaches you how to enable the settings required to create DA scripts and helps you create a sample DA script.

Interactive guidance in AI Concierge helps you set up your initial DA script application by enabling the necessary features, creating a connection, creating the DA script, running a terminal command, and writing and building your first line of code.

DA Script Code Assistant

Use AI Concierge to fix issues in DA scripts when there is a build failure due to syntactic or semantic incorrectness. AI Concierge can quickly review multiple DA scripts.

When your DA scripts fail, you can ask AI Concierge to troubleshoot and provide solutions to fix the issues in the DA script. You can correct the errors in the DA script yourself or ask AI Concierge to resolve the issues.

AI Concierge can analyze the failed DA script, build logs, and provide the following:

- Root cause of failure
- Instructions to manually fix the error
- Option to automatically fix the error

You can analyze the suggested solution and apply or dismiss the suggested corrections.

When you request for automatic fix, AI Concierge updates the code in the IDE one file at a time by performing the following operations:

- ADD – Inserts a new line to the file
- MODIFY – Updates an existing line in the file
- DELETE – Removes an existing line from the file

Limitations:

- After making any file changes, you must rebuild to re-trigger analysis or auto-fix issues.
- Some projects might require multiple builds and fixes to fully resolve the issues.

AI Concierge for Semantic Model Extensions

On the Semantic Model Extensions page, you can preview the use of AI Concierge for Semantic Model Extensions.

Use natural language to request assistance for designing, validating, managing, troubleshooting, and publishing your semantic model customizations. AI Concierge combines product knowledge with awareness of your current environment to answer questions, perform supported operations, validate configurations, and recommend best practices.

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You can preview AI Concierge for Semantic Model Extensions to:

- **Learn about Semantic Model Extensions:**
  - Learn the concepts and receive step-by-step guidance for common tasks.
  - Receive information about available Oracle documentation that explains supported features, capabilities, and workflows.
- **Validate customizations:**
  - Validate customizations and resolve validation issues before publishing.
  - Start and monitor validation, display validation results, identify errors and warnings, explain their causes, and recommend corrective actions to help prepare your customizations for publication.
- **Review designs and apply best practices:**
  - Analyze your customizations and receive Oracle recommendations.
  - Evaluate design and performance considerations and identify potential risks, dependency issues, and configuration problems that could affect deployment or runtime performance.
- **Access semantic model information:**
  - Retrieve semantic model information to provide accurate, contextual guidance.
  - Display validation status, publication history, activity logs, dependency information, and other runtime details to help you make informed decisions.
- **Receive consistent assistance:**
  - Get clear, context-aware responses to your questions throughout the customization lifecycle.
  - Distinguish between informational messages, warnings, and errors, explain recommendations, and guide you through supported workflows from creation to publication and ongoing maintenance.

AI Concierge for Consumers

Non-admin users can access the AI Concierge Home page in full-page view for informational queries only.

AI Concierge is primarily used by administrators. Sometimes, non-admin might require instance related information such as configurations for pipeline or status of data refreshes. When a non-admin user submits any request that can be performed only by administrators, AI Concierge lists the required actions and directs the user to contact an administrator to complete the actions.

Consumers (non-admin users) log in with Oracle Fusion Data Intelligence Administration Console URL as Consumer and view AI Concierge in expanded or full screen mode.

The following example shows how AI Concierge responds to data refresh monitoring queries, including the last refresh time, next scheduled refresh, refresh status in progress, and details of the most recent completed refresh. Users can ask natural language questions to quickly access refresh schedules, progress updates, and the historical refresh metrics.

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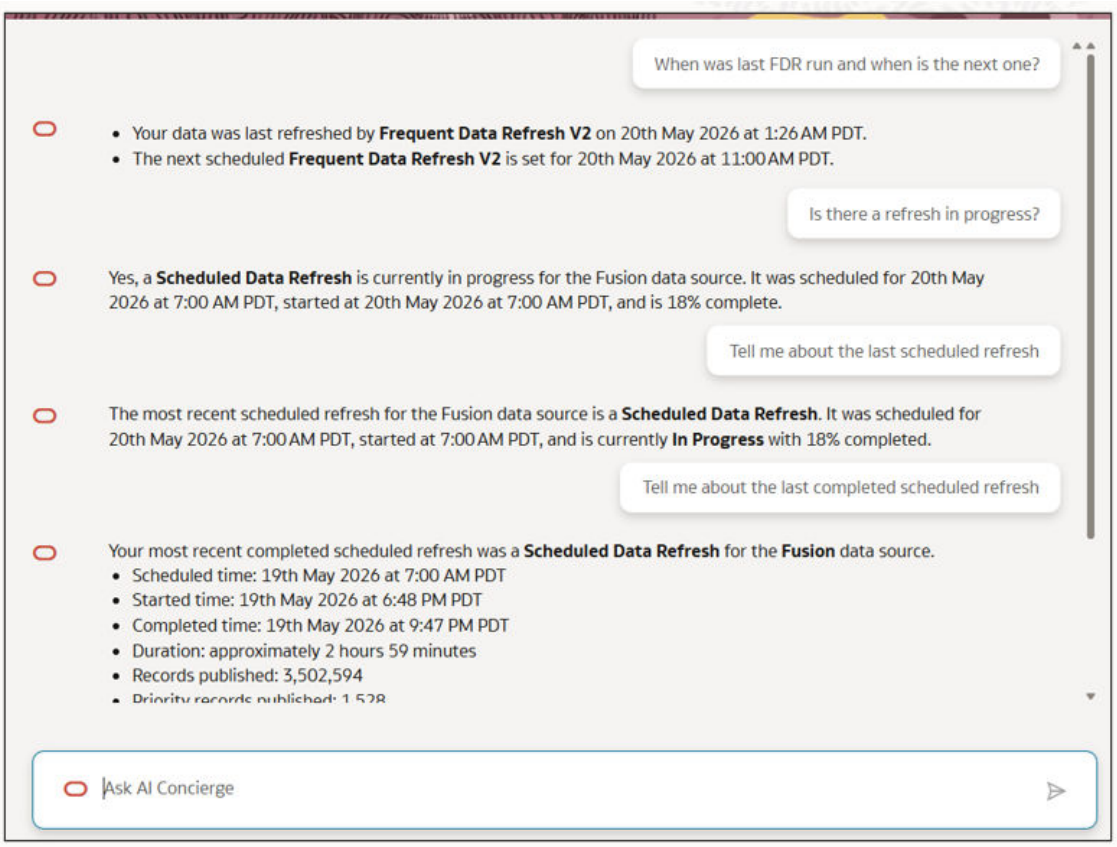

The following example shows how AI Concierge responds when the user requests an administrative action. AI Concierge displays the required setup steps but prevents the user from continuing because the action requires administrator privileges.

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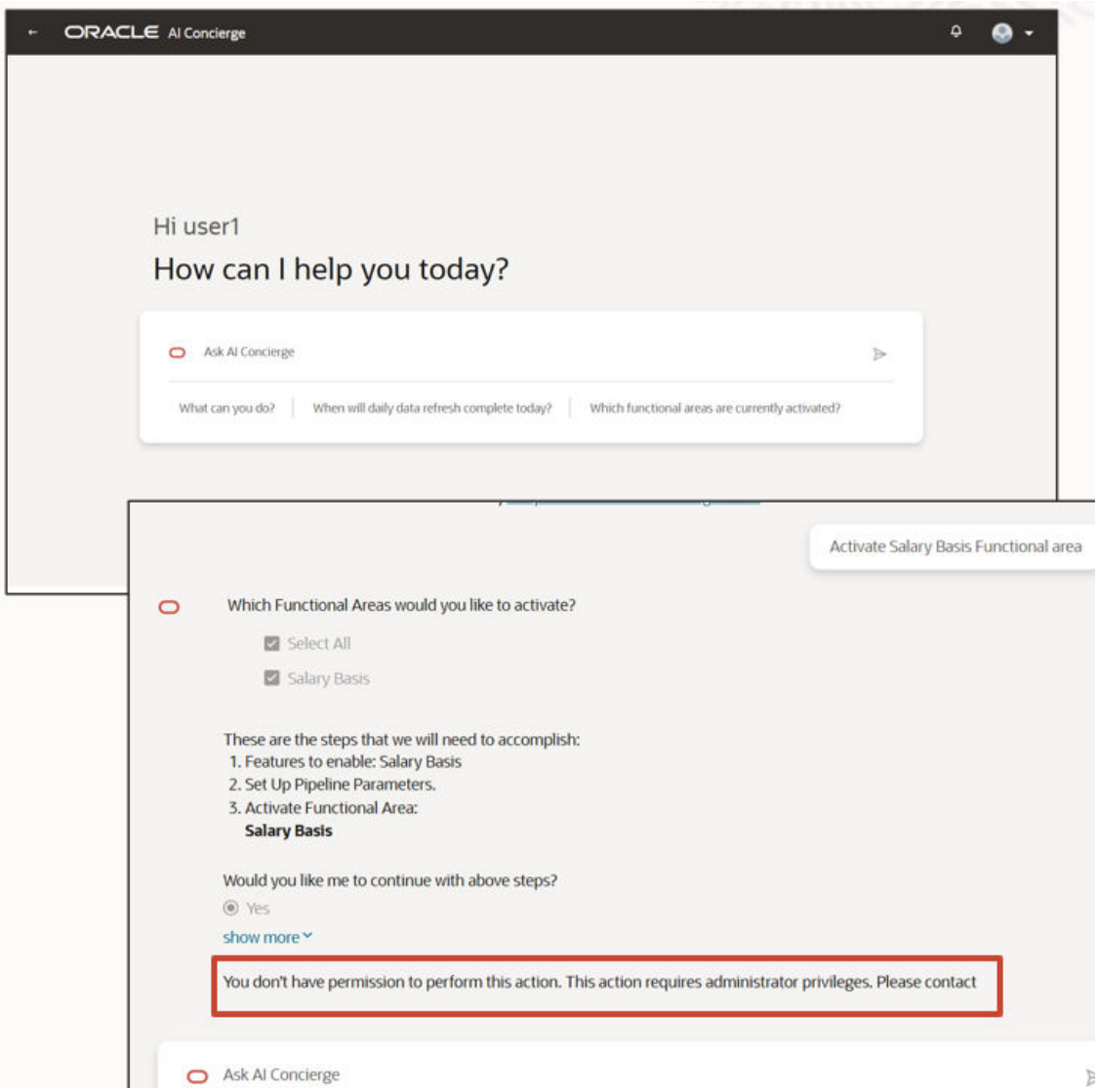

Access Oracle Fusion Data Intelligence MCP Server (Preview)

This topic describes the Model Context Protocol (MCP) server provided by Oracle Fusion Data Intelligence and how to register the server with an AI client to access your analytics data.

> **Note**
>
> Oracle Fusion Data Intelligence provides a Model Context Protocol (MCP) server that allows AI clients direct access and interaction with Oracle Analytics data and functionality. This introduces security risks since you might inadvertently expose unintended data. The Oracle Fusion Data Intelligence MCP tools are authenticated with an OAuth 2.0 access token and run with the same permissions as the user who obtains the access token. Ensure that any users who use the MCP server only have access to data that can be shared with LLMs.

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Topics:

- About Oracle Fusion Data Intelligence MCP Server
- Tools available with Fusion Data Intelligence MCP Server
- Connect to Claude Desktop
- Connect to Codex

About Oracle Fusion Data Intelligence MCP Server

Use the Model Context Protocol (MCP) server in Oracle Fusion Data Intelligence to connect with AI clients.

MCP is a standard way for AI models and applications to connect to external tools, data sources, and services. If LLM is the brain, an MCP server is an adapter that gives the brain access to outside capabilities.

While Oracle Fusion Data Intelligence endpoints are supported and available to use in your projects, since MCP is a new protocol and a dynamic area that is constantly improving, there might be some changes as and when Oracle improves this area. When using the MCP server in your agents and AI applications, Oracle recommends implementing evaluations and observability to ensure reliability.

The Oracle Fusion Data Intelligence MCP server lets users run and interact with built-in Fusion Data Intelligence tools directly from their connected LLM client, helping streamline workflows and expand automation capabilities across Fusion Data Intelligence.

Download the Fusion Data Intelligence MCP server and set up the connection with AI clients. You can leverage the AI client's capabilities to perform natural language generation and content summarization. For example, you can ask questions such as:

- Which supplier payments are overdue?
- Get me the workbooks for employee payroll.
- How many joined the company this month?
- Compare the sales in the last six months.

Oracle Analytics Cloud MCP Server is also available in the Oracle Analytics Cloud instance used by Fusion Data Intelligence.

Tools available with Fusion Data Intelligence MCP Server

The Fusion Data Intelligence MCP server provides you governed access to the Fusion Data Intelligence data.

You can get answers to questions related to your business by using a set of tools that allow you to explore data within your instance. For example, you can ask about payroll, salary, attrition, procurement spend, suppliers, AP aging, campaign ROI, forecasts, and workbooks. With these tools, you can discover which datasets or subject areas are available in Fusion Data Intelligence, describe them to the LLM or AI model, and allow the client to generate and run Logical SQL.

When you use these tools, your requests should include enough business context, such as metric, time period, subject area, supplier, ledger, calendar, or campaign scope. If the required details are missing, the assistant asks a short clarifying question before calling the tool.

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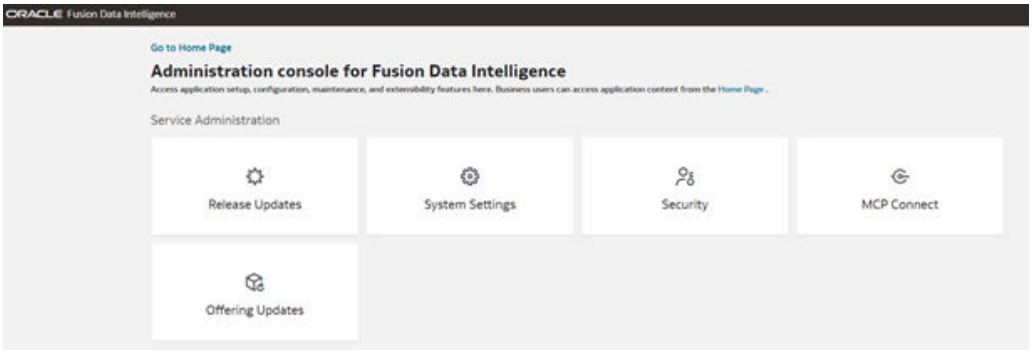
Business Area	Tools Available	Description
Common	Data discovery and governed analysis tools	Identifies the right governed business data, available metrics, and dimensions.
Common	Report and analytics content discovery tools	Finds existing dashboards, workbooks, and reports.
SCM	Procurement and supplier performance tools	Supports analysis of suppliers, their performance, reviews, sourcing decisions, purchasing compliance, delivery, receipts, agreements, and spend.
ERP	Payables and payment risk tools	Covers AP aging, payment patterns, overdue exposure, and payment risk to understand payable obligations, delays, and financial risk.
CX	Marketing and campaign effectiveness tools	Analyzes campaign progression, attribution, ROI, and performance to assess campaign outcomes, identify bottlenecks and recommend marketing investments.
HCM	Workforce insights and planning tools	Provides workforce, payroll, compensation, attrition, skills, and forecast analysis to understand trends, causes and assess talent risk.

Connect to Claude Desktop

Install Claude Desktop and connect to MCP tool.

Make sure you have installed Python 3.10 or later version.

1. Download Claude Desktop from the official Claude website and install it on your local machine.
2. Download the MCP Connect tool for Claude Desktop.
   a. Sign in to your service.
   b. In Oracle Fusion Data Intelligence Console, click **MCP Connect** under Service Administration.



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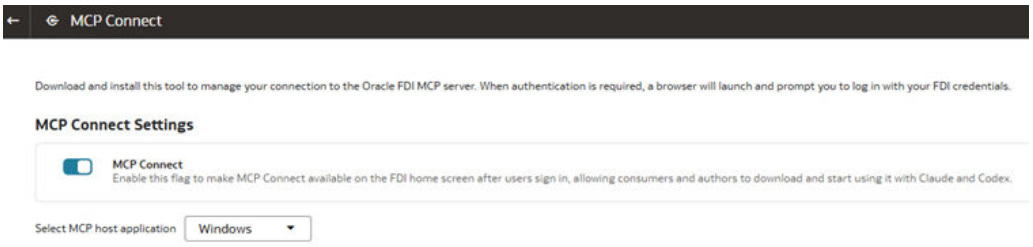
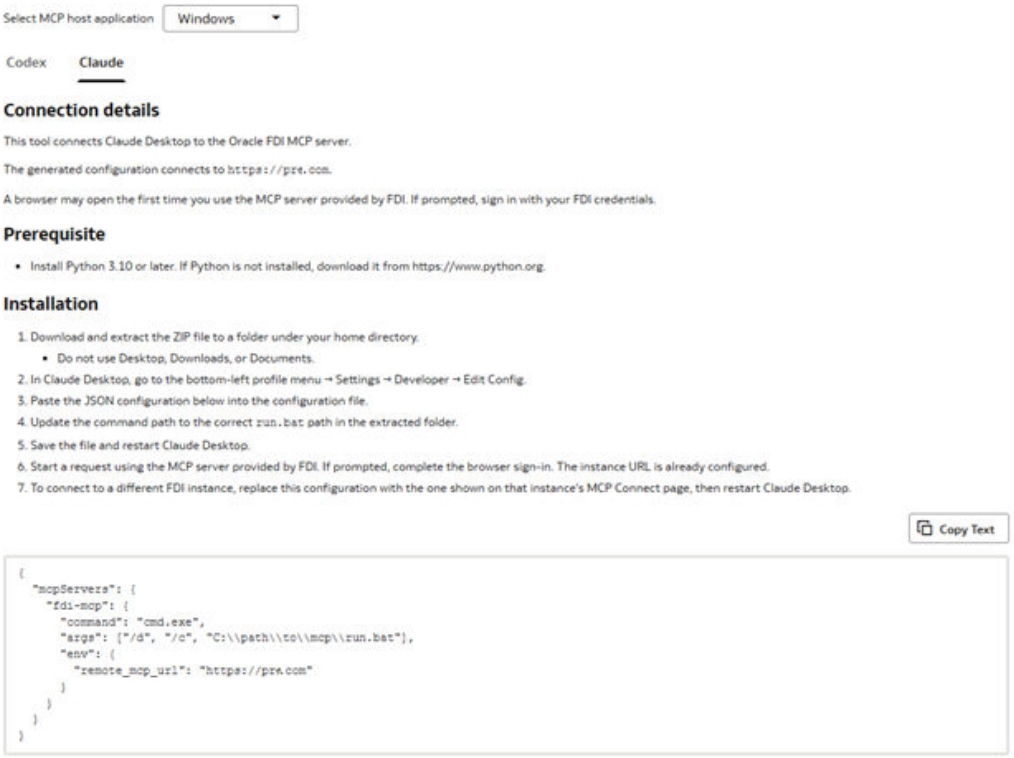
c. In the MCP Connect dialog, enable **MCP Connect** to make MCP Connect available to consumers and authors.



d. Select the MCP host application: **Mac** or **Windows**.

e. Click **Claude**.

The MCP Connect dialog lists the prerequisite and the installation instructions.



f. Click **Download** and download the zip file.

g. Extract the ZIP file to a folder under your home directory.

Don't use Desktop, Downloads, or Documents folder.

h. Copy the JSON configuration text provided in the MCP Connect dialog.

3. Open the Claude Desktop configuration file.

a. Launch Claude Desktop.

b. Go to **Profile** and navigate to Settings, then to Developer.

c. Click **Edit Config**.

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4. Update the Claude Desktop configuration file.
   a. Open the claude_desktop_config.json configuration file using any text editor such as VS Code, Notepad++, or Sublime.
   b. Add the JSON configuration text you copied from the MCP Connect dialog to the claude_desktop_config.json configuration file.
   c. Replace `/path/to/mcp/run.sh` with the actual path where you extracted the MCP Connect tool zip file.
   d. Save the configuration file.
5. Close and restart Claude Desktop to apply the changes.
6. Sign in to Fusion Data Intelligence.

   When Claude Desktop starts, it automatically opens a browser window for authentication.
   a. Log in using your Fusion Data Intelligence user ID and password.
   b. Keep the browser window open while the system completes the MCP authorization process.

      After the authorization completes, the browser window closes automatically.
7. Verify MCP tool access.
   a. In Claude Desktop, locate the + icon below the chat input box, and click **+ Connectors** .
   b. Confirm that Fusion Data Intelligence MCP is listed and enabled.
8. Start using Claude Desktop with MCP tool. If prompted, complete the browser sign-in.

   For example, you can ask the following question in Claude Desktop:

   ```
   Example prompt: What tools are provided by Fusion Data Intelligence?
   ```

   Claude will return the list of available tools and you can get guidance on how to use each one.

   > **Note**
   >
   > Claude Desktop displays a permission prompt requesting approval before running the tool. Choose the appropriate permission option.
9. To connect to a different Fusion Data Intelligence instance, replace the configuration with the configuration shown on that Fusion Data Intelligence instance's MCP Connect page, and then restart Claude Desktop.

Connect to Codex

Install Codex and connect to MCP tool.

Make sure you have installed Python 3.10 or later version.

1. Download Codex from the official Codex website and install it on your local machine.
2. Download the MCP Connect tool for Claude Desktop.
   a. Sign in to your service.
   b. In Oracle Fusion Data Intelligence Console, click **MCP Connect** under Service Administration.

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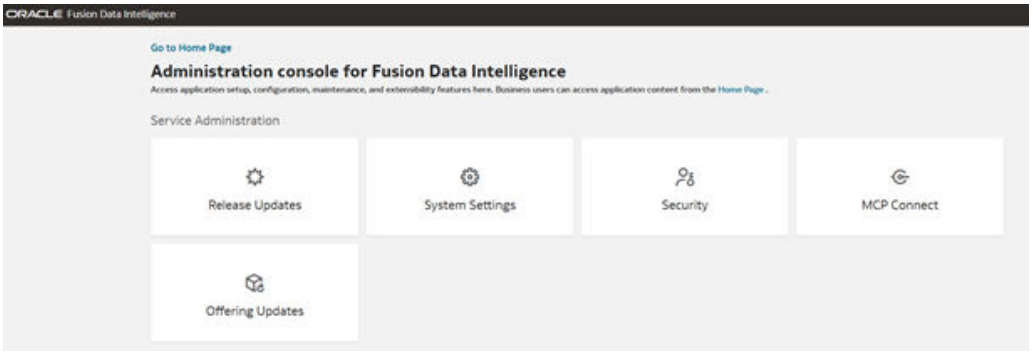
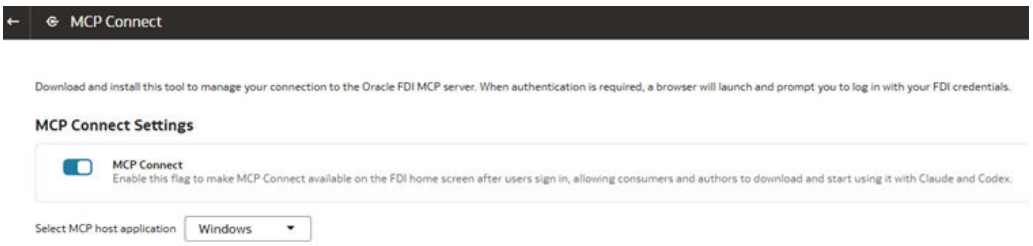


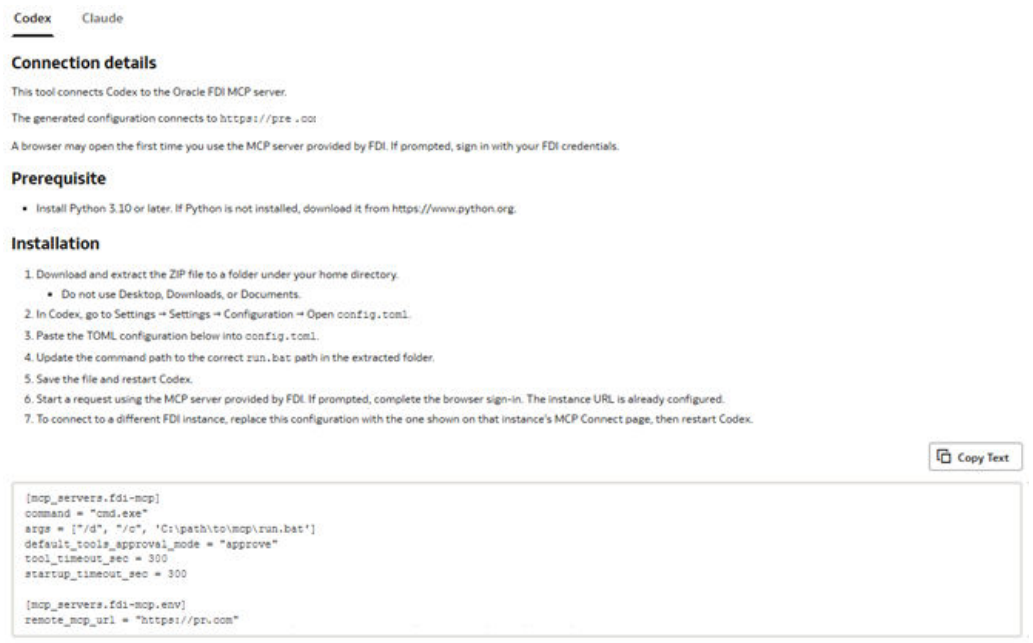
c. In the MCP Connect dialog, enable **MCP Connect** to make MCP Connect available to consumers and authors.



d. Select the MCP host application: **Mac** or **Windows**.

e. Click **Codex**.

The MCP Connect dialog lists the prerequisite and the installation instructions.



f. Click **Download** and download the zip file.

g. Extract the ZIP file to a folder under your home directory.

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Don't use Desktop, Downloads, or Documents folder.

h. Copy the TOML configuration text provided in the MCP Connect dialog.

3. If you had issues while configuring the MCP server using the Codex user interface, perform these steps to manually edit the configuration file:
   a. In Codex, click **Settings**, and then click **Configuration**.
   b. Click the **Open config.toml** link on the right.

      The configuration file opens for edit.
   c. At the end of the config.toml file, add the TOML configuration text you copied from the MCP Connect dialog.
   d. In the `args = ["/d", "/c", 'C:\path\to\mcp\run.bat']` line, replace `C:\path\to\mcp\run.bat` with the actual path where you extracted the MCP Connect tool zip file.
   e. Save the configuration file.
4. Close and restart Codex to apply the changes.
5. In Codex, click **Settings**, and then click **MCP Servers**.

   Make sure the Fusion Data Intelligence MCP server is enabled.
6. Open a new chat window.
7. Sign in to Fusion Data Intelligence.
   a. Log in using your Fusion Data Intelligence user ID and password.
   b. Keep the browser window open while the system completes the MCP authorization process.

      After the authorization completes, the browser window closes automatically.
8. Verify MCP tool access.
   a. In the Codex chat box, enter `/mcp`.
   b. Confirm that Fusion Data Intelligence MCP is listed and enabled.
9. Start using Codex with MCP tool. If prompted, complete the browser sign-in.

   For example, you can ask the following question in Codex:

   ```
   What tools are provided by Fusion Data Intelligence?
   ```

   Codex will return the list of available tools and you can get guidance on how to use each one.

   > **Note**
   >
   > Codex displays a permission prompt requesting approval before running the tool. Choose the appropriate permission option.
10. To connect to a different Fusion Data Intelligence instance, replace the configuration with the configuration shown on that Fusion Data Intelligence instance's MCP Connect page, and then restart Codex.

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10

Frequently Asked Questions

Here are answers to common questions asked by administrators of Oracle Fusion Data Intelligence.

Topics:

- Top FAQs for Activation
- Top FAQs for Instance Creation
- Top FAQs for Data Configuration
- Top FAQs for Security Setup
- Top FAQs for Customization and Data Augmentation
- Top FAQs for Managing Oracle Fusion Data Intelligence

Top FAQs for Activation

The top FAQs for Oracle Fusion Data Intelligence activation are identified in this topic.

Do I need to activate my UCC subscription before activating Oracle Fusion Data Intelligence?

No, UCC activation isn't a prerequisite for Oracle Fusion Data Intelligence. However, for specific scenarios, you may require universal credits. See Important – Read Before Activating.

My UCC order has expired. What should I do?

Contact your Oracle Sales representative for assistance with UCC.

Do I need to activate my Oracle Fusion Data Intelligence subscription for production and non-production environments separately?

No, your Oracle Fusion Data Intelligence subscription activation is applicable to all currently subscribed environments.

Can I request an additional Oracle Fusion Data Intelligence test environment?

Yes, you can request an additional test environment (ATE), which must be contracted for a minimum of 12 months.

Can I activate Oracle Fusion Data Intelligence into a cloud account different from the one used by Oracle Fusion Cloud Applications?

The recommended guideline is to activate Oracle Fusion Data Intelligence into the same cloud account as Oracle Fusion Cloud Applications.

Can I activate an Oracle Fusion Data Intelligence subscription in a region of my choice?

Your subscriptions are linked and activated into the home region of your tenancy. After activating a subscription, you can create the Oracle Fusion Data Intelligence instance in the regions where Oracle Fusion Data Intelligence is available and you have subscribed for such

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regions. Use the Manage Regions option in the Oracle Cloud Infrastructure Console to subscribe for a region. See Region Availability and Managing Regions.

For example, if you have a tenancy with Frankfurt as the home region, you can activate the Oracle Fusion Data Intelligence subscription in that home region only. After successful activation of the subscription in your home region, you can select a region to which you have subscribed such as Jeddah and create the instance in the specific region.

Top FAQs for Instance Creation

The top FAQs for Oracle Fusion Data Intelligence instance creation are identified in this topic.

Are there any prerequisites to create the integrated Oracle Fusion Data Intelligence instance?

Yes, refer to Create an Integrated Oracle Fusion Data Intelligence Instance .

Can I sign in to the Default domain to create the integrated Oracle Fusion Data Intelligence instance?

You can sign in to the Default domain to create the integrated Oracle Fusion Data Intelligence instance. You must ensure that the user ID in the Default domain is same as the user in Oracle Fusion Cloud Applications domain.

Do I need to create a compartment before creating the integrated Oracle Fusion Data Intelligence instance?

You don't have to create a compartment before creating the integrated Oracle Fusion Data Intelligence instance.

Would the integrated Oracle Fusion Data Intelligence instance have the same domain as Oracle Fusion Cloud Applications?

Yes, the integrated Oracle Fusion Data Intelligence instance inherits the domain of the Oracle Fusion Cloud Applications instance that its attached to.

Do I need to create the JWT tokens prior to attaching the instance?

The integrated Oracle Fusion Data Intelligence instance uses OAuth and doesn’t require the JWT token.

Can I move the integrated Oracle Fusion Data Intelligence instance to another compartment?

No, you can't move an integrated Oracle Fusion Data Intelligence instance to another compartment. The Oracle Fusion Cloud Applications and the integrated Oracle Fusion Data Intelligence instances are in the same compartment.

Do the standalone and integrated Oracle Fusion Data Intelligence instances support private network access?

Yes. See Create an Oracle Fusion Data Intelligence Standalone Instance and Create an Integrated Oracle Fusion Data Intelligence Instance .

Can I secure the Autonomous AI Lakehouse associated with the integrated Oracle Fusion Data Intelligence instance using the access control list?

Yes, you can secure the Autonomous AI Lakehouse associated with the integrated Oracle Fusion Data Intelligence instance using the access control list.

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How many integrated Oracle Fusion Data Intelligence instances can I create against one Oracle Fusion Cloud Applications instance?

Only one integrated Oracle Fusion Data Intelligence instance is possible against one Oracle Fusion Cloud Applications instance.

Can I change the Oracle Fusion Cloud Applications URL for the integrated Oracle Fusion Data Intelligence instance?

You can't change the Oracle Fusion Cloud Applications URL for the integrated Oracle Fusion Data Intelligence instance. When you detach the integrated instance, the system does this:

- Removes the Oracle Fusion Cloud Applications URL and converts it into an instance without the Oracle Fusion Cloud Applications source information.
- Stops the pipelines.

To point to an Oracle Fusion Cloud Applications URL of your choice and provide the authentication details, navigate to the Oracle Fusion Data Intelligence instance details page and click **Update fusion connection**. See Update the Data Source Connection Details. Ensure to enable the **Data Pipeline Status** toggle on the Pipeline Settings page from the Data Configuration tile on the Oracle Fusion Data Intelligence Console.

How do I detach the Oracle Fusion Data Intelligence instance from Oracle Fusion Cloud Applications?

In Environments page of the Oracle Fusion Cloud Applications integrated with the Oracle Fusion Data Intelligence instance, specify the Oracle Fusion Data Intelligence instance you want to detach. See Detaching an Integration.

After you detach an integrated Oracle Fusion Data Intelligence instance from an Oracle Fusion Cloud Applications environment, the Oracle Fusion Data Intelligence service is no longer available to the Oracle Fusion Cloud Applications.

Can I terminate the existing integrated Oracle Fusion Data Intelligence instance and will it impact the Oracle Fusion Cloud Applications instance in any way?

Yes, you can terminate the integrated Oracle Fusion Data Intelligence instance after detaching it and there won't be any impact on the Oracle Fusion Cloud Applications instance.

After you detach the integrated Oracle Fusion Data Intelligence instance, is the authentication type still OAuth?

When you detach the integrated instance, the system removes the Oracle Fusion Cloud Applications URL, removes the authentication details, and converts it into an instance without the Oracle Fusion Cloud Applications source information.

Can I reattach the detached integrated Oracle Fusion Data Intelligence instance?

You can't reattach a detached integrated Oracle Fusion Data Intelligence instance.

Can I create an integrated Oracle Fusion Data Intelligence instance in the UK Government regions?

Yes, you can create an integrated Oracle Fusion Data Intelligence instance in the UK Government regions.

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Oracle Fusion Data Intelligence instance creation has failed. What should I do?

Contact Oracle Support by creating a service request against Oracle Fusion Data Intelligence in My Oracle Support.

Do I need to create a compartment before creating a standalone Oracle Fusion Data Intelligence instance?

Compartments provide logical separation of instances. The best practice is to create a compartment and then create the standalone Oracle Fusion Data Intelligence instance in the said compartment.

After creating the Oracle Fusion Data Intelligence instance, why can't I sign into the instance?

You created the Oracle Fusion Data Intelligence instance as an administrator but to sign into the instance, you must have any of the groups mentioned in System Groups assigned to you. See About Creating an Instance.

Why does an instance get deleted soon after being created successfully?

Security zones set at the compartment level cause an instance to be deleted soon after being created successfully. Modify the security zone restrictions at the compartment level to avoid this scenario.

Why am I seeing database creation failure errors when creating a Oracle Fusion Data Intelligence instance?

If you're using a security zone for your Oracle Fusion Data Intelligence instance compartment, you encounter security zone violation errors that prevent you from creating the instance during the Create Autonomous Database service operation for your instance.

Context	Error Message	Resolution
Autonomous database creation failure for private instances.	`Security Zone Violation: You can't configure a Autonomous Database in a security zone to use a subnet that isn't in the same security zone.`	Provide a VCN and subnet from the same compartment as your Oracle Fusion Data Intelligence service. The Oracle Fusion Data Intelligence instance and its associated resource Oracle Autonomous AI Lakehouse, with a private endpoint, are created using that same subnet. You can also update the recipe and policy for your security zone. See Create a Security Zone for Your Instance Compartment. Clone the existing recipe to create a recipe. Update the policy for the new recipe and clear the option: `deny db_instance_subnet_not_in_security_zone`

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Context	Error Message	Resolution
Autonomous database creation failure for public instances.	`Security Zone Violation: A public IP cannot be assigned to Autonomous Database located in a security zone. Choose a private subnet to create the Autonomous Database.`	With Oracle-managed policies, you aren't allowed to create security zones for public Autonomous Database Warehouses. For your Security Zone configuration, select a Customer-managed recipe instead of the Oracle-managed recipe. Clone the existing recipe to create a recipe. Update the policy for the new recipe and clear the option: `deny db_instance_public_access` See Create a Security Zone for Your Instance Compartment.

Why am I unable to create an instance using the US Midwest (Chicago) Oracle Identity Cloud Service domain?

The Oracle Identity Cloud Service domain in US Midwest (Chicago) isn't supported. Use the Oracle Identity Cloud Service domain in one of these regions:

- ca-montreal-idcs-1
- ca-toronto-idcs-1
- us-ashburn-idcs-1
- us-ashburn-idcs-2
- us-phoenix-idcs-1
- us-phoenix-idcs-2
- us-phoenix-idcs-3
- uscom-central-idcs-1

How do I receive administrator emails?

To receive administrator emails, ensure to enter your email ID in **Notification Email** while creating the instance. See Create an Oracle Fusion Data Intelligence Instance. You can update the notification email address anytime based on your business requirement. See Update the Notification Email. You can also add an email list if multiple users need to receive the administrator emails.

Top FAQs for Data Configuration

The top FAQs for Oracle Fusion Data Intelligence data configuration are identified in this topic.

What should I specify as the initial extract date in the pipeline parameters?

The initial extract date determines how far back the data is loaded into the autonomous data warehouse as part of the initial load or after a warehouse reset is performed. This is specific to your business and reporting needs and data retention policies.

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I activated a functional area. Where can I check the status?

Navigate to the **Console**, click **Data Configuration**, and then click **Request History**.

What's the difference between refresh and reset?

Refresh loads incremental data only, whereas reset reloads all data as of the initial extract date.

Can I reset and refresh the data warehouse?

Yes, you can reset and refresh the data warehouse. See Reset the Data Warehouse.

Can I reset and refresh a data pipeline for a functional area?

Yes, you can reset and refresh a data pipeline for a functional area. See Reload Data for a Data Pipeline and Refresh a Data Pipeline for a Functional Area.

Where do I check the data load status?

Navigate to the **Console**, click **Data Configuration**, then click **Pipeline Settings**, and view **Last Refresh Date**.

How do I increase the frequency of data refresh?

See Configure Frequent Data Refresh with Original Refresh Mechanism.

Can I load external data into the autonomous data warehouse?

Yes, you can load external data into the autonomous data warehouse from external sources and build your own augmentations using connectors. See Manage Data Connections.

Is there a limitation on external data volume that's extracted into the Autonomous AI Lakehouse?

By default, custom data is limited to 50GB in the autonomous data warehouse associated with Oracle Fusion Data Intelligence. For any storage of custom data beyond 50GB, you must scale up through the Oracle Cloud Infrastructure Console. This is charged to your cloud account accordingly. See Scale Up Oracle Autonomous AI Lakehouse.

Which data sources are included in my subscription and not subject to the 50GB limit?

Currently when you load data from "external" sources into Oracle Fusion Data Intelligence, there is a limit of 50GB for such data. Additional data beyond this limit is chargeable.

The data brought into Oracle Fusion Data Intelligence using the ready-to-use pipelines, data augmentations, data augmentation scripts, and data applications from the following sources is included in the subscription and isn't subject to the 50GB limit:

- Oracle Fusion Cloud Applications, including ERP, Fusion Accounting Hub, HCM, SCM, CX, Oracle Transport Management, Oracle Warehouse Management System, Oracle Eloqua, Taleo, Oracle JD Edwards, Oracle PeopleSoft, Oracle Enterprise Performance Management, SCP, Oracle E-Business Suite, Oracle Configure, Price, Quote, and Oracle Enterprise Data Management Cloud Service.
- Oracle Fusion Cloud Applications data using the Oracle Analytics Publisher connector.
- Salesforce data when purchased with the Oracle Fusion CX Analytics subscription.

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The following aren't included in the subscription and are subject to the 50GB limit:

- Any sources not listed as included within the 50GB storage limit.
- Completely custom ETL, where you manage the entire pipeline (using any ETL tool such as Data Transforms, Oracle Data Integrator, and Oracle Cloud Infrastructure Data Integration), that loads data into a custom schema (including OAX_USER) in Oracle Autonomous AI Lakehouse.

Can I extract Oracle Fusion Data Intelligence data and export it to external storage systems?

Yes, you can extract Oracle Fusion Data Intelligence data to export into an external storage system. However, take care to ensure that an adequate number of user licenses are available to access Oracle Fusion Data Intelligence data through the external system.

Can I filter the records with Status on the Request History page?

No, you must select both **Status** and **Submitted by** to get the applicable records.

Does daylight savings impact the data refresh process?

Yes, the incremental refreshes that are scheduled during the start and end of daylight saving times may not happen.

Can I clear the cache after the data pipeline is run?

The system clears the cache in the back-end after every data pipeline load as a standard step. You don't have to take any action.

Why are some entries missing for the frequent data refresh scheduled runs in the Warehouse Refresh Statistics report?

If no new records are present at source to get extracted and published to the warehouse during the scheduled frequent data refresh runs, then the Warehouse Refresh Statistics report skips those entries.

Why does the frequent data refresh schedule for a functional area such as General Ledger get skipped sometimes after performing a reset of multiple functional areas?

This is an expected behavior. The incremental refresh after performing multiple soft reset of functional areas take more time than usual due to the high volume of records being processed. Due to this the scheduled frequent General Ledger refresh jobs get skipped. The scheduled frequent General Ledger jobs start as soon as the incremental refresh is completed.

Even though I’ve enabled frequent data refresh for General Ledger, why is data on DW_GL_BALANCE_CA refreshing once a day with daily pipeline refresh schedule?

Currently, the Frequent Data Refresh process doesn’t support aggregate tables such as DW_GL_BALANCE_CA.

Is the Oracle managed Salesforce pipeline available prebuilt with Fusion CX Analytics?

Yes, it's available prebuilt with Fusion CX Analytics

What's available with the Oracle managed Salesforce pipeline?

Refer to Reference for Fusion CX Analytics.

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I am a Fusion ERP Analytics customer, how do I enable the Oracle managed Salesforce pipeline?

The Oracle managed Salesforce pipeline requires the Fusion CX Analytics SKU. Contact your sales team.

How do I import a self-signed certificate into the host VM Java truststore?

The certificate's Common Name (CN) is *.oraclevcn.com. Ensure that the host's DNS resolution returns <shorthostname>.oraclevcn.com. For example: ext40.oraclevcn.com.

1. Export the self sign certificate by running the following command to extract the certificate:

   ```
   echo | openssl s_client -connect <host_name>.oraclevcn.com:9091 -
   servername <host_name>.oraclevcn.com | openssl x509 > certificate.crt
   ```

   Example:

   ```
   echo | openssl s_client -connect ext40mt.oraclevcn.com:9091 -servername
   ext40mt.oraclevcn.com | openssl x509 > certificate.crt
   ```

2. Import the exported certificate to the Java truststore by running this command:

   ```
   keytool -importcert -trustcacerts -file certificate.crt -alias oraclevcn-
   cert -keystore <path_to_truststore> -storepass <truststore_password>
   ```

   Replace <path_to_truststore> and <truststore_password> with appropriate values for your environment.

3. After successfully importing the certificate, run the plugin script.

How do I add the Rest Connector Source certificate to the Remote Agent Docker?

Follow these instructions:

1. Open Google Chrome, go to the site, and click the icon to the left of the URL in the address bar. Click the **Certificate** option. Click **Export**, select the location, and save the .pem file.
2. Import the exported certificate to the Remote Agent Docker Java keystore as follows:
   a. Log into the docker with root permission using this command: `sudo docker exec -it -u root remoteagent /bin/bash`
   b. Import certificate using this command: `keytool -importcert -file /tmp/_.wms.ocs.oraclecloud.com.pem -keystore /usr/lib64/graalvm/graalvm21-ee-java17/lib/security/cacerts -alias 'wmscert'`
3. Restart the Remote Agent docker.

Top FAQs for Security Setup

The top FAQs for Oracle Fusion Data Intelligence security setup are identified in this topic.

I can't sign in to Oracle Fusion Data Intelligence; what am I missing?

Ensure that the Oracle Fusion Data Intelligence licensed groups are assigned to your user account.

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As a user with Modeler Administrator, Modeler, Author, and Consumer roles, after accessing the Console, why am I unable to perform tasks using each of the tiles?

Each tile on the Console requires certain permissions. For example, to perform tasks using the Data Configuration tile, you must have the "FAW Functional Administrator" group assigned to you. See Licensed Roles.

Do I need duty or data roles?

Data and duty roles serve different purposes. You need duty roles to access objects such as key metrics, dashboards, and subject areas whereas data roles are required to view the data.

Should I assign groups or application roles to users?

Assign the application roles (duty and data) to groups and groups to users.

Can I apply data filters to users based on their security assignments?

Yes, you can apply data filters to users' security assignments. See About Data Access Through Security Assignments.

Can I configure custom data security?

Yes, you can configure custom data security. See Custom Data Security for additional details.

Can I configure custom duty roles?

Yes, you can configure custom duty roles. See Custom Duty Role Use Case for additional details.

Why are some Oracle Fusion Cloud Applications job roles (groups in Oracle Fusion Data Intelligence) missing under the Groups tab on the Security page while most of them exist?

If there is any group that provides higher level administrator privileges, then Oracle Fusion Data Intelligence filters out such groups. This is to guard against someone changing security at the identity provider level or elevating their privilege from the Oracle Fusion Data Intelligence console. You may want to create a custom group and associate it with the applicable application role to meet your business requirements in this situation.

Can I implement security on specific logical objects in few subject areas?

No. When you apply object security on logical objects, the system applies applicable object security in all subject areas. You can implement security on certain presentation objects in selected subject areas.

Top FAQs for Customization and Data Augmentation

The top FAQs for Oracle Fusion Data Intelligence customization and data augmentation are identified in this topic.

Can I customize the prebuilt Oracle content?

Yes, you can customize the prebuilt Oracle content through semantic model customization.

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Does Oracle Fusion Data Intelligence extract all data from Oracle Fusion Cloud Applications?

Oracle Fusion Data Intelligence comes with a base semantic model with prebuilt metadata. Data pipelines extract data and load the prebuilt tables for all the activated functional areas. Data augmentation enables you to bring any custom data into Oracle Fusion Data Intelligence.

Why are some of my data augmentations, data applications, and functional areas rejected?

When incremental job runs, the system extracts data for all the modules (data augmentations, data applications, and functional areas) that are activated. If you've activated any data augmentation before the next incremental run or marked with Reset Data, then the system fetches the data for these modules in full. It's possible to not get data for some of the data augmentations either because of new columns added or some issue with extraction. In that case, the system rejects those data augmentations, data applications, and functional areas.

Where can I find the semantic model customization best practices?

See Recommendations and Tips to Extend the Semantic Model.

Can I extend Oracle Fusion Data Intelligence with custom public view objects (PVOs)?

Yes, you can extend Oracle Fusion Data Intelligence with custom PVOs. Refer to Fusion Data Intelligence Extension with Custom PVOs for additional details.

Can I create custom data models with the semantic model framework?

Yes, you can create custom data models using the semantic model framework.

Does Oracle Fusion Data Intelligence provide all descriptive flex fields (DFFs)?

Oracle Fusion Data Intelligence data pipelines don't bring in all DFFs for performance reasons. Ensure that you configure the DFF mapper that provides the ability to select only the DFFs and attributes that are required for reporting purposes. See Extend Data with the Descriptive Flex Fields Attribute Mapper for more information on configuring the DFF mapper.

When I use the DFF mapper, do I get custom DFFs too?

Yes, you get custom DFFs as long as they are BI Enabled. See Extend Data with the Descriptive Flex Fields Attribute Mapper.

Do I get access to the repository file?

The semantic model in Oracle Fusion Data Intelligence doesn’t expose the repository file. However, you can use the Oracle Fusion Data Intelligence Console to define the external connections to the repository file.

Why are the column changes not reflected immediately after updating an existing augmentation?

Changes are visible after the next incremental run.

Why am I seeing the message “There Are Pending System Requests" while publishing a model after activating all the modules successfully?

You're seeing this message because after every module activation, the customization steps are reapplied. Because the last module activation completed recently, the publishing request is in queue. Oracle Fusion Data Intelligence processes the pending requests shortly.

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Why does it take a long time sometimes to modify the subject area step while extending the semantic model?

The replicated subject area normally inherits everything from the parent subject area such as permissions and roles. Hence, depending on the size of the subject area, it takes a while to complete.

Can external application and augmentation co-exist if you've augmentation on the same object that's part of the skeleton semantic model used for the external application?

External application and augmentation can't co exist. If you've augmentation on the same object that is part of the skeleton semantic model used for the external application, then you must move those augmentations to the external semantic model.

Why do I see my data augmentations with no data in the public view object (PVO) in “Rejected” status?

The system automatically rejects data augmentations with zero records. You must ensure that the underlying PVO contains data before creating data augmentation and semantic model extensions on top of it.

Is CLOB datatype supported in data augmentation?

No, it isn’t supported currently.

Can I change a data augmentation after including it in the frequent data refresh schedule?

If you change a data augmentation after including it in the frequent data refresh schedule, then you must remove that data augmentation and let the next incremental refresh finish. Otherwise, the frequent data refresh might fail. After the incremental refresh is complete, you can add the updated data augmentation back to the frequent data refresh schedule.

How do I resolve inconsistent activated modules between the environment and the semantic model template?

The external application merge and semantic model bundle import preforms a validation between the external application semantic model and the list of functional areas enabled on the environment. If you get the following error, complete the suggested steps:

- The activated modules in the environment are inconsistent with the template used to build the external application semantic model. This causes downstream issues. Please download the template again and rebuild your external application semantic model.

If the validation fails in the development or test instance:

1. Identify the inconsistencies:
    a. Download the imported semantic model. See Download the Imported Semantic Model.
    b. Export the semantic model template. See Export the Semantic Model Template.
    c. Open each semantic model in Oracle Analytics Client Tools by going to **Manage** from the menu, then selecting **Projects**, and compare the list of defined projects and objects.
2. Regenerate a consistent semantic model template:
    a. Delete the inconsistent Oracle Fusion Data Intelligence functional area using the Data Configuration tile on the Console.
    b. Wait for the pipeline to complete.

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c. From Semantic Model Extensions, Activity tab, confirm that Apply System Steps and Semantic Model Template Generation ran.

d. Export the semantic model template that is now consistent. See Export the Semantic Model Template.

3. Create consistent external application:

- Option 1: Reimport the custom objects into a consistent semantic model template. See Model the Custom Semantic Model Objects.
- Option 2: Manually remove non-consistent projects and objects from the imported semantic model.

Should the validation fail in the production instance:

1. Identify the inconsistencies by comparing the activated Oracle Fusion Data Intelligence functional areas in the instance where the bundle is being imported with the list of projects in the external application semantic model included in the bundle.
2. Create a consistent external application:

a. Import and merge a consistent external application in the development or test instance. See Merge External Applications.

b. Export the consistent semantic model bundle in the development or test instance. See Export a Bundle.

c. Import and deploy the consistent semantic model bundle into the production instance. See Import a Bundle and Deploy a Bundle.

Why aren't custom segments showing in my translated language?

Translated custom segments aren't supported in Oracle Fusion Data Intelligence, so custom segments show in English only.

After migrating to the Sandbox framework, why is it taking a longer time to merge my external application?

Merging an external application semantic model with the Sandbox framework is a multi-step process. In the sandbox framework, developers can customize and extend external application objects. Therefore, when you merge the external application, all the system extensions, sandbox customization user extensions, and the external application are reapplied and therefore increases the duration to merge. This full recompilation ensures that the semantic model is consistent and error free.

After migrating to the Sandbox framework, why does it take a long time to apply changes and merge to the main Sandbox?

Regardless of how small the modifications are, applying changes and merging operation always recompiles the full semantic model. The size of your semantic model and the number of customizations to be applied determines the duration for merge.

You can select **Manual Execution of Apply System Extensions** to run the system steps manually instead of running automatically and reduce the Sandbox Apply time. See Set Up the Global Report Parameters.

What triggers the system steps to run?

The following triggers system steps to run:

- Changes made to components, such as data augmentations (create dimension, create fact, entity extension), applications, or data applications (such as Descriptive Flex Fields,

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Configurable Account Analysis, Fusion Accounting Hub, and Supply Chain Planning Application).
This includes:

  - Creating, deleting, enabling, disabling these components.
  - Making structural changes such as adding or removing attributes.
  - Running full reloads. See Schedule Reload of Data.

- Scheduling a new frequent data refresh. See Schedule Frequent Refreshes of Data with Redesigned Refresh Mechanism (Preview).
- The semantic model errors and requires a system rollback. For example, if your semantic model has errors that block a release update, the system might perform a mandatory rollback to process the necessary release patch.
- Warehouse and data source resets and reloads:
  - Resetting the data warehouse. See Reset the Data Warehouse.
  - Resetting and reloading the data source. See Reset and Reload the Data Source.
- Manually applying system extensions. See Apply System Extensions.
- Re-applying the system extensions on your external application. See Import Semantic Model.
- Exposing the custom columns in the out-of-the-box subject areas in your external application.

If you want to reduce the Sandbox apply time and you prefer to run the system steps manually, you can enable **Manual Execution of Apply System Extensions**. See Set Up the Global Report Parameters.

How do I manage snapshots in Oracle Fusion Data Intelligence?

To create and restore snapshots, use bundles. See Bundle Your Application Artifacts in Oracle Fusion Data Intelligence.

Can I manage the Oracle Analytics Cloud system settings in Oracle Fusion Data Intelligence?

Use the service instance console to set advanced options for Oracle Fusion Data Intelligence. See Set Advanced Options.

In Oracle Fusion Data Intelligence, can I manage the Oracle Analytics Cloud database connections used for semantic model configuration?

No, you can’t manage the Oracle Analytics Cloud database connections in Oracle Fusion Data Intelligence. The Oracle Fusion Data Intelligence semantic model extensions connects only to the single provisioned Oracle Autonomous AI Lakehouse.

How to modify the Oracle Analytics Cloud prebuilt objects in Oracle Fusion Data Intelligence semantic model?

Copy the prebuilt objects in Oracle Analytics Cloud and customize the prebuilt objects in semantic models in Oracle Fusion Data Intelligence.

How can I assign a custom attribute to an alternative folder within a prebuilt subject area?

When creating a custom fact or custom dimension, you can specify the folder in which the custom columns will be displayed. However, when creating a custom attribute through an

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extension of an existing object, the new columns are automatically assigned to the predefined folder structure of the subject area and can't be moved to a different folder. If you need to place the custom attribute in an alternative folder, you must create a custom subject area, where you can define and manage the folder structure according to your requirements.

How to manage the server cache (obis)?

By default, all prebuilt tables in the semantic model have unlimited caching duration. If you have an external application, you can configure your own server cache management strategy. Server cache (obis) is globally cleared after every data pipeline run.

Why do I receive the "Failed to retrieve schemas" error when creating a dataset from a prebuilt local subject area?

One possible cause is that the Oracle Analytics Cloud – Open Classic SOAP privilege has been denied. To verify this, navigate to Oracle Analytics Cloud, select **Open Classic**, click **Administration**, and then select **Manage Privileges**. Ensure that the required SOAP-related privileges are granted appropriately. If these privileges are disabled, operations that depend on SOAP services, such as schema retrieval, might fail.

Why does the Apply System process fail after deactivating functional areas?

The Apply System process may fail if the deactivated functional areas are still referenced in the Configurable Account Analysis (CAA) configurations or the external semantic model's metadata. Re-enable the functional areas or remove the dependencies before running the Apply System process.

Top FAQs for Managing Oracle Fusion Data Intelligence

The top FAQs for managing Oracle Fusion Data Intelligence are identified in this topic.

Where can I find release updates?

Navigate to the **Console**, and click **Release Updates** under **Service Administration**.

Why is the application release update process stuck with “Update is in progress” status?

Verify that your semantic model extensions aren’t using augmentation tables or columns that are no longer available in the data warehouse associated with the Oracle Fusion Data Intelligence instance. If any of the semantic model extensions are using such tables or columns, then you must delete such extensions and rerun the application release update. If there is an invalid self join defined in an augmentation, then you must delete the join and rerun the application release update.

Can I take snapshots of application artifacts such as configurations and customizations?

Yes, you can take snapshots of application artifacts using bundles. See Bundle Your Application Artifacts.

Can I import my Oracle Business Intelligence Enterprise Edition reports created in a different Oracle Analytics Server or Oracle Analytics Cloud environment into Oracle Fusion Data Intelligence?

Yes, you can import the Oracle Analytics Server or Oracle Analytics Cloud reports into Oracle Fusion Data Intelligence if the versions are compatible.

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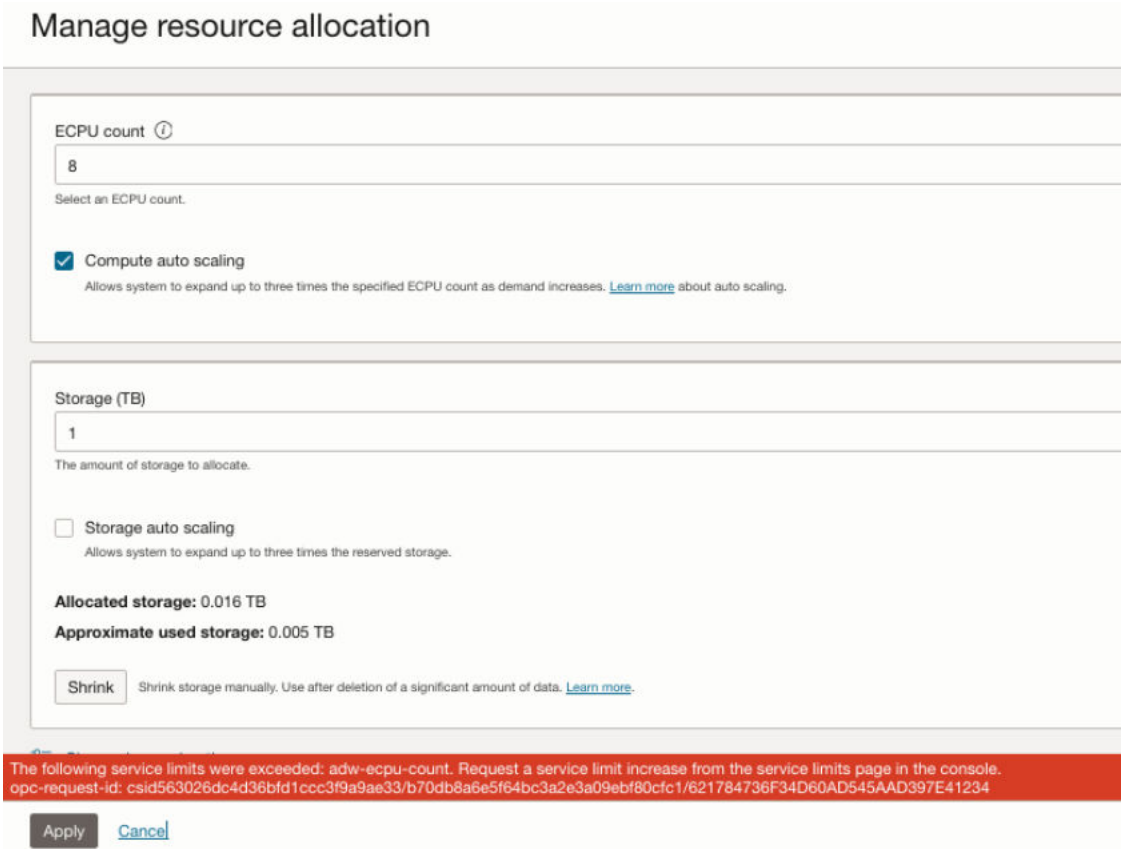
Where do I see the number of Oracle Compute Units (OCPUs) used?

Oracle Fusion Data Intelligence includes Oracle Analytics Cloud Enterprise Edition and Oracle Autonomous AI Lakehouse. Navigate as follows:

- Oracle Analytics Cloud OCPUs – Sign in to the Oracle Cloud Infrastructure Console, click **Navigator**, click **Analytics & AI**, click **Analytics Cloud** (identify the instance used by Oracle Fusion Data Intelligence), and then click **General Information**.
- Oracle Autonomous AI Lakehouse ECPUs – Sign in to the Oracle Cloud Infrastructure Console, click **Navigator**, click **Oracle Database**, click **Autonomous Database** (identify the instance used by Oracle Fusion Data Intelligence), and then click **General Information**.

Why am I unable to scale up the initial ECPUs or storage for Oracle Autonomous AI Lakehouse, instead see a message that says the service limits were exceeded?

You see the message that says the service limits were exceeded because adequate universal credits aren't available for additional ECPUs or increased storage capacity.



You must subscribe for universal credits. See Important – Read Before Activating and Activate the Universal Credits Subscription.

Does the autonomous data warehouse have automated daily backup configured?

Yes, the autonomous data warehouse has automated daily backups for the last 60 days.

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Can I back up and restore Oracle Fusion Data Intelligence?

Yes, you can back up and restore Oracle Fusion Data Intelligence in another region. See Back Up and Restore and About Disaster Recovery.

What should I consider before creating and deploying a data configuration bundle that has all my augmentations?

Before creating and deploying a data configuration bundle that has augmentations, check the augmentation-related table definitions, and ensure that they are same between the source and target instances.

After deploying a security bundle taken from one environment to another, why are the application role and group mappings missing in the target environment?

The application role and group mappings are missing in the target environment when the mapping between roles and groups aren't present in the source environment (from where the security bundle was taken). You must ensure that the role to group mappings exist in the source environment to avoid this issue.

Can I restore my trial instance, after it expires and I haven't extended it?

After a trial instance expires, Oracle notifies you before terminating the instance. If you don't extend the trial instance, then a scheduled job initiates to clean up the trial instances. After the instance is deleted, it can't be restored unles you have a backup.

Why do I see the creation of my Environment bundle being "in progress" forever?

There is a size restriction in the product today for larger bundles. See About Bundles.

Can I promote objects from a development or test instance to a production instance using the Promote Objects tile on the Console?

The Promote Objects tile on the Console is planned for deprecation in the future. Use the Bundles functionality to move objects from a development or test instance to a production instance. See Bundle Your Application Artifacts.

Should I upgrade the Oracle Autonomous AI Lakehouse 19c instance associated with my Oracle Fusion Data Intelligence instance to Oracle Autonomous AI Lakehouse 23ai?

No. Although the upgrade option to 23ai is visible, Oracle Fusion Data Intelligence certification with Oracle Autonomous AI Lakehouse 23ai is still in progress. You must not upgrade currently. Oracle will send an official notification after Oracle Fusion Data Intelligence is certified for Oracle Autonomous AI Lakehouse 23ai.

Top FAQs for Frequent Data Refresh

This topic lists the frequently asked questions for frequent data refresh (FDR) V2.

Topics

- FAQs for Scheduling Frequent Data Refresh V2
- FAQs for Managing Frequent Data Refresh V2

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FAQs for Scheduling Frequent Data Refresh V2

This topic lists the frequently asked questions for scheduling frequent data refresh V2.

Are there access controls or permissions to restrict other Oracle Fusion Data Intelligence users from changing the frequent data refresh schedules created by me?

You can use the audit history to view the frequent data refresh schedule changes. Currently, there are no access controls or permissions to restrict other users from changing your frequent data refresh schedules.

Are delta tables truncated after every frequent data refresh process or after the next incremental refresh?

The delta tables are truncated after the next incremental refresh.

Should we use lambda views or delta tables to move the latest frequent data refresh V2 data from Oracle Fusion Data Intelligence to downstream enterprise data lake?

For downstream integrations, it's recommended to capture data changes. See Capture Data Changes (Preview).

Is the FDR flag enabled automatically for custom facts,custom dimensions, extend custom confirmed dimensions, or custom facts? Are the lambda or delta tables created manually or automatically in Oracle Fusion Data Intelligence ?

When you run frequent data refresh, the lambda or delta tables are created automatically.

Does frequent data refresh V2 handle the hard deletes made in Oracle Fusion Cloud Applications?

No. Currently, frequent data refresh V2 doesn’t handle the hard deletes made in Oracle Fusion Cloud Applications.

Is it possible to schedule data refreshes bi-weekly multiple times a day?

No. You can’t schedule data refreshes bi-weekly multiple times a day.

Will you continue to support users who are using frequent data refresh V1?

We are currently supporting frequent data refresh V1, but we recommend users to upgrade and use frequent data refresh V2.

Will there be any price change for frequent data refresh V1 customers migrating to frequent data refresh V2?

Contact your Oracle account representative to discuss the specific implications of frequent data refresh V2. They can provide detailed, updated information on licensing and costs tailored to your organization's needs.

Is it possible to increase the limits for frequent data refresh V2? For example, can we request more than 20 tables for frequent data refresh?

Request Oracle Support to increase your limits. Note that increasing the limits might have cost implications.

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What column in the lambda view corresponds to the Oldest Date to Report field?

Download the frequent data refresh V2 database objects spreadsheet for each pillar on the Recommended Tbls FilterDateCols tab to review the frequent data refresh V2 filter date columns to discover the filter used.

- CX: CX Frequent Data Refresh V2 Data Lineage
- ERP: ERP Frequent Data Refresh V2 Data Lineage
- SCM: SCM Frequent Data Refresh V2 Data Lineage

Are there any potential downsides or performance impacts to increasing the number of FDR modules or tables?

Yes. See Performance Considerations for Frequent Data Refresh.

What's the difference in the data stored in warehouse tables after scheduled incremental and Frequent Data Refresh refreshes?

The older Frequent Data Refresh FDR V1 mechanism updated the same base data warehouse tables that are updated by the scheduled incremental refresh. The new Frequent Data Refresh mechanism FDR V2 doesn't update the base data warehouse tables. Instead, it utilizes Delta tables to store the data that has changed. The Lambda views incorporate base data from incremental data refresh and the changes up to the point when the frequent data refresh happened. Also, the Delta tables are reset during each incremental refresh. Frequent Data Refresh V2 updates data in warehouse tables more efficiently, enabling potentially higher frequency data refreshes. Oracle strongly recommends migrating from FDR V1 to FDR V2 to take advantage of its improved performance and expanded features. For details, see Schedule Frequent Refreshes of Data with Redesigned Refresh Mechanism (Preview).

FAQs for Managing Frequent Data Refresh V2

This topic lists the frequently asked questions for managing frequent data refresh (FDR) V2.

After completing the frequent data refresh process, which frequently refreshed data is automatically available in the semantic model?

See Automatic Availability of Frequently Refreshed Data in the Semantic Model.

After a frequent data refresh process, in which scenarios do we manually add the frequently refreshed data to the semantic model?

See Manual Addition of Frequently Refreshed Data in the Semantic Model.

Are there examples for enabling frequent data refresh V2 in semantic model extensions?

See Examples of Enabling and Using Frequently Refreshed Data in the Semantic Model.

Which scenarios don’t support frequent data refresh V2?

See Issues with Frequent Data Refresh.

Which modules, prebuilt facts, and adjoined degenerate dimension tables can you configure to automatically add the SME FDR flag?

The frequent data refresh V2 database objects spreadsheet contains:

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- Details of the supported database objects.
- List of data columns used to construct the lambda objects.

Review the metrics spreadsheet to understand the metrics supported for frequent data refresh V2.

- CX Frequent Data Refresh V2 Data Lineage
- ERP Frequent Data Refresh V2 Data Lineage
- SCM Frequent Data Refresh V2 Data Lineage

Will a custom subject area derived from a prebuilt subject area, automatically inherit the FDR flag, if the custom subject area uses data from a functional area and fact tables recommended for frequent data refresh?

No. The custom subject area doesn't automatically include the FDR flag.

To add the FDR flag to the custom subject area, perform these steps:

1. Navigate to the semantic model extensions configuration page.
2. In the Available Data Elements section of the custom subject area, expand the "FDR flag" folder.
3. Add the flag as a filter.

If I don't enable the functional area for frequent data refresh V2, and I select only the recommended fact table, is the FDR flag automatically available in the semantic model's subject area?

No. You must activate the corresponding module to make the FDR flag available in the semantic model's subject area.

Is the data augmentation table included in the frequent data refresh cross-referenced or linked to any module?

When you enable FDR V2 on any of the following, a link is established in the semantic model between the fact table enabled for frequent data refresh and the corresponding extension. All other data augmentations require manual semantic model extensions.

- Extended prebuilt fact
- Adjoined degenerate dimension of a new data augmentations dataset
- Adjoined degenerate dimension of an existing data augmentation

If a subject area contains multiple fact tables, should we use multiple FDR flags?

No. You can add only one FDR flag to a subject area.

If a subject area has only one FDR flag, will it retrieve intra-day data while querying the related fact table's lambda views?

Yes. The filter on the FDR flag selects intra-day data for all the frequent data refresh supported facts of this functional area in the query.

What's the process for applying the FDR flag to the read-only Oracle Analytics Cloud workbooks delivered with Oracle Fusion Data Intelligence ?

You must create a copy of the prebuilt workbook and then add the FDR flag as a filter to the new version.

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In a subject area, if I enable frequent data refresh V2 across a functional area, a recommended fact, and a conformed dimension, what happens to the semantic model?

The FDR flag enabled in the subject area is applicable to the recommended facts and their associated degenerate dimensions. You must manually update the semantic model to switch the conformed dimension to the frequent data refresh table.

Is it possible to display both the newly incremented data and existing data in the report simultaneously without modifying the FDR flag setting on the report itself?

You must select one of the two configurations:

- Enable the FDR flag and specify the lambda views.
- Disable the FDR flag and specify the base table.

Lambda views are incomplete during an ongoing incremental data refresh. When an incremental refresh is active, the report's underlying data, controlled by the FDR flag doesn't show any data.

Is there an impact on scheduling new frequent data refreshes if the "Manual Execution of Apply System Extensions" global parameter is enabled?

Yes. If you have enabled the **Manual Execution of Apply System Extensions** global parameter, for the FDR flag to be visible in the subject area, you must apply system extensions. See Apply System Extensions.

In the prebuilt subject area, if I enable the automated frequent data refresh module and the FDR flag is available, will my custom dimension switch from the standard view to the lambda view in the workbook?

If you join your custom dimension to the prebuilt fact, using a standard join, the dimension join will automatically switch between the prebuilt fact and the lambda fact inheriting the join. If you have used a complex join, you must manually define the join between the custom dimension and lambda fact.

If we select only the required modules for FDR and don't explicitly select any tables for FDR, will the FDR flag still be applied to the corresponding subject area?

Yes. Selecting the required modules for frequent data refresh automatically triggers the process for all FDR V2 supported facts within those modules.

If I only enable a module and no other tables for FDR what is the expected behavior?

The recommended fact tables and their associated (adjoined) degenerate dimensions for the module will be refreshed, and the FDR folder and flag will be applied to them.

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11

Troubleshooting

When I log in, Oracle Fusion Data Intelligence doesn't load properly.

When you log out, be sure to close all Oracle Fusion Data Intelligence sessions and close your browser before logging in as another user. You can have one session of Oracle Fusion Data Intelligence open at a time within the same browser.

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.

After I complete a production to test refresh of my source (for example, Oracle Fusion Cloud Applications), why isn't the data in Oracle Autonomous AI Lakehouse associated with my Oracle Fusion Data Intelligence instance synchronized with the source?

When you complete a production to test refresh on Oracle Fusion Cloud Applications, the data in Oracle Autonomous AI Lakehouse associated with your Oracle Fusion Data Intelligence instance may be different than what's in Oracle Fusion Cloud Applications. To ensure that the data in Oracle Autonomous AI Lakehouse and Oracle Fusion Cloud Applications is synchronized, the recommendation is to reset and reload the data source. See Reset and Reload the Data Source.

The data warehouse reset process is taking a long time.

Typically, incorrect access control lists on the Oracle Autonomous AI Lakehouse instance cause instance health issues and the reset process doesn’t complete. Perform these tasks:

1. Review and update the access control list for the Oracle Autonomous AI Lakehouse instance. See Configure the Access Control List.
2. Enable the data pipeline. See View the Data Pipeline Status.

When I change a data source, the data configuration bundle didn't update the data for that source.

If you want to change a data source, perform these actions in the sequence they are mentioned:

1. Create a full data config bundle.
2. Reset the warehouse.
3. Change the source.
4. Deploy the bundle.
5. Alternatively, you can do a full data reset and reload.

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> **Note**
>
> If you do a full data reset and reload, the system reloads all data from the selected sources from the initial extract date. You can't run any other job while this is in progress and this could take a long time to complete.

When I migrate from the development or test instance to a production instance, I don't see the data immediately.

Perform the following:

1. Create a full data configuration bundle on your development or test instance.
2. Create an environment bundle on your development or test instance..
3. Export these two bundles as files.
4. Import these files into your production instance.
5. Deploy the full data configuration bundle on your production instance and wait for all pipelines to complete.
6. Deploy the environment bundle on your production instance.

The data security assignment upload is failing.

Perform these actions:

1. Verify that the users whose data security assignments you're uploading are assigned the groups that are associated with the security context.
2. Verify that the groups that are associated with the security context are mapped to the applicable application roles.
3. Verify that the security object member values are valid by ensuring that the security object code and security object member values are mapped correctly in the file that you uploaded. If they aren't mapped correctly, then you must correct the mapping and re-upload the file using the Uploads tile on the Console. See Upload and Download Data Security Assignments.

The scheduled data validation suddenly stopped working and subsequently, the Data Validation worksheet wasn't updated and the user whose username was updated in the scheduled data validation lost the access to execute it.

Update the username in the scheduled data validation following these steps:

1. Sign into Oracle Fusion Data Intelligence with a user who can execute the scheduled data validation and has access to the applicable subject areas.
2. Navigate to the Data Validation tile on the Console.
3. Click the Scheduled Validation tab and edit it by clicking on the pencil icon, and then save it. This updates the username in the system with the user who updated it recently. In the next scheduled data validation, the system uses this latest username.
4. Verify that this latest user can run the Detailed Validation for subject areas that are scheduled with same parameters and is able to view the results.

I'm facing errors in the semantic model extensions.

See Resolve Common Errors in Semantic Model Extensions.

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No suitable driver found for `jdbc:hsqldb:file:/faw/software/remoteagent/config/remoteagentdb`

This happens because the Oracle JDBC driver placed in `/faw/software/custom-extractors/drivers-jar` is conflicting with the `HSql db` driver. To resolve this, remove the Oracle JDBC driver from location `/faw/software/custom-extractors/drivers-jar`.

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12

Certification Information

This appendix contains certification information for Oracle Fusion Data Intelligence.

Topics

- Certification - Supported Browsers

Certification - Supported Browsers

Oracle Fusion Data Intelligence supports these web browsers:

- **Apple Safari**: Support for the most current major production release and one prior release.
- **Google Chrome**: Support for the most current major stable channel release only. Visit the Google Chrome FAQ for a description of the Chrome support policy: https://support.google.com/chrome/a/answer/188447?hl=en.
- **Microsoft Edge**: Support for the latest major version of Microsoft Edge Chromium. Beginning in Microsoft Edge v77, Microsoft has decoupled Edge from the Windows operating system and shifted to a Chromium-based browser technology and deployment model that follows a continuous 6-week update pattern, similar to Chrome and Firefox. Visit the Microsoft Edge FAQ for a description of the Edge support policy: https://docs.microsoft.com/en-au/deployedge/microsoft-edge-support-lifecycle.
- **Mozilla Firefox**: Support for the most current major Extended Support Release (ESR) version and above, in production only. Visit the Mozilla FAQ for a description of the Firefox support policy: https://www.mozilla.org/en-US/firefox/organizations/faq/.
- For mobile device operating systems, Oracle provides support for the most recent browser delivered by the device operating system only.

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A

Resolve Common Errors in Semantic Model Extensions

You must resolve the detected semantic model errors in time to avoid patch upgrade failures.

If you don't resolve the errors, your pipeline may be disabled, release updates halted, update offerings blocked, and usability and support may be lost as a result. Use this list of solutions to resolve common errors. Should you continue to experience difficulties after following these solutions, create a service request for comprehensive assistance.

Error: Column missing from augmentation or mapped augmentation column not available

Description: One of your data augmentations is no longer synchronized with its corresponding semantic model extension. This mostly likely occurred because the **SME Options for Data Augmentation** feature (under the **Generally Available Features** tab on the Enable Features page) was enabled. For optimal performance and stability, Oracle recommends that you manually configure your semantic model with **User Extensions**, rather than having the data augmentation automatically generate the system semantic model extensions. The reason for this recommendation is any changes to the underlying data augmentation, that remain referenced in the semantic model, cause your semantic model extensions to become out-of-sync and fail. The recommended practice is to separate the Data Augmentation and Semantic Model Extension process, which provides greater flexibly for complex modelling and prevents errors. Going forward, when creating data augmentations, always use the Dataset type and define your own user semantic model extensions. Don't create any new data augmentations (of type Dimension, Fact, or Extend Entity) that create the system semantic model extensions. If feasible, convert all your existing data augmentations to datasets and user semantic model extensions.

Resolution Tip (if seeing this error in a non-production instance):

1. Reset the data augmentation cache. See Reset the Cache.
2. From the Console in Oracle Fusion Data Intelligence, navigate to **Data Configuration**, then **Data Augmentation**. Locate and edit the problematic data augmentation. Continue to the subsequent step to review the selected attributes. Uncheck any attributes no longer available in the source. Navigate through the configurations using **Next**, then click **Finish** to save and schedule your changes.
3. Following the completion of the data augmentation process, ensure to refresh and update the semantic model extensions that reference the data augmentation target table to remove any deactivated columns.
   To remove all unreferenced objects, conduct a cleanup of the subject area and logical star as follows:
   a. Create a sandbox.
   b. Edit the subject area to remove any elements that references the deleted columns.
   c. Edit the logical star to delete all associated columns, derived fields, and dimensions. If the dimension is missing from the logical star, re-add and then delete it.
   d. Apply the changes on the sandbox to confirm your changes.

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e. Merge the sandbox to Main.

f. Publish the updated model.

g. Re-validate the model to confirm it's error free.

Resolution Tip (if seeing this error in a production instance):

When you find that certain augmentation columns are absent in the production instance, the cause is typically one of two scenarios:

1. The augmentation wasn't deployed: In this scenario, you must run the Data Configuration bundle that includes the expected augmentation.
2. The augmentation was deliberately removed: If the Augmentation was deleted, you must first update the semantic model in the lower environment to remove the reference to it. After removing the reference, redeploy the semantic model bundle to the production instance.

Error: Custom columns have leading or trailing whitespace character

Description: The display name of an attribute, derived column, or physical column begins or ends with a space.

Resolution Tip: This error occurs when the display names of unselected attributes contain leading or trailing spaces. To resolve this:

1. Edit the logical star and select **Add attributes** for all columns with extra spaces at the beginning or end of their display names.
2. In **Display Name**, remove any leading or trailing whitespace from the newly selected columns. Click outside the field to save the change.
3. Proceed through the next steps and save your modifications.
4. Apply the changes in your sandbox.
5. Merge the sandbox to the main sandbox.
6. Publish the updated model.
7. Revalidate the model to confirm it's error free.

> **Note**
>
> The additional selected columns in the logical star won't automatically appear in the user-facing subject area unless you add it explicitly.

Error: Subject area attributes have leading or trailing whitespace character. Please check subject area name/description/folders/columns for possible whitespaces

Description: The display name of a subject area name, description, folder, or column name begins or ends with a space.

Resolution Tip: Edit the subject area, then edit the problematic customization, locate, and remove all leading and trailing spaces on subject area names, descriptions, folders, and column names.

Error: Step is in error state

Description: An error occurred in this step during the semantic model compilation.

Resolution Tip: Edit the failed step, investigate, identify the errors, and resolve them.

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Customization steps can be in an error state because the extension's source is no longer accessible. This is indicated by the object drop-down showing "Select" instead of the correct object name when you edit the customization.

Database object not found can happen for the following reasons:

- The instance is missing referenced data applications, including data augmentations, descriptive flexfields (DFFs), and configurable account analysis.
- The database object was never migrated to Autonomous AI Lakehouse.
- The necessary permissions, such as GRANT SELECT ON "OAX_USER"."TABLE_VIEW" TO "OAX$OAC", were not applied or have been removed.
- The object name contains unsupported special characters such as parentheses.

Error: Last step in the branch has consistency check errors.

Description: An error occurred during the semantic model compilation.

Resolution Tip: The error indicates a failure in the final step, but the root cause likely lies in an earlier stage. Edit the last failed step, investigate, identify the errors, and resolve them.

Error: "Max rows limit exceeded" or "Query execution failed: Max rows limit exceeded" within the workbook.

Description: These errors appear in the workbook after the semantic model has been published.

Resolution Tip: This issue might be related to an extended attribute column size exceeding 256 characters. To resolve this, modify the column definition to make the column size less than or equal to 256 characters.

For example, `ALTER TABLE TABLE_NAME MODIFY (COLUMN_NAME VARCHAR2(256));`

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B

Event Types, Attributes, and Attribute Values for Event Rules

Use the details provided in this section to create event rules that trigger the event-related notifications. In the Rule Conditions area on the Create Rule page in Oracle Cloud Infrastructure, select the event types, attributes, and attribute values to trigger actions.

Ensure to enable the event notifications capability. See Enable Event Notifications (Preview).

For the event rule condition, you can select one or more of these Fusion Data Intelligence event types:

- AppRelease
- DataPipeline
- DataRefresh – Estimate
- Instance related event types for:
  - Instance create, delete, terminate, and update
  - Compartment change
  - Wallet rotation change
  - Platform update change
  - ACL update
  - Data safe enable
  - Data safe reset

> **Note**
>
> The Oracle Cloud Infrastructure event notification for the DataRefresh - Complete event type is no longer available. Use the DataPipeline event type instead of DataRefresh - Complete event type, and add conditions with requestType as ScheduledDataRefresh attributes and DataPublished status.

Create Event Rule

You can create events rule to trigger notification.

In the event rule, you must create an event type condition before you can add an attribute. You can add **Attribute** as a **Condition** and select or enter values for the attribute.

1. In the Rule Conditions area on the Create Rule page in Oracle Cloud Infrastructure, select **Event Type** in **Condition**, select **Analytics Warehouse** in **Service Name**.
2. In **Event Type**, select the event type for which you want to create the rule.
3. Click **Another Condition**, select **Attribute** in **Condition**.

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4. Select the attribute name and attribute value for the condition.
5. To add more conditions, click **Another Condition**, and provide the attribute details.
6. Click **Create**.

For example, to receive notifications for the Scheduled Data Refresh task, do the following:

1. In the Rule Conditions area on the Create Rule page in Oracle Cloud Infrastructure, select **Event Type** in **Condition**, select **Analytics Warehouse** in **Service Name**, and select **DataPipeline** in **Event Type**.
2. Click **Another Condition**, select **Attribute** in **Condition**, select **requestType** in **Attribute Name**, and enter **ScheduledDataRefresh** in **Attribute Values**.
3. Click **Another Condition**, select **Attribute** in **Condition**, select **status** in **Attribute Name**, and in **Attribute Values** enter as applicable:
   - Enter **PriorityDataPublished** for event generated when tables selected in Prioritized Data Refresh are available. See Prioritize Datasets for Incremental Refresh (Preview).
   - Enter **DataPublished** for event generated when all the data with scheduled incremental refresh is available. See Schedule Incremental Data Refreshes.
   - Enter **Completed** for event generated when the scheduled incremental refresh including post processing is complete.

   You can enter one or more values.

AppRelease Event Type

This topic lists the attribute details of the AppRelease event type.

AppRelease Event Type Attributes

See Update Your Application.

Attribute Name	Attribute Value
entityType	ReleaseUpdate
requestType	AppRelease
status	UpdateAvailable Scheduled Completed

DataPipeline Event Type

This topic lists the attribute details of the DataPipeline event type.

Here's a list of all the pipeline requests that you can get events for:

- Scheduled Data Refresh (Incremental Data Refresh)
- Frequent Data Refresh
- Data Maintenance
- Data Warehouse Reset
- Data Source Reset and Reload
- Enable Data Pipeline

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- Disable Data Pipeline
- Activate Functional area
- Activate Data augmentation
- Deploy Data Application
- Functional Area Data Refresh
- Data Augmentation Data Refresh
- Data Application Data Refresh
- Deactivate Functional Area
- Deactivate Data Augmentation
- Deactivate Data Application
- Delete Functional Area
- Delete Data Augmentation
- Delete Data Application
- Data Share

DataPipeline Event Type Attributes for Scheduled Data Refresh

See Schedule Incremental Data Refreshes.

Attribute Name	Attribute Value
requestType	ScheduledDataRefresh
status	• Scheduled • Started • PriorityDataPublished • DataPublished • Completed • Skipped
order	The attribute values can be 0, 1, or 2 and depend on the number of stages in the scheduled data refresh. See details about the stages (in order) in Schedule Incremental Data Refreshes.

DataPipeline Event Type Attributes for Frequent Data Refresh

See Schedule Frequent Data Refreshes.

> **Note**
>
> When there is no data to publish as part of the Frequent Data Refresh process, the system doesn't send the DataPublished notification.

Attribute Name	Attribute Value
requestType	FrequentDataRefresh
status	• DataPublished • Completed • Skipped

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Attribute Name	Attribute Value
dataSourceType	Fusion (for example)

DataPipeline Event Type Attributes for Data Maintenance

See Schedule Data Maintenance.

Attribute Name	Attribute Value
requestType	DataMaintenance
status	• DataPublished • Completed • Skipped
dataSourceType	Fusion (for example)

DataPipeline Event Type Attributes for Data Warehouse Reset

See Reset the Data Warehouse.

Attribute Name	Attribute Value
requestType	ResetDataWarehouse
status	• Scheduled • Completed

DataPipeline Event Type Attributes for Data Source Reset and Reload

See Reset and Reload the Data Source.

Attribute Name	Attribute Value
requestType	ResetAndReload
status	• Scheduled • Completed
dataSourceType	Fusion (for example)

DataPipeline Event Type Attributes for Enable Data Pipeline

See View the Data Pipeline Status.

Attribute Name	Attribute Value
requestType	EnableDataPipeline
status	Completed

DataPipeline Event Type Attributes for Disable Data Pipeline

See View the Data Pipeline Status.

Attribute Name	Attribute Value
requestType	DisableDataPipeline
status	Completed

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DataPipeline Event Type Attributes for Activate Functional area

See Activate a Data Pipeline for a Functional Area.

Attribute Name	Attribute Value
entityType	FunctionalArea
requestType	Activate
status	• Scheduled • DataPublished • Completed

DataPipeline Event Type Attributes for Activate Data augmentation

See Augment Your Data.

Attribute Name	Attribute Value
entityType	DataAugmentation
requestType	Activate
status	• Scheduled • DataPublished • Completed

DataPipeline Event Type Attributes for Deploy Data Application

See Extend Data with Data Applications.

Attribute Name	Attribute Value
entityType	CustomDataConfiguration
requestType	GenerateCustomApp
status	• Scheduled • Completed
requestType	DeployCustomApp
status	• Scheduled • Completed

DataPipeline Event Type Attributes for Functional Area Data Refresh

See Reload Data for a Data Pipeline.

Attribute Name	Attribute Value
entityType	FunctionalArea
requestType	RefreshData
status	• Scheduled • Completed

DataPipeline Event Type Attributes for Data Augmentation Data Refresh

See Refresh and Reload a Data Augmentation.

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Attribute Name	Attribute Value
entityType	DataAugmentation
requestType	RefreshData
status	• Scheduled • Completed

DataPipeline Event Type Attributes for Data Application Data Refresh

See Extend Data with Data Applications.

Attribute Name	Attribute Value
entityType	DataApplication
requestType	RefreshData
status	• Scheduled • Completed

DataPipeline Event Type Attributes for Deactivate Functional Area

See Deactivate a Data Pipeline for a Functional Area.

Attribute Name	Attribute Value
entityType	FunctionalArea
requestType	Deactivate
status	Completed

DataPipeline Event Type Attributes for Deactivate Data Augmentation

See Augment Your Data.

Attribute Name	Attribute Value
entityType	DataAugmentation
requestType	Deactivate
status	Completed

DataPipeline Event Type Attributes for Deactivate Data Application

See Extend Data with Data Applications.

Attribute Name	Attribute Value
entityType	CustomDataConfiguration
requestType	Deactivate
status	Completed

DataPipeline Event Type Attributes for Delete Functional Area

See Delete a Data Pipeline for a Functional Area.

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Attribute Name	Attribute Value
FunctionalArea	FunctionalArea
requestType	Delete
status	• Scheduled • Completed

> **Note**
>
> If activation hasn't completed and you delete a functional area or data augmentation or custom data augmentation, the system doesn't send events for delete, scheduled, and completed.

DataPipeline Event Type Attributes for Delete Data Augmentation

See Augment Your Data.

Attribute Name	Attribute Value
entityType	DataAugmentation
requestType	Delete
status	• Scheduled • Completed

DataPipeline Event Type Attributes for Delete Data Application

See Extend Data with Data Applications.

Attribute Name	Attribute Value
entityType	CustomDataConfiguration
requestType	Delete
status	• Scheduled • Completed

DataPipeline Event Type Attributes for Data Share

See Share Data with External Systems (Preview).

Attribute Name	Attribute Value
requestType	RefreshTarget
status	• Scheduled • Started • Completed

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DataRefresh – Estimate Event Type

This topic lists the attribute details of the DataRefresh – Estimate event type.

DataRefresh – Estimate Event Type Attributes

See View the Estimated Data Refresh Time.

> **Note**
>
> This is applicable only for the scheduled incremental data refreshes. See Schedule Incremental Data Refreshes.

Attribute Name	Attribute Value
requestType	DataRefreshEstimate

Instance Event Types

This topic lists the Fusion Data Intelligence instance event types you can use to create event rules.

Event type	Event description
FDI Instance – Change Compartment Begin	Compartment change for the Fusion Data Intelligence instance begins
FDI Instance – Change Compartment End	Compartment change for the Fusion Data Intelligence instance ends
FDI Instance – Create Begin	Fusion Data Intelligence instance creation begins
FDI Instance – Create End	Fusion Data Intelligence instance creation ends
FDI Instance – Delete Begin	Fusion Data Intelligence instance deletion begins
FDI Instance – Delete End	Fusion Data Intelligence instance deletion ends
FDI Instance – Terminate Begin	Fusion Data Intelligence instance subscription termination begins
FDI Instance – Terminate End	Fusion Data Intelligence instance subscription termination ends
FDI Instance – Update Begin	Fusion Data Intelligence instance update begins
FDI Instance – Update End	Fusion Data Intelligence instance update ends
FDI Instance – Wallet Rotation Begin	ADW wallet rotation for the Fusion Data Intelligence instance begins
FDI Instance – Wallet Rotation End	ADW wallet rotation for the Fusion Data Intelligence instance ends
FDI Instance – Platform Update Begin	Platform release update for the Fusion Data Intelligence instance begins
FDI Instance – Platform Update End	Platform release update for the Fusion Data Intelligence instance ends
FDI Instance – ACL Update Begin	ACL update for the Fusion Data Intelligence instance begins
FDI Instance – ACL Update End	ACL update for the Fusion Data Intelligence instance ends

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Event type	Event description
FDI Instance – Data Safe Enable Begin	Data safe process for the Fusion Data Intelligence instance begins
FDI Instance – Data Safe Enable End	Data safe process for the Fusion Data Intelligence instance ends
FDI Instance – Data Safe Reset Begin	Data safe reset for the Fusion Data Intelligence instance begins
FDI Instance – Data Safe Reset Begin	Data safe reset for the Fusion Data Intelligence instance ends

Instance Event Type Attributes

Attribute Name	Attribute Value
availabilityDomain	Specify the domain of the instance.
compartmentId	Specify the compartment ID of the instance.
compartmentName	Specify the compartment name of the instance.
resourceId	Specify the Oracle Cloud Infrastructure (OCI) ID of the instance.
resourceName	Specify the name of the instance.

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C

Conformed Dimensions to Merge External Applications

Prior to merging external applications with Oracle Fusion Data Intelligence, update the joins between the repository files of the external application and Oracle Fusion Data Intelligence with the conformed dimensions as appropriate, keeping in mind the constraints.

List of Conformed Dimensions

Module	Dimension
Absence Management	Dim - Date Enterprise Calendar
Absence Management	Dim - Date Gregorian Calendar
Absence Management	Dim - Department
Absence Management	Dim - Job
Absence Management	Dim - Legal Employer
Absence Management	Dim - Reporting Establishment
Absence Management	Dim - Worker
Account Analysis Foundation	Dim - Balancing Segment
Account Analysis Foundation	Dim - Balancing Segment Hierarchy
Account Analysis Foundation	Dim - Cost Center
Account Analysis Foundation	Dim - Cost Center Hierarchy
Account Analysis Foundation	Dim - Currency
Account Analysis Foundation	Dim - Date Fiscal Calendar
Account Analysis Foundation	Dim - GL Account
Account Analysis Foundation	Dim - GL Segment1
Account Analysis Foundation	Dim - GL Segment1 Hierarchy
Account Analysis Foundation	Dim - GL Segment10
Account Analysis Foundation	Dim - GL Segment10 Hierarchy
Account Analysis Foundation	Dim - GL Segment2
Account Analysis Foundation	Dim - GL Segment2 Hierarchy
Account Analysis Foundation	Dim - GL Segment3
Account Analysis Foundation	Dim - GL Segment3 Hierarchy
Account Analysis Foundation	Dim - GL Segment4
Account Analysis Foundation	Dim - GL Segment4 Hierarchy
Account Analysis Foundation	Dim - GL Segment5
Account Analysis Foundation	Dim - GL Segment5 Hierarchy
Account Analysis Foundation	Dim - GL Segment6
Account Analysis Foundation	Dim - GL Segment6 Hierarchy
Account Analysis Foundation	Dim - GL Segment7
Account Analysis Foundation	Dim - GL Segment7 Hierarchy
Account Analysis Foundation	Dim - GL Segment8
Account Analysis Foundation	Dim - GL Segment8 Hierarchy

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Module	Dimension
Account Analysis Foundation	Dim - GL Segment9
Account Analysis Foundation	Dim - GL Segment9 Hierarchy
Account Analysis Foundation	Dim - Ledger
Account Analysis Foundation	Dim - Natural Account
Account Analysis Foundation	Dim - Natural Account Hierarchy
Account Reconciliation	Dim - Balancing Segment
Account Reconciliation	Dim - Balancing Segment Hierarchy
Account Reconciliation	Dim - Business Unit
Account Reconciliation	Dim - Cost Center
Account Reconciliation	Dim - Cost Center Hierarchy
Account Reconciliation	Dim - Currency
Account Reconciliation	Dim - Customer
Account Reconciliation	Dim - Date Fiscal Calendar
Account Reconciliation	Dim - GL Account
Account Reconciliation	Dim - GL Segment1
Account Reconciliation	Dim - GL Segment1 Hierarchy
Account Reconciliation	Dim - GL Segment10
Account Reconciliation	Dim - GL Segment10 Hierarchy
Account Reconciliation	Dim - GL Segment2
Account Reconciliation	Dim - GL Segment2 Hierarchy
Account Reconciliation	Dim - GL Segment3
Account Reconciliation	Dim - GL Segment3 Hierarchy
Account Reconciliation	Dim - GL Segment4
Account Reconciliation	Dim - GL Segment4 Hierarchy
Account Reconciliation	Dim - GL Segment5
Account Reconciliation	Dim - GL Segment5 Hierarchy
Account Reconciliation	Dim - GL Segment6
Account Reconciliation	Dim - GL Segment6 Hierarchy
Account Reconciliation	Dim - GL Segment7
Account Reconciliation	Dim - GL Segment7 Hierarchy
Account Reconciliation	Dim - GL Segment8
Account Reconciliation	Dim - GL Segment8 Hierarchy
Account Reconciliation	Dim - GL Segment9
Account Reconciliation	Dim - GL Segment9 Hierarchy
Account Reconciliation	Dim - Ledger
Account Reconciliation	Dim - Legal Entity
Account Reconciliation	Dim - Natural Account
Account Reconciliation	Dim - Natural Account Hierarchy
Account Reconciliation	Dim - Supplier
Account Reconciliation	Dim - Supplier Sites
Accounts Payable	Dim - Balancing Segment
Accounts Payable	Dim - Balancing Segment Hierarchy
Accounts Payable	Dim - Business Unit
Accounts Payable	Dim - Cost Center
Accounts Payable	Dim - Cost Center Hierarchy

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Module	Dimension
Accounts Payable	Dim - Currency
Accounts Payable	Dim - Date Fiscal Calendar
Accounts Payable	Dim - Expenditure Organization
Accounts Payable	Dim - Expenditure Type
Accounts Payable	Dim - GL Account
Accounts Payable	Dim - GL Segment1
Accounts Payable	Dim - GL Segment1 Hierarchy
Accounts Payable	Dim - GL Segment10
Accounts Payable	Dim - GL Segment10 Hierarchy
Accounts Payable	Dim - GL Segment2
Accounts Payable	Dim - GL Segment2 Hierarchy
Accounts Payable	Dim - GL Segment3
Accounts Payable	Dim - GL Segment3 Hierarchy
Accounts Payable	Dim - GL Segment4
Accounts Payable	Dim - GL Segment4 Hierarchy
Accounts Payable	Dim - GL Segment5
Accounts Payable	Dim - GL Segment5 Hierarchy
Accounts Payable	Dim - GL Segment6
Accounts Payable	Dim - GL Segment6 Hierarchy
Accounts Payable	Dim - GL Segment7
Accounts Payable	Dim - GL Segment7 Hierarchy
Accounts Payable	Dim - GL Segment8
Accounts Payable	Dim - GL Segment8 Hierarchy
Accounts Payable	Dim - GL Segment9
Accounts Payable	Dim - GL Segment9 Hierarchy
Accounts Payable	Dim - Ledger
Accounts Payable	Dim - Legal Entity
Accounts Payable	Dim - Natural Account
Accounts Payable	Dim - Natural Account Hierarchy
Accounts Payable	Dim - Party
Accounts Payable	Dim - Project
Accounts Payable	Dim - Supplier
Accounts Payable	Dim - Supplier Sites
Accounts Payable	Dim - Task
Accounts Receivable	Dim - Balancing Segment
Accounts Receivable	Dim - Balancing Segment Hierarchy
Accounts Receivable	Dim - Business Unit
Accounts Receivable	Dim - Cost Center
Accounts Receivable	Dim - Cost Center Hierarchy
Accounts Receivable	Dim - Currency
Accounts Receivable	Dim - Customer
Accounts Receivable	Dim - Customer Bill To
Accounts Receivable	Dim - Customer Ship To Location
Accounts Receivable	Dim - Customer Sold To
Accounts Receivable	Dim - Date Fiscal Calendar

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Module	Dimension
Accounts Receivable	Dim - GL Account
Accounts Receivable	Dim - GL Segment1
Accounts Receivable	Dim - GL Segment1 Hierarchy
Accounts Receivable	Dim - GL Segment10
Accounts Receivable	Dim - GL Segment10 Hierarchy
Accounts Receivable	Dim - GL Segment2
Accounts Receivable	Dim - GL Segment2 Hierarchy
Accounts Receivable	Dim - GL Segment3
Accounts Receivable	Dim - GL Segment3 Hierarchy
Accounts Receivable	Dim - GL Segment4
Accounts Receivable	Dim - GL Segment4 Hierarchy
Accounts Receivable	Dim - GL Segment5
Accounts Receivable	Dim - GL Segment5 Hierarchy
Accounts Receivable	Dim - GL Segment6
Accounts Receivable	Dim - GL Segment6 Hierarchy
Accounts Receivable	Dim - GL Segment7
Accounts Receivable	Dim - GL Segment7 Hierarchy
Accounts Receivable	Dim - GL Segment8
Accounts Receivable	Dim - GL Segment8 Hierarchy
Accounts Receivable	Dim - GL Segment9
Accounts Receivable	Dim - GL Segment9 Hierarchy
Accounts Receivable	Dim - Inventory Item
Accounts Receivable	Dim - Inventory Organization
Accounts Receivable	Dim - Item Category Hierarchy
Accounts Receivable	Dim - Ledger
Accounts Receivable	Dim - Legal Entity
Accounts Receivable	Dim - Natural Account
Accounts Receivable	Dim - Natural Account Hierarchy
Accounts Receivable	Dim - Party
Accounts Receivable	Dim - Unit of Measure
Assets	Dim - Balancing Segment
Assets	Dim - Balancing Segment Hierarchy
Assets	Dim - Cost Center
Assets	Dim - Cost Center Hierarchy
Assets	Dim - Currency
Assets	Dim - Date Fiscal Calendar
Assets	Dim - GL Account
Assets	Dim - GL Segment1
Assets	Dim - GL Segment1 Hierarchy
Assets	Dim - GL Segment10
Assets	Dim - GL Segment10 Hierarchy
Assets	Dim - GL Segment2
Assets	Dim - GL Segment2 Hierarchy
Assets	Dim - GL Segment3
Assets	Dim - GL Segment3 Hierarchy

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Module	Dimension
Assets	Dim - GL Segment4
Assets	Dim - GL Segment4 Hierarchy
Assets	Dim - GL Segment5
Assets	Dim - GL Segment5 Hierarchy
Assets	Dim - GL Segment6
Assets	Dim - GL Segment6 Hierarchy
Assets	Dim - GL Segment7
Assets	Dim - GL Segment7 Hierarchy
Assets	Dim - GL Segment8
Assets	Dim - GL Segment8 Hierarchy
Assets	Dim - GL Segment9
Assets	Dim - GL Segment9 Hierarchy
Assets	Dim - Ledger
Assets	Dim - Legal Entity
Assets	Dim - Natural Account
Assets	Dim - Natural Account Hierarchy
B2B Service Analytics	Dim - Business Unit
B2B Service Analytics	Dim - Customer Sold To
COGS And Gross Margin	Dim - Balancing Segment
COGS And Gross Margin	Dim - Balancing Segment Hierarchy
COGS And Gross Margin	Dim - Business Unit
COGS And Gross Margin	Dim - Cost Center
COGS And Gross Margin	Dim - Cost Center Hierarchy
COGS And Gross Margin	Dim - Currency
COGS And Gross Margin	Dim - Customer
COGS And Gross Margin	Dim - Customer Account
COGS And Gross Margin	Dim - Customer Account Bill To
COGS And Gross Margin	Dim - Customer Bill To
COGS And Gross Margin	Dim - Customer Ship To
COGS And Gross Margin	Dim - GL Account
COGS And Gross Margin	Dim - GL Segment1
COGS And Gross Margin	Dim - GL Segment1 Hierarchy
COGS And Gross Margin	Dim - GL Segment10
COGS And Gross Margin	Dim - GL Segment10 Hierarchy
COGS And Gross Margin	Dim - GL Segment2
COGS And Gross Margin	Dim - GL Segment2 Hierarchy
COGS And Gross Margin	Dim - GL Segment3
COGS And Gross Margin	Dim - GL Segment3 Hierarchy
COGS And Gross Margin	Dim - GL Segment4
COGS And Gross Margin	Dim - GL Segment4 Hierarchy
COGS And Gross Margin	Dim - GL Segment5
COGS And Gross Margin	Dim - GL Segment5 Hierarchy
COGS And Gross Margin	Dim - GL Segment6
COGS And Gross Margin	Dim - GL Segment6 Hierarchy
COGS And Gross Margin	Dim - GL Segment7

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Module	Dimension
COGS And Gross Margin	Dim - GL Segment7 Hierarchy
COGS And Gross Margin	Dim - GL Segment8
COGS And Gross Margin	Dim - GL Segment8 Hierarchy
COGS And Gross Margin	Dim - GL Segment9
COGS And Gross Margin	Dim - GL Segment9 Hierarchy
COGS And Gross Margin	Dim - Inventory Organization
COGS And Gross Margin	Dim - Item Category Hierarchy
COGS And Gross Margin	Dim - Ledger
COGS And Gross Margin	Dim - Legal Entity
COGS And Gross Margin	Dim - Natural Account
COGS And Gross Margin	Dim - Natural Account Hierarchy
Cost Management	Dim - Currency
Cost Management	Dim - Date Fiscal Calendar
Cost Management	Dim - Inventory Organization
Cost Management	Dim - Item Category Hierarchy
Cost Management	Dim - Ledger
Cost Management	Dim - Legal Entity
Cost Management	Dim - Locator
Cost Management	Dim - Sub Inventory
Cost Management	Dim - Sub Inventory Location
Cost Management	Dim - Unit of Measure
Employee Expense	Dim - Balancing Segment
Employee Expense	Dim - Balancing Segment Hierarchy
Employee Expense	Dim - Business Unit
Employee Expense	Dim - Cost Center
Employee Expense	Dim - Cost Center Hierarchy
Employee Expense	Dim - Currency
Employee Expense	Dim - Date Fiscal Calendar
Employee Expense	Dim - Department
Employee Expense	Dim - Expenditure Organization
Employee Expense	Dim - Expenditure Type
Employee Expense	Dim - GL Account
Employee Expense	Dim - GL Segment1
Employee Expense	Dim - GL Segment1 Hierarchy
Employee Expense	Dim - GL Segment10
Employee Expense	Dim - GL Segment10 Hierarchy
Employee Expense	Dim - GL Segment2
Employee Expense	Dim - GL Segment2 Hierarchy
Employee Expense	Dim - GL Segment3
Employee Expense	Dim - GL Segment3 Hierarchy
Employee Expense	Dim - GL Segment4
Employee Expense	Dim - GL Segment4 Hierarchy
Employee Expense	Dim - GL Segment5
Employee Expense	Dim - GL Segment5 Hierarchy
Employee Expense	Dim - GL Segment6

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Module	Dimension
Employee Expense	Dim - GL Segment6 Hierarchy
Employee Expense	Dim - GL Segment7
Employee Expense	Dim - GL Segment7 Hierarchy
Employee Expense	Dim - GL Segment8
Employee Expense	Dim - GL Segment8 Hierarchy
Employee Expense	Dim - GL Segment9
Employee Expense	Dim - GL Segment9 Hierarchy
Employee Expense	Dim - Job
Employee Expense	Dim - Ledger
Employee Expense	Dim - Natural Account
Employee Expense	Dim - Natural Account Hierarchy
Employee Expense	Dim - Project
Employee Expense	Dim - Task
Employee Expense	Dim - Worker
GL Budgets Analysis	Dim - Balancing Segment
GL Budgets Analysis	Dim - Balancing Segment Hierarchy
GL Budgets Analysis	Dim - Cost Center
GL Budgets Analysis	Dim - Cost Center Hierarchy
GL Budgets Analysis	Dim - Currency
GL Budgets Analysis	Dim - Date Fiscal Calendar
GL Budgets Analysis	Dim - GL Account
GL Budgets Analysis	Dim - GL Segment1
GL Budgets Analysis	Dim - GL Segment1 Hierarchy
GL Budgets Analysis	Dim - GL Segment10
GL Budgets Analysis	Dim - GL Segment10 Hierarchy
GL Budgets Analysis	Dim - GL Segment2
GL Budgets Analysis	Dim - GL Segment2 Hierarchy
GL Budgets Analysis	Dim - GL Segment3
GL Budgets Analysis	Dim - GL Segment3 Hierarchy
GL Budgets Analysis	Dim - GL Segment4
GL Budgets Analysis	Dim - GL Segment4 Hierarchy
GL Budgets Analysis	Dim - GL Segment5
GL Budgets Analysis	Dim - GL Segment5 Hierarchy
GL Budgets Analysis	Dim - GL Segment6
GL Budgets Analysis	Dim - GL Segment6 Hierarchy
GL Budgets Analysis	Dim - GL Segment7
GL Budgets Analysis	Dim - GL Segment7 Hierarchy
GL Budgets Analysis	Dim - GL Segment8
GL Budgets Analysis	Dim - GL Segment8 Hierarchy
GL Budgets Analysis	Dim - GL Segment9
GL Budgets Analysis	Dim - GL Segment9 Hierarchy
GL Budgets Analysis	Dim - Ledger
GL Budgets Analysis	Dim - Legal Entity
GL Budgets Analysis	Dim - Natural Account
GL Budgets Analysis	Dim - Natural Account Hierarchy

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Module	Dimension
General Ledger	Dim - Balancing Segment
General Ledger	Dim - Balancing Segment Hierarchy
General Ledger	Dim - Cost Center
General Ledger	Dim - Cost Center Hierarchy
General Ledger	Dim - Currency
General Ledger	Dim - Date Fiscal Calendar
General Ledger	Dim - GL Account
General Ledger	Dim - GL Segment1
General Ledger	Dim - GL Segment1 Hierarchy
General Ledger	Dim - GL Segment10
General Ledger	Dim - GL Segment10 Hierarchy
General Ledger	Dim - GL Segment2
General Ledger	Dim - GL Segment2 Hierarchy
General Ledger	Dim - GL Segment3
General Ledger	Dim - GL Segment3 Hierarchy
General Ledger	Dim - GL Segment4
General Ledger	Dim - GL Segment4 Hierarchy
General Ledger	Dim - GL Segment5
General Ledger	Dim - GL Segment5 Hierarchy
General Ledger	Dim - GL Segment6
General Ledger	Dim - GL Segment6 Hierarchy
General Ledger	Dim - GL Segment7
General Ledger	Dim - GL Segment7 Hierarchy
General Ledger	Dim - GL Segment8
General Ledger	Dim - GL Segment8 Hierarchy
General Ledger	Dim - GL Segment9
General Ledger	Dim - GL Segment9 Hierarchy
General Ledger	Dim - Ledger
General Ledger	Dim - Legal Entity
General Ledger	Dim - Natural Account
General Ledger	Dim - Natural Account Hierarchy
Goals and Career Development	Dim - Date Enterprise Calendar
Goals and Career Development	Dim - Date Gregorian Calendar
Goals and Career Development	Dim - Department
Goals and Career Development	Dim - Job
Goals and Career Development	Dim - Legal Employer
Goals and Career Development	Dim - Reporting Establishment
Goals and Career Development	Dim - Worker
Inventory Balances	Dim - Date Fiscal Calendar
Inventory Balances	Dim - Date Gregorian Calendar
Inventory Balances	Dim - Inventory Organization
Inventory Balances	Dim - Item Category Hierarchy
Inventory Balances	Dim - Ledger
Inventory Balances	Dim - Legal Entity
Inventory Balances	Dim - Locator

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Module	Dimension
Inventory Balances	Dim - Sub Inventory
Inventory Balances	Dim - Sub Inventory Location
Inventory Management	Dim - Business Unit
Inventory Management	Dim - Customer
Inventory Management	Dim - Customer Account
Inventory Management	Dim - Customer Account Bill To
Inventory Management	Dim - Customer Bill To
Inventory Management	Dim - Customer Ship To
Inventory Management	Dim - Customer Sold To
Inventory Management	Dim - Date Fiscal Calendar
Inventory Management	Dim - Date Gregorian Calendar
Inventory Management	Dim - Expenditure Type
Inventory Management	Dim - Inventory Organization
Inventory Management	Dim - Item Category Hierarchy
Inventory Management	Dim - Ledger
Inventory Management	Dim - Legal Entity
Inventory Management	Dim - Locator
Inventory Management	Dim - Project
Inventory Management	Dim - Sub Inventory
Inventory Management	Dim - Sub Inventory Location
Inventory Management	Dim - Task
Learning Management	Dim - Currency
Learning Management	Dim - Date Enterprise Calendar
Learning Management	Dim - Date Gregorian Calendar
Learning Management	Dim - Department
Learning Management	Dim - Job
Learning Management	Dim - Legal Employer
Learning Management	Dim - Reporting Establishment
Learning Management	Dim - Worker
Marketing Campaign Closed Loop Analytics	Dim - Currency
Marketing Campaign Closed Loop Analytics	Dim - Customer Sold To
Order Management	Dim - Business Unit
Order Management	Dim - Currency
Order Management	Dim - Customer
Order Management	Dim - Customer Account
Order Management	Dim - Customer Account Bill To
Order Management	Dim - Customer Bill To
Order Management	Dim - Customer Ship To
Order Management	Dim - Customer Sold To
Order Management	Dim - Date Fiscal Calendar
Order Management	Dim - Date Gregorian Calendar
Order Management	Dim - Expenditure Type
Order Management	Dim - Inventory Organization
Order Management	Dim - Item Category Hierarchy
Order Management	Dim - Ledger

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Module	Dimension
Order Management	Dim - Legal Entity
Order Management	Dim - Project
Order Management	Dim - Task
Order Management	Dim - Unit of Measure
Payroll Management	Dim - Currency
Payroll Management	Dim - Date Gregorian Calendar
Payroll Management	Dim - Department
Payroll Management	Dim - Job
Payroll Management	Dim - Legal Employer
Payroll Management	Dim - Reporting Establishment
Payroll Management	Dim - Worker
Performance Management and Check-ins	Dim - Date Enterprise Calendar
Performance Management and Check-ins	Dim - Date Gregorian Calendar
Performance Management and Check-ins	Dim - Department
Performance Management and Check-ins	Dim - Job
Performance Management and Check-ins	Dim - Legal Employer
Performance Management and Check-ins	Dim - Reporting Establishment
Performance Management and Check-ins	Dim - Worker
Procurement Spend	Dim - Balancing Segment
Procurement Spend	Dim - Balancing Segment
Procurement Spend	Dim - Balancing Segment Hierarchy
Procurement Spend	Dim - Balancing Segment Hierarchy
Procurement Spend	Dim - Business Unit
Procurement Spend	Dim - Business Unit
Procurement Spend	Dim - Cost Center
Procurement Spend	Dim - Cost Center
Procurement Spend	Dim - Cost Center Hierarchy
Procurement Spend	Dim - Cost Center Hierarchy
Procurement Spend	Dim - Currency
Procurement Spend	Dim - Currency
Procurement Spend	Dim - Date Fiscal Calendar
Procurement Spend	Dim - Date Fiscal Calendar
Procurement Spend	Dim - Date Gregorian Calendar
Procurement Spend	Dim - Date Gregorian Calendar
Procurement Spend	Dim - Expenditure Type
Procurement Spend	Dim - Expenditure Type
Procurement Spend	Dim - GL Account
Procurement Spend	Dim - GL Account
Procurement Spend	Dim - GL Segment1
Procurement Spend	Dim - GL Segment1
Procurement Spend	Dim - GL Segment1 Hierarchy
Procurement Spend	Dim - GL Segment1 Hierarchy
Procurement Spend	Dim - GL Segment10
Procurement Spend	Dim - GL Segment10
Procurement Spend	Dim - GL Segment10 Hierarchy

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Module	Dimension
Procurement Spend	Dim - GL Segment10 Hierarchy
Procurement Spend	Dim - GL Segment2
Procurement Spend	Dim - GL Segment2
Procurement Spend	Dim - GL Segment2 Hierarchy
Procurement Spend	Dim - GL Segment2 Hierarchy
Procurement Spend	Dim - GL Segment3
Procurement Spend	Dim - GL Segment3
Procurement Spend	Dim - GL Segment3 Hierarchy
Procurement Spend	Dim - GL Segment3 Hierarchy
Procurement Spend	Dim - GL Segment4
Procurement Spend	Dim - GL Segment4
Procurement Spend	Dim - GL Segment4 Hierarchy
Procurement Spend	Dim - GL Segment4 Hierarchy
Procurement Spend	Dim - GL Segment5
Procurement Spend	Dim - GL Segment5
Procurement Spend	Dim - GL Segment5 Hierarchy
Procurement Spend	Dim - GL Segment5 Hierarchy
Procurement Spend	Dim - GL Segment6
Procurement Spend	Dim - GL Segment6
Procurement Spend	Dim - GL Segment6 Hierarchy
Procurement Spend	Dim - GL Segment6 Hierarchy
Procurement Spend	Dim - GL Segment7
Procurement Spend	Dim - GL Segment7
Procurement Spend	Dim - GL Segment7 Hierarchy
Procurement Spend	Dim - GL Segment7 Hierarchy
Procurement Spend	Dim - GL Segment8
Procurement Spend	Dim - GL Segment8
Procurement Spend	Dim - GL Segment8 Hierarchy
Procurement Spend	Dim - GL Segment8 Hierarchy
Procurement Spend	Dim - GL Segment9
Procurement Spend	Dim - GL Segment9
Procurement Spend	Dim - GL Segment9 Hierarchy
Procurement Spend	Dim - GL Segment9 Hierarchy
Procurement Spend	Dim - Inventory Organization
Procurement Spend	Dim - Inventory Organization
Procurement Spend	Dim - Item Category Hierarchy
Procurement Spend	Dim - Item Category Hierarchy
Procurement Spend	Dim - Ledger
Procurement Spend	Dim - Ledger
Procurement Spend	Dim - Legal Entity
Procurement Spend	Dim - Legal Entity
Procurement Spend	Dim - Natural Account
Procurement Spend	Dim - Natural Account
Procurement Spend	Dim - Natural Account Hierarchy
Procurement Spend	Dim - Natural Account Hierarchy

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Module	Dimension
Procurement Spend	Dim - PRC - Customer Ship To Location
Procurement Spend	Dim - PRC - Customer Ship To Location
Procurement Spend	Dim - PRC - Purchase Buyer
Procurement Spend	Dim - PRC - Purchase Buyer
Procurement Spend	Dim - PRC - Ship To Location
Procurement Spend	Dim - PRC - Ship To Location
Procurement Spend	Dim - Project
Procurement Spend	Dim - Project
Procurement Spend	Dim - Supplier
Procurement Spend	Dim - Supplier
Procurement Spend	Dim - Supplier Sites
Procurement Spend	Dim - Supplier Sites
Procurement Spend	Dim - Task
Procurement Spend	Dim - Task
Procurement Spend	Dim - Unit of Measure
Procurement Spend	Dim - Unit of Measure
Project Control	Dim - Business Unit
Project Control	Dim - Currency
Project Control	Dim - Date Fiscal Calendar
Project Control	Dim - Expenditure Organization
Project Control	Dim - Expenditure Type
Project Control	Dim - Inventory Item
Project Control	Dim - Job
Project Control	Dim - Legal Entity
Project Control	Dim - Project
Project Control	Dim - Project Unit
Project Control	Dim - Supplier
Project Control	Dim - Task
Project Control	Dim - Worker
Project Costing	Dim - Balancing Segment
Project Costing	Dim - Balancing Segment Hierarchy
Project Costing	Dim - Business Unit
Project Costing	Dim - Cost Center
Project Costing	Dim - Cost Center Hierarchy
Project Costing	Dim - Currency
Project Costing	Dim - Date Fiscal Calendar
Project Costing	Dim - Expenditure Organization
Project Costing	Dim - Expenditure Type
Project Costing	Dim - GL Account
Project Costing	Dim - GL Segment1
Project Costing	Dim - GL Segment1 Hierarchy
Project Costing	Dim - GL Segment10
Project Costing	Dim - GL Segment10 Hierarchy
Project Costing	Dim - GL Segment2
Project Costing	Dim - GL Segment2 Hierarchy

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Module	Dimension
Project Costing	Dim - GL Segment3
Project Costing	Dim - GL Segment3 Hierarchy
Project Costing	Dim - GL Segment4
Project Costing	Dim - GL Segment4 Hierarchy
Project Costing	Dim - GL Segment5
Project Costing	Dim - GL Segment5 Hierarchy
Project Costing	Dim - GL Segment6
Project Costing	Dim - GL Segment6 Hierarchy
Project Costing	Dim - GL Segment7
Project Costing	Dim - GL Segment7 Hierarchy
Project Costing	Dim - GL Segment8
Project Costing	Dim - GL Segment8 Hierarchy
Project Costing	Dim - GL Segment9
Project Costing	Dim - GL Segment9 Hierarchy
Project Costing	Dim - Inventory Item
Project Costing	Dim - Inventory Organization
Project Costing	Dim - Job
Project Costing	Dim - Ledger
Project Costing	Dim - Legal Entity
Project Costing	Dim - Natural Account
Project Costing	Dim - Natural Account Hierarchy
Project Costing	Dim - Project
Project Costing	Dim - Project Unit
Project Costing	Dim - Supplier
Project Costing	Dim - Task
Project Costing	Dim - Worker
Purchase Agreement	Dim - Business Unit
Purchase Agreement	Dim - Business Unit
Purchase Agreement	Dim - Currency
Purchase Agreement	Dim - Currency
Purchase Agreement	Dim - Date Gregorian Calendar
Purchase Agreement	Dim - Date Gregorian Calendar
Purchase Agreement	Dim - Item Category Hierarchy
Purchase Agreement	Dim - Item Category Hierarchy
Purchase Agreement	Dim - Ledger
Purchase Agreement	Dim - Ledger
Purchase Agreement	Dim - Legal Entity
Purchase Agreement	Dim - Legal Entity
Purchase Agreement	Dim - PRC - Purchase Buyer
Purchase Agreement	Dim - PRC - Purchase Buyer
Purchase Agreement	Dim - Supplier
Purchase Agreement	Dim - Supplier
Purchase Agreement	Dim - Supplier Sites
Purchase Agreement	Dim - Supplier Sites
Purchase Agreement	Dim - Unit of Measure

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Module	Dimension
Purchase Agreement	Dim - Unit of Measure
Purchase Order	Dim - Balancing Segment
Purchase Order	Dim - Balancing Segment
Purchase Order	Dim - Balancing Segment Hierarchy
Purchase Order	Dim - Balancing Segment Hierarchy
Purchase Order	Dim - Business Unit
Purchase Order	Dim - Business Unit
Purchase Order	Dim - Cost Center
Purchase Order	Dim - Cost Center
Purchase Order	Dim - Cost Center Hierarchy
Purchase Order	Dim - Cost Center Hierarchy
Purchase Order	Dim - Currency
Purchase Order	Dim - Currency
Purchase Order	Dim - Date Fiscal Calendar
Purchase Order	Dim - Date Fiscal Calendar
Purchase Order	Dim - Date Gregorian Calendar
Purchase Order	Dim - Date Gregorian Calendar
Purchase Order	Dim - Expenditure Type
Purchase Order	Dim - Expenditure Type
Purchase Order	Dim - GL Account
Purchase Order	Dim - GL Account
Purchase Order	Dim - GL Segment1
Purchase Order	Dim - GL Segment1
Purchase Order	Dim - GL Segment1 Hierarchy
Purchase Order	Dim - GL Segment1 Hierarchy
Purchase Order	Dim - GL Segment10
Purchase Order	Dim - GL Segment10
Purchase Order	Dim - GL Segment10 Hierarchy
Purchase Order	Dim - GL Segment10 Hierarchy
Purchase Order	Dim - GL Segment2
Purchase Order	Dim - GL Segment2
Purchase Order	Dim - GL Segment2 Hierarchy
Purchase Order	Dim - GL Segment2 Hierarchy
Purchase Order	Dim - GL Segment3
Purchase Order	Dim - GL Segment3
Purchase Order	Dim - GL Segment3 Hierarchy
Purchase Order	Dim - GL Segment3 Hierarchy
Purchase Order	Dim - GL Segment4
Purchase Order	Dim - GL Segment4
Purchase Order	Dim - GL Segment4 Hierarchy
Purchase Order	Dim - GL Segment4 Hierarchy
Purchase Order	Dim - GL Segment5
Purchase Order	Dim - GL Segment5
Purchase Order	Dim - GL Segment5 Hierarchy
Purchase Order	Dim - GL Segment5 Hierarchy

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Module	Dimension
Purchase Order	Dim - GL Segment6
Purchase Order	Dim - GL Segment6
Purchase Order	Dim - GL Segment6 Hierarchy
Purchase Order	Dim - GL Segment6 Hierarchy
Purchase Order	Dim - GL Segment7
Purchase Order	Dim - GL Segment7
Purchase Order	Dim - GL Segment7 Hierarchy
Purchase Order	Dim - GL Segment7 Hierarchy
Purchase Order	Dim - GL Segment8
Purchase Order	Dim - GL Segment8
Purchase Order	Dim - GL Segment8 Hierarchy
Purchase Order	Dim - GL Segment8 Hierarchy
Purchase Order	Dim - GL Segment9
Purchase Order	Dim - GL Segment9
Purchase Order	Dim - GL Segment9 Hierarchy
Purchase Order	Dim - GL Segment9 Hierarchy
Purchase Order	Dim - Inventory Organization
Purchase Order	Dim - Inventory Organization
Purchase Order	Dim - Item Category Hierarchy
Purchase Order	Dim - Item Category Hierarchy
Purchase Order	Dim - Ledger
Purchase Order	Dim - Ledger
Purchase Order	Dim - Legal Entity
Purchase Order	Dim - Legal Entity
Purchase Order	Dim - Natural Account
Purchase Order	Dim - Natural Account
Purchase Order	Dim - Natural Account Hierarchy
Purchase Order	Dim - Natural Account Hierarchy
Purchase Order	Dim - PRC - Bill To Location
Purchase Order	Dim - PRC - Bill To Location
Purchase Order	Dim - PRC - Customer Deliver To Location
Purchase Order	Dim - PRC - Customer Deliver To Location
Purchase Order	Dim - PRC - Customer Ship To Location
Purchase Order	Dim - PRC - Customer Ship To Location
Purchase Order	Dim - PRC - Deliver To Location
Purchase Order	Dim - PRC - Deliver To Location
Purchase Order	Dim - PRC - Purchase Buyer
Purchase Order	Dim - PRC - Purchase Buyer
Purchase Order	Dim - PRC - Ship To Location
Purchase Order	Dim - PRC - Ship To Location
Purchase Order	Dim - Project
Purchase Order	Dim - Project
Purchase Order	Dim - Supplier
Purchase Order	Dim - Supplier
Purchase Order	Dim - Supplier Sites

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Module	Dimension
Purchase Order	Dim - Supplier Sites
Purchase Order	Dim - Task
Purchase Order	Dim - Task
Purchase Order	Dim - Unit of Measure
Purchase Order	Dim - Unit of Measure
Purchase Receipt	Dim - Business Unit
Purchase Receipt	Dim - Business Unit
Purchase Receipt	Dim - Currency
Purchase Receipt	Dim - Currency
Purchase Receipt	Dim - Date Fiscal Calendar
Purchase Receipt	Dim - Date Fiscal Calendar
Purchase Receipt	Dim - Date Gregorian Calendar
Purchase Receipt	Dim - Date Gregorian Calendar
Purchase Receipt	Dim - Inventory Organization
Purchase Receipt	Dim - Inventory Organization
Purchase Receipt	Dim - Item Category Hierarchy
Purchase Receipt	Dim - Item Category Hierarchy
Purchase Receipt	Dim - Ledger
Purchase Receipt	Dim - Ledger
Purchase Receipt	Dim - PRC - Customer Ship To Location
Purchase Receipt	Dim - PRC - Customer Ship To Location
Purchase Receipt	Dim - PRC - Purchase Buyer
Purchase Receipt	Dim - PRC - Purchase Buyer
Purchase Receipt	Dim - PRC - Ship To Location
Purchase Receipt	Dim - PRC - Ship To Location
Purchase Receipt	Dim - Supplier
Purchase Receipt	Dim - Supplier
Purchase Receipt	Dim - Supplier Sites
Purchase Receipt	Dim - Supplier Sites
Purchase Receipt	Dim - Unit of Measure
Purchase Receipt	Dim - Unit of Measure
Requisition	Dim - Balancing Segment
Requisition	Dim - Balancing Segment
Requisition	Dim - Balancing Segment Hierarchy
Requisition	Dim - Balancing Segment Hierarchy
Requisition	Dim - Business Unit
Requisition	Dim - Business Unit
Requisition	Dim - Cost Center
Requisition	Dim - Cost Center
Requisition	Dim - Cost Center Hierarchy
Requisition	Dim - Cost Center Hierarchy
Requisition	Dim - Currency
Requisition	Dim - Currency
Requisition	Dim - Date Fiscal Calendar
Requisition	Dim - Date Fiscal Calendar

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Module	Dimension
Requisition	Dim - Date Gregorian Calendar
Requisition	Dim - Date Gregorian Calendar
Requisition	Dim - Expenditure Type
Requisition	Dim - Expenditure Type
Requisition	Dim - GL Account
Requisition	Dim - GL Account
Requisition	Dim - GL Segment1
Requisition	Dim - GL Segment1
Requisition	Dim - GL Segment1 Hierarchy
Requisition	Dim - GL Segment1 Hierarchy
Requisition	Dim - GL Segment10
Requisition	Dim - GL Segment10
Requisition	Dim - GL Segment10 Hierarchy
Requisition	Dim - GL Segment10 Hierarchy
Requisition	Dim - GL Segment2
Requisition	Dim - GL Segment2
Requisition	Dim - GL Segment2 Hierarchy
Requisition	Dim - GL Segment2 Hierarchy
Requisition	Dim - GL Segment3
Requisition	Dim - GL Segment3
Requisition	Dim - GL Segment3 Hierarchy
Requisition	Dim - GL Segment3 Hierarchy
Requisition	Dim - GL Segment4
Requisition	Dim - GL Segment4
Requisition	Dim - GL Segment4 Hierarchy
Requisition	Dim - GL Segment4 Hierarchy
Requisition	Dim - GL Segment5
Requisition	Dim - GL Segment5
Requisition	Dim - GL Segment5 Hierarchy
Requisition	Dim - GL Segment5 Hierarchy
Requisition	Dim - GL Segment6
Requisition	Dim - GL Segment6
Requisition	Dim - GL Segment6 Hierarchy
Requisition	Dim - GL Segment6 Hierarchy
Requisition	Dim - GL Segment7
Requisition	Dim - GL Segment7
Requisition	Dim - GL Segment7 Hierarchy
Requisition	Dim - GL Segment7 Hierarchy
Requisition	Dim - GL Segment8
Requisition	Dim - GL Segment8
Requisition	Dim - GL Segment8 Hierarchy
Requisition	Dim - GL Segment8 Hierarchy
Requisition	Dim - GL Segment9
Requisition	Dim - GL Segment9
Requisition	Dim - GL Segment9 Hierarchy

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Module	Dimension
Requisition	Dim - GL Segment9 Hierarchy
Requisition	Dim - Inventory Organization
Requisition	Dim - Inventory Organization
Requisition	Dim - Item Category Hierarchy
Requisition	Dim - Item Category Hierarchy
Requisition	Dim - Ledger
Requisition	Dim - Ledger
Requisition	Dim - Natural Account
Requisition	Dim - Natural Account
Requisition	Dim - Natural Account Hierarchy
Requisition	Dim - Natural Account Hierarchy
Requisition	Dim - PRC - Customer Deliver To Location
Requisition	Dim - PRC - Customer Deliver To Location
Requisition	Dim - PRC - Deliver To Location
Requisition	Dim - PRC - Deliver To Location
Requisition	Dim - PRC - Purchase Buyer
Requisition	Dim - PRC - Purchase Buyer
Requisition	Dim - Project
Requisition	Dim - Project
Requisition	Dim - Supplier
Requisition	Dim - Supplier
Requisition	Dim - Supplier Sites
Requisition	Dim - Supplier Sites
Requisition	Dim - Task
Requisition	Dim - Task
Requisition	Dim - Unit of Measure
Requisition	Dim - Unit of Measure
Salary Basis	Dim - Currency
Salary Basis	Dim - Date Enterprise Calendar
Salary Basis	Dim - Date Gregorian Calendar
Salary Basis	Dim - Department
Salary Basis	Dim - Job
Salary Basis	Dim - Legal Employer
Salary Basis	Dim - Reporting Establishment
Salary Basis	Dim - Worker
Sales CPQ Integrated Analytics	Dim - Business Unit
Sales CPQ Integrated Analytics	Dim - Currency
Sales CPQ Integrated Analytics	Dim - Customer Sold To
Sales Pipeline	Dim - Business Unit
Sales Pipeline	Dim - Currency
Sales Pipeline	Dim - Customer Sold To
Sales Pipeline Snapshot	Dim - Business Unit
Sales Pipeline Snapshot	Dim - Currency
Sales Pipeline Snapshot	Dim - Customer Sold To
Subscription Management Analytics	Dim - Business Unit

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Module	Dimension
Subscription Management Analytics	Dim - Currency
Subscription Management Analytics	Dim - Customer Sold To
Succession Management	Dim - Date Enterprise Calendar
Succession Management	Dim - Date Gregorian Calendar
Succession Management	Dim - Department
Succession Management	Dim - Job
Succession Management	Dim - Legal Employer
Succession Management	Dim - Reporting Establishment
Succession Management	Dim - Worker
Talent Acquisition	Dim - Date Enterprise Calendar
Talent Acquisition	Dim - Date Gregorian Calendar
Talent Acquisition	Dim - Department
Talent Acquisition	Dim - Job
Talent Acquisition	Dim - Legal Employer
Talent Acquisition	Dim - Reporting Establishment
Talent Acquisition	Dim - Worker
Talent Profile	Dim - Date Enterprise Calendar
Talent Profile	Dim - Date Gregorian Calendar
Talent Profile	Dim - Department
Talent Profile	Dim - Job
Talent Profile	Dim - Legal Employer
Talent Profile	Dim - Reporting Establishment
Talent Profile	Dim - Worker
Talent Review	Dim - Date Enterprise Calendar
Talent Review	Dim - Date Gregorian Calendar
Talent Review	Dim - Department
Talent Review	Dim - Job
Talent Review	Dim - Legal Employer
Talent Review	Dim - Reporting Establishment
Talent Review	Dim - Worker
Time and Labor	Dim - Date Enterprise Calendar
Time and Labor	Dim - Date Gregorian Calendar
Time and Labor	Dim - Department
Time and Labor	Dim - Expenditure Type
Time and Labor	Dim - Job
Time and Labor	Dim - Legal Employer
Time and Labor	Dim - Project
Time and Labor	Dim - Project Unit
Time and Labor	Dim - Reporting Establishment
Time and Labor	Dim - Task
Time and Labor	Dim - Worker
Workforce Compensation	Dim - Currency
Workforce Compensation	Dim - Date Enterprise Calendar
Workforce Compensation	Dim - Date Gregorian Calendar
Workforce Compensation	Dim - Department

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Module	Dimension
Workforce Compensation	Dim - Job
Workforce Compensation	Dim - Legal Employer
Workforce Compensation	Dim - Reporting Establishment
Workforce Compensation	Dim - Worker
Workforce Management	Dim - Date Enterprise Calendar
Workforce Management	Dim - Date Gregorian Calendar
Workforce Management	Dim - Department
Workforce Management	Dim - Job
Workforce Management	Dim - Legal Employer
Workforce Management	Dim - Reporting Establishment
Workforce Management	Dim - Worker

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