Oracle Financial Services

Asset Liability Management Cloud User Guide



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6 Technical Documents

1
Getting Started

This section includes the following topics:

- Oracle Cloud is the industry's broadest and most integrated cloud provider, with deployment options ranging from the public cloud to your data center. Oracle Cloud offers best-in-class services across Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS).
  For more information, see Get Started with Cloud Service
- Oracle Financial Services Asset Liability Management Cloud Service(OFS ALMCS), helps financial services institutions measure and monitor Interest Rate Risk, Liquidity Risk, and Foreign Currency Risk. This solution measures and models every loan, deposit, investment, and portfolio individually, using both deterministic and stochastic methods. OFS ALM is a nextgeneration solution fully integrated with Oracle's Financial Services Analytical Applications and shares a common account level relational data model.
  For more information, see Asset Liability Management .
- Use the Admin Console to perform System Configuration and Identity Management. It is a single point of access to manage identity functions and view administrative features such as Metering, Audit Trail Report and other miscellaneous configuration details in the Profitability and Balance Sheet Management Cloud Service (PBSMCS).
  For more information, see Introduction to Admin Console.

1.1 Getting Started with Oracle Cloud

This chapter introduces to the Oracle Cloud, Users and Roles, User Groups, User Mangement, and Session Time Out configuation.

Topics:

- Welcome to Oracle Cloud
- Users and Roles
- User Groups
- User Management
- Configuring Session Timeout

1.1.1 Welcome to Oracle Cloud

Oracle Cloud is the industry's broadest and most integrated cloud provider, with deployment options ranging from the public cloud to your data center.

Oracle Cloud offers best-in-class services across Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS).

1.1.1.1 About Oracle Cloud

Oracle Cloud is one of the few cloud providers that can offer a complete set of cloud services to meet all your enterprise computing needs.

Use Oracle Infrastructure as a Service (IaaS) offering to quickly set up the virtual machines, storage, and networking capabilities you need to run just about any kind of workload. Your infrastructure is managed, hosted, and supported by Oracle.

Use Oracle Platform as a Service offerings to provision ready-to-use environments for your enterprise IT and development teams, so they can build and deploy applications, based on proven Oracle databases and application servers.

Use Oracle Software as a Service (SaaS) offerings to run your business from the Cloud. Oracle offers cloud-based solutions for Human Capital Management, Enterprise Resource Planning, Supply Chain Management, and many other applications, all managed, hosted, and supported by Oracle.

1.1.1.2 Supported Web Browsers

Oracle Financial Services Cloud Services support the latest version of the following major browsers:

- Google Chrome
- Microsoft Edge
- Mozilla Firefox

For more details, see Oracle Software Web Browser Support Policy.

When sharing a link to a document or folder, users of Microsoft Edge need to use the Show Link button and copy the link shown in the dialog.

1.1.1.3 Order Oracle Cloud Applications

You can order Oracle Cloud Applications (Software as a Service) offerings by contacting Oracle Sales. After your order is processed, you can then activate your services.

To order a subscription to Oracle Cloud Applications:

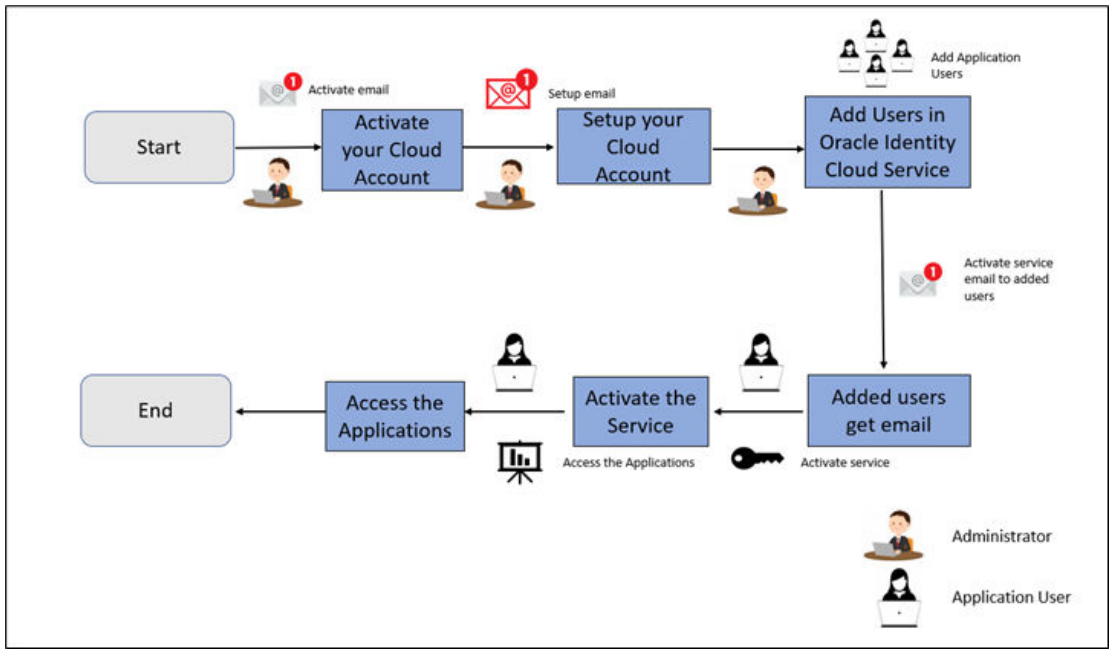
1. Go to the Oracle Financial Services Risk and Finance solutions page.
2. Scroll down and select the Cloud Service that you are subscribed to. For example, **Profitability Management** or **Cash Flow Engine**, or **Climate Change Analytics**.
3. Review the features and capabilities of the service and read the Datasheet.
4. When you are ready to order, scroll up and click **Request a Demo**.
5. You can either write an email or click **Request Now** to receive a call from Sales.
6. Enter your **Business email**, select the confirmation check box, and click **Continue**.
7. Provide a description of your need and click **Request Now**.

Later, after you have worked with Oracle Sales to order the Oracle Cloud Application best suited to your requirements, you will receive an email, which contains a link you can use to activate the service you have ordered.
To know how to activate, see Create and Activate New Cloud Account.

1.1.2 Get Started with Cloud Service

To get started, you must activate the Cloud Service. After activating the Cloud Service, you can onboard Application Users to use the subscribed Cloud Services.

Figure 1-1 Illustration of the Cloud Subscription Workflow



This topic describes the set of actions that can be performed by:

- An **Administrator** to activate the Cloud Account and onboard Applications Users for the subscribed Cloud Services.
  - Create and Activate New Cloud Account
  - Access the Cloud Account
  - Access the Oracle Identity Cloud Service Console
- The **Application Users** to activate and use the Cloud Services that are provisioned by the Administrator.
  - Activate your Account as Application Users

1.1.2.1 Create and Activate New Cloud Account

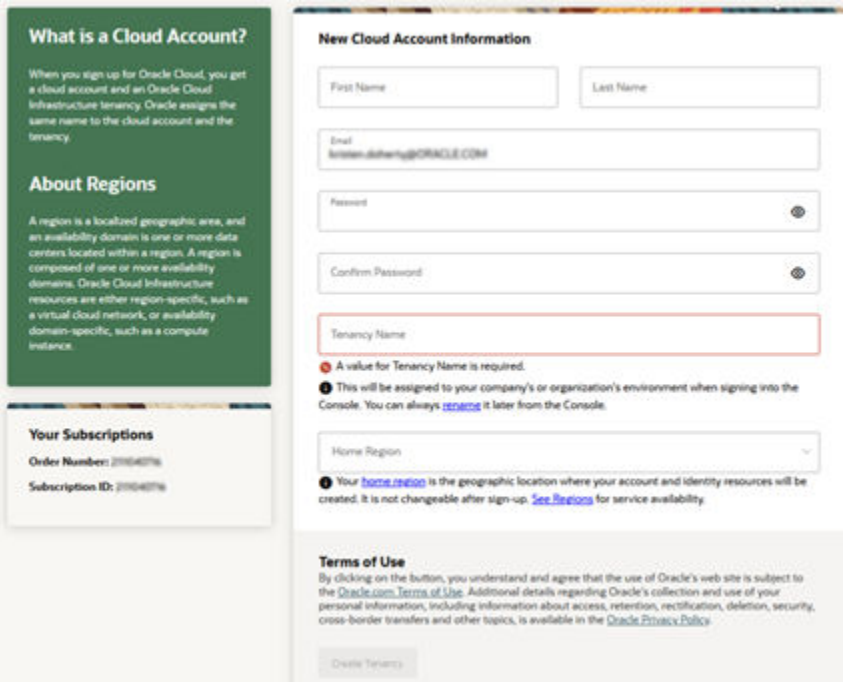
If you are a new Oracle Cloud Applications User, you will receive a Welcome to Oracle Cloud email that asks you to activate your Cloud Account. Follow the instructions in the email to create and activate your new Cloud Account.

You will then receive a follow-up email with the information you need to sign in and start using your Cloud Applications.

As an Administrator, to create and activate your new Cloud Account, perform the following steps:

1. Click **Create New Cloud Account** in the email.
2. Complete the **New Cloud Account Information** to sign up.

Figure 1-2 New Cloud Account Information page



3. Enter the following details:
   - **First Name** and the **Last Name**.
   - **Email**: Provide the same email address which you had given to receive the Welcome email. Instructions to log into your new Oracle Cloud Account will be sent to this email address.
   - **Password** to access the New Cloud Account.
     Re-enter the Password for confirmation. Make a note of the credentials. The same is required to log in after receiving the Activation email.
   - **Tenancy Name**: New Tenancy name to be associated with the Cloud Account.
   - **Home Region**: Select your Home Region, where the Identity Resources and Account are located. Check the service availability before selecting the Home Region.

4. Click **Create Tenancy**.
5. The **New Cloud Creation Confirmation** screen is displayed.

   After successful activation, you'll receive a **Setup Complete** email.

1.1.2.1.1 Add to an Existing Cloud Account

As an Administrator, if you already own a Cloud Account and need to use the another Cloud Service, perform the following steps:

1. In the Welcome email, click **Add** to existing cloud account option.
2. Perform the steps as mentioned in the Access the Oracle Identity Cloud Service Console section.

1.1.2.2 Access the Cloud Account

As an Administrator, to access the Cloud Account:

1. In the **Setup Complete** email, click **Sign In**.
2. Enter the Username and Password to access the **Oracle Cloud Console URL**. Use the same Username and Password that you provided during activation setup.
3. Reset the Password.
4. Re log in to **Oracle Cloud Infrastructure Classic Console** using the new Password.
5. Navigate to the **Oracle Cloud Infrastructure Classic Console** where the Application URLs are displayed.

1.1.2.3 Create an Environment

After logging into the Oracle Cloud Infrastructure Classic Console, you can create one or multiple instances that can be used by different user groups.

To create an instance, follow these steps:

1. Log into Oracle Cloud Infrastructure Classic Console.
   Under **My Applications**, you will see the list of environments (instances) provisioned for the one or multiple cloud applications. The following details are provided for each environment:
   - **Name**: The given name to the cloud application's instance.
   - **Type**: The type of the instance.
   - **Life cycle status**: The status of the instance.
   - **Region**: The region from where this instance is active.
   - **Application URL**: The URL to access the instance.
2. To create a new environment, click **Create environment**.
   This screen displays a list of Cloud Services to which the customer has subscribed and the Region from where these services are operated.

> **Note:**
>
> If **Region** selection drop-down is displayed, then you must select the appropriate Region as follows.
>
> - US East (Ashburn) for United States of America
> - Japan East (Tokyo) for Japan
> - Australia east (Sydney) for Australia

If you are not sure about the Region, contact My Oracle Support (MoS).

3. Under **Environment Details**, enter the following information:
   - **Name**: The name of the new environment or instance.
   - **Instance type**: Select from the following options:
     - **Production**: An environment that will be tagged as Production and can be used for Production activities.
     - **Non-production**: An environment that will be tagged as Non-production and which will be used for testing and development purposes. For example, a sandbox environment.
   - **Admin email**: The email ID with which you have logged into the Cloud Console. You can also enter a different email ID that needs to be part of the cloud tenancy. For more details, see Managing Users.
   - **Admin first name** and **Admin last name**: The first and last names of the Admin.
4. Click **Create**.
   The environment details are added to the Oracle Cloud Infrastructure Classic Console under the **Environments** tab (visible in the LHS menu). It may take a few hours for the State to change to Active. If there are any issues, you can raise a service ticket with My Oracle Support (MoS) .

After the environment becomes active i.e., the **State** column displays Active, you can click on name link to open the **Environment details** page, and view the details. Under **Environment Information**, click the Service console URL to create users and groups.

1.1.2.4 Access the Identity and Access Management

Oracle Cloud Infrastructure Identity and Access Management (IAM) provides identity and access management features such as authentication, single sign-on (SSO), and identity lifecycle management for Oracle Cloud as well as Oracle and non-Oracle applications, whether SaaS, cloud-hosted, or on-premises. Employees, business partners, and customers can access applications at any time, from anywhere, and on any device in a secure manner.

IAM integrates with existing identity stores, external identity providers, and applications across cloud and on-premises to facilitate easy access for end users. It provides the security platform for Oracle Cloud, which allows users to securely and easily access, develop, and deploy business applications such as Oracle Human Capital Management (HCM) and Oracle Sales Cloud, and platform services such as Oracle Java Cloud Service, Oracle Business Intelligence (BI) Cloud Service, and others.

Administrators and users can use IAM to help them effectively and securely create, manage, and use a cloud-based identity management environment without worrying about setting up any infrastructure or platform details.

To add users to your Cloud Services, you need to navigate to the **Oracle Identity and Access Management (IAM)** Console.

To access the **IAM** Console, perform the following steps:

1. Browse to Cloud.Oracle.com.

   The Oracle Cloud Infrastructure console is the console where the information about your cloud order is available. You need to access the service link from the console to start using your service.
2. Enter the **Cloud Account Name** and click **Next** to access the **IAM Console**.
3. Click **Change tenancy** option if you want to use a different tenancy.
4. Select the **Identity domain** from the drop-down list and click **Next**.

   The IAM login page is displayed.
5. Log in with your User Name and Password.

As an Administrator, you can create users to have different access rights to the Cloud Service.
For example, the IAM Administrator has superuser privileges for an Oracle Identity and Access Management Domain. This administrator can create users, groups, group memberships, and so on.

1.1.2.5 Activate Application User Account

After an Application User is provisioned by their Administrator, they will receive an Account Activation email.

As an Application User, perform the following steps to login and activate your account:

1. Open the email you received from Oracle Cloud.
2. Review the information about your service in the email.
3. Click **Activate Your Account**. You will be prompted to change your Password on the initial login.
4. Enter your new credentials in the **Reset Password** window to activate your account. After the Password is successfully reset, the **Congratulations** window is displayed.
5. Access the Application URL that your Application Administrator shared with you.
6. Enter your credentials to sign into your account. The Welcome page is displayed.

1.1.3 Users and Roles

Understand the following terms before you begin performing User Management.

- **Users**: Customers create users in Identity and Access Management (IAM) and can do the following:
  - Map them to existing groups
  - Create new groups to map them

  After users are created, they are synced from IAM to the Cloud Service.

- **Groups**: Groups are seeded (available out-of-the-box) by your Cloud Service. Customers can also create new groups in IAM. After groups are created, they are synced from IAM to the Cloud Service. Groups are mapped to roles using the Cloud Service by the same user that was created using IAM.
- **Roles**: Roles are seeded by the Cloud Service. Customers can also create new roles using the Cloud Service and assign existing functions to these new roles.
- **Functions**: Functions are seeded by the Cloud Service. Customers cannot create new functions; however, they can only use the existing functions.

1.1.3.1 View List of Application Users

The Users Summary Page shows the list of available users. You can view the details of a user and map the user to one or more User Groups.

Select the Username in the Users Summary page and then select Details to view the User ID and Username of the selected User.

To search for a specific User, type the first few letters of the Username that you want to search in the **Search** box and click **Search**.

The search result displays the names that consist of your search string in the list of available users.

You can use the navigation buttons at the bottom of this page to move around in different pages. Also, you can enter the number of entries to be listed on a single page in the **Records** box or use the buttons to increase or decrease the number of entries.

Also, you can enter the page number in the **View Bar Control** and jump to the page you want.

1.1.3.2 Create Application Users

After you sign in to your IAM console, one of your first tasks is to create additional user accounts. You should assign specific user groups to the user accounts that you are creating. There are seeded user groups available with the respective services, users must be mapped to one or more of the user groups, depending on the role that they perform.

For example, you can create a user for each member of your team. Each team member can then sign into the account with their credentials. You can also assign each user to specific user groups and apply specific security policies or roles to each group.
You can create the users and map the users to groups for your service. After creating the users, the users will receive a Welcome email. The users must activate their accounts and enter a new password to access the services.

To create users in the IAM Console, perform the following steps:

1. In the IAM Console, click the **Profile** icon and select **Identity domain** to add the Application Users.
2. In the **Identity Domain** left pane, click **Users** and select **Create user**.
3. Enter the following details:

   To have the user sign in with their email address:

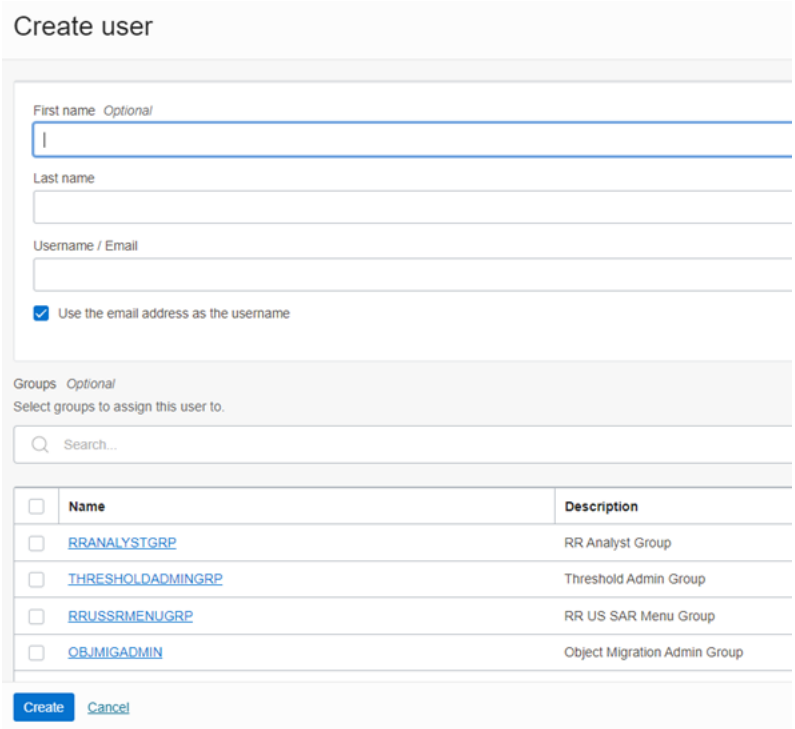
- Leave the **Use the email address as the username** check box selected.
- In the **Username / Email** field, enter the email address for the user account.

Or

To have the user sign in with their user name:

- Clear the **Use the email address as the username** check box.
- In the **First name** and **Last name** fields, enter the user name that the user is to use to sign in to the Console.

Figure 1-3 Add User Details



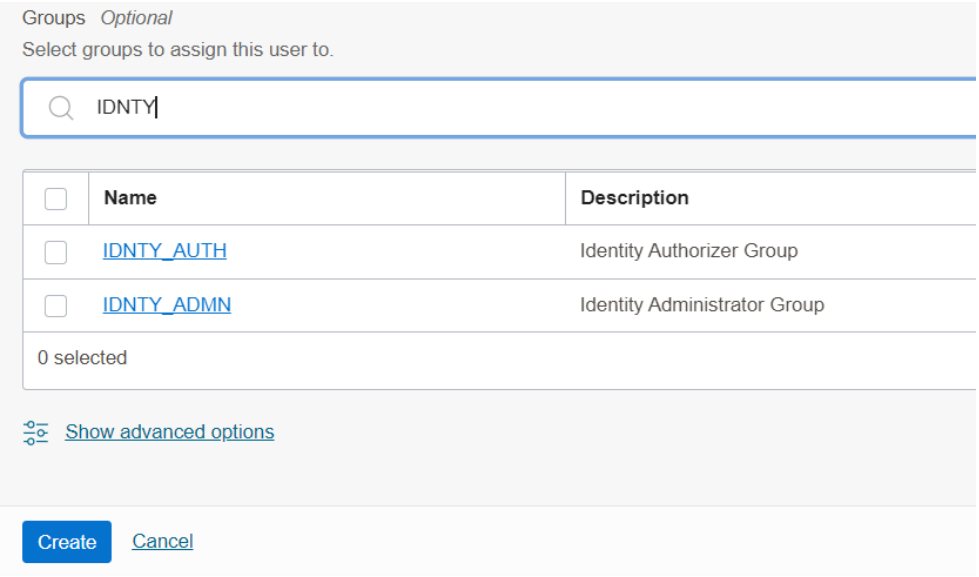
> **Note:**
>
> Ensure that you restrict the User Name to the following:
>
> a. Do not enter your Email ID as the Username and do not select the **Use the email address as the username** check box.
> b. Enter a maximum of 20 characters.
> c. Enter Alphanumeric Characters.
> d. Enter only Hyphen (-) and Underscore (_) Special Characters.

4. In the **Groups (Optional)** section, select the user groups according to your user-specific groups or access.

> **Note:**
>
> After a user sign in to the PBSM Cloud Service, the User to User-Group Mapping created in the **IAM Console** will onboard into the Master and Mapping Tables. Later, if you deselect (remove) a User from a Group in the **Assign User to Groups** Window after provisioning, ensure that you also unmap the User from the corresponding User- Group in the **Admin Console**. This is a mandatory step to complete the unmapping process.

5. To create an Identity Administrator or Authorizer user, assign the users to the following:
   - **IDNTY_ADMIN**: You can use this option to create an Administrator User.
   - **IDNTY_AUTH**: You can use this option to create an Authorizer User.

Figure 1-4 Assign Users to Groups Window



6. Click **Create**.

For Bulk User Creation, you can batch import User Accounts using a comma-separated values (.CSV) file.

1.1.3.3 Create a User Group

You can create groups to manage user access to applications and resources.
A group has no permissions until you do one of the following:

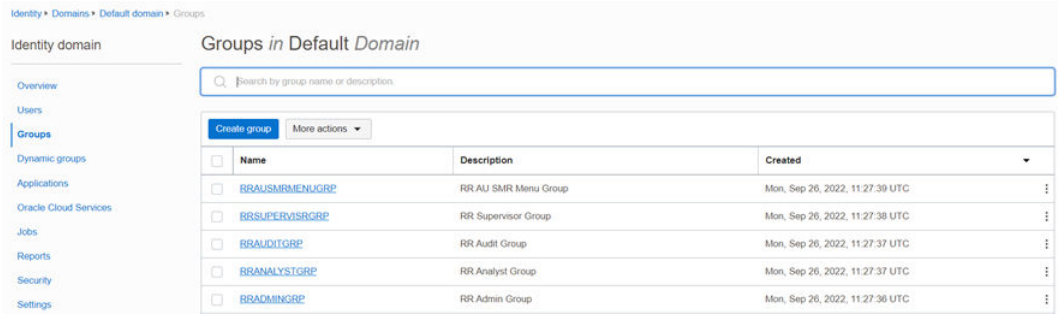
- Write at least one policy that gives that group permission to either the tenancy or a compartment. When writing the policy, you can specify the group by using either the unique name or the group's OCID.
- Assign the group to an application.

To create a User Group in IAM Console, perform the following steps:

1. In the IAM Console, click the **Profile** icon and select **Identity domain** to add a User Group.

2. In the Identity Domain left pane, click **Groups** and select **Create group**.

Figure 1-5 Identity Domain



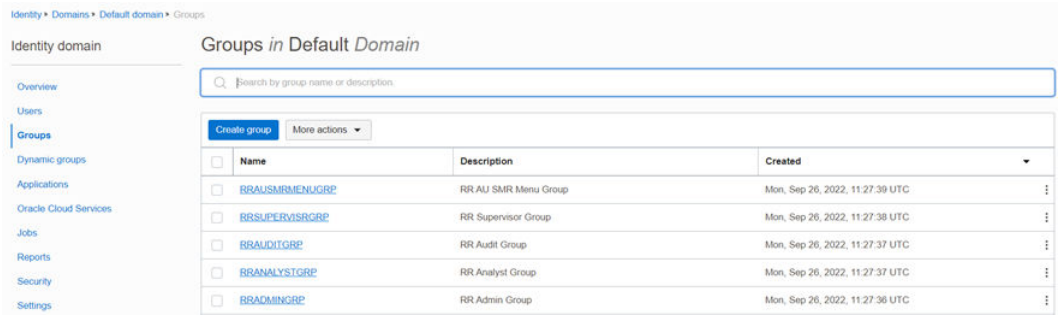
3. Enter the following details:
   - The name of the group. This field is mandatory.
   - Description for the group.
4. To allow users to request access to this group, select **User can request access**.
5. To add users to the group, select the check box for each user that you want to add to the group.
6. Click **Create**.

1.1.3.4 Add User to Group

To add a User to Group in IAM Console, perform the following steps:

1. In the IAM Console, click the **Profile** icon and select **Identity domain: Default** to add the User Group.
2. In the Identity Domain left pane, click **Groups** and select the group for which you want to add the users.

Figure 1-6 Groups in Default Domain



3. Click **Assign user to groups**.
4. To add users to the group, select the check box for each user that you want to add to the group.
5. Click **Add**.

1.1.3.5 Import Application Users

If you are an Administrator, you can batch import User Accounts using a Comma-separated Values (.CSV) file.

> **Note:**
>
> Before you can import user accounts, you must create a CSV file that is properly formatted for the import process.

To import user accounts, perform the following steps:

1. In the IAM Console left pane, click Users and select More Actions drop down and select Import Users.
2. In the **Import Users** dialog box, click **Browse** to locate and select the CSV file that contains the user accounts to import.

   > **Note:**
   >
   > Click **Download sample file** in the dialog box to download a sample file and carry out your accounts upload.

3. Verify that the path and name of the .CSV file that you selected appear in the **Select a file to import** field.
4. Click **Import**.

   > **Note:**
   >
   > If a user account is missing a required value, such as the user's first name, last name, or username, then Oracle Identity Cloud Service cannot import it. If Oracle Identity Cloud Service cannot import a User Account, then it evaluates the next account in the CSV file.

After Oracle Identity Cloud Service evaluates all User Accounts, the **Jobs** page displays the accounts you have imported. You can also get information related to the successful imports and imports that did not happen due to system errors.

1.1.4 User Groups

User Groups are seeded (available out-of-the-box) by the Cloud Service. Customers can also create new groups in IAM. After groups are created, they are synced from IAM to the Cloud Service. Groups are mapped to roles using the Cloud Service by the same user that was created using IAM.

1.1.4.1 Map Application with the User

To map the application to a User Group, log in to IAM and follow these steps:

1. Search for the **Domain**.
2. Select the **Default Domain** and then from the LHS menu, select **Oracle Cloud Services**.

   The screen displays the various Oracle Cloud Services.
3. Select the Cloud Services you are subscribed to (for example: **PBSMCS xxxx-prd** and **PBSMCS xxxx-nprd**).

   Where **Description** is mentioned as PBSM Cloud Service.
4. From the LHS menu, select **Users**.
5. Click **Assign Users**, and then select the user.
6. Click **Assign**.

1.1.4.2 Map Application with the Groups

To map the application to a User Group, log in to IAM and follow these steps:

1. Search for **Domain**.
2. Select the **Default Domain** and then from the LHS menu, select **Oracle Cloud Services**.

   The screen displays the various Oracle Cloud Services.
3. Select the Cloud Services you are subscribed to like, **PBSMCS xxxx-prd** and **PBSMCS xxxx-nprd**

   Where **Description** is mentioned as PBSM Cloud Service.
4. From the LHS menu, select **Groups**.
5. Click **Assign Groups**, and then select the relevant **Group**.
6. Click **Assign**.

1.1.4.3 Map Users to Groups

If you are an Administrator and want to map a User to a User Group, log in to IAM and follow these steps:

1. Select the **User Name** in the **Users Summary** page.
2. Select **Mapped Groups**.
3. Select the **User Group Name**.

> **Note:**
>
> To select a User Group, select the check-box corresponding to the User Group. To select all User Groups displayed on the page, select the check-box marked **Select All**.

4. Click **New Mapping** to map the User to the selected User Group.

   Or

   Click **Unmap** to remove the User Group-Role Mapping.

   If the Unmap action requires authorization, see the Unmap User from Group section for details.

> **Note:**
>
> User-Group mapping changes from IDCS will take some time to sync with your Cloud Service. If these changes are made during the active user session, then it will be reflected on the next login.
> After a user signs into the Cloud Service, the User to User-Group Mapping created in the IDCS Console will onboard into the Master and Mapping Tables. If you unmap a User from a Group in the Admin Console, navigate to the associated Console and open the Assign User to Groups Window. Deselect the User corresponding to the User Group and click **Finish**. This is a mandatory step to complete the Unmapping Process.
>
> For more information, refer to Unmap User from Group.

After you click New Mapping, the list of User Groups you can map the user to appears in the Available Groups Summary Page.

5. Select a **User Group**.

> **Note:**
>
> To select a User Group, select the check box corresponding to the User Group. To select all User Groups displayed on the page, select the check box marked Select All.
> If the logged-in user has both Administration and Authorization Entitlements, an Authorization View Toggle Button is available. Enable this button to complete the Authorization Process.

6. Click **Map**.

> **Note:**
>
> To select a User Group, select the check box corresponding to the User Group. To select all User Groups displayed on the page, select the check box marked Select All.
> If the logged-in user has both Administration and Authorization Entitlements, an Authorization View Toggle Button is available. Enable this button to complete the Authorization Process.

1.1.4.4 Unmap User from Groups

To authorize the unmapping of a User to a User Group, log in to IAM and follow these steps:

1. Click **Unmapped Groups**.
2. Click the User Group Name to select the User Group.
3. Click **Authorize** to authorize the unmapping.

Or

Click **Reject** to cancel the Authorization Request.

1.1.4.5 Create a User Group

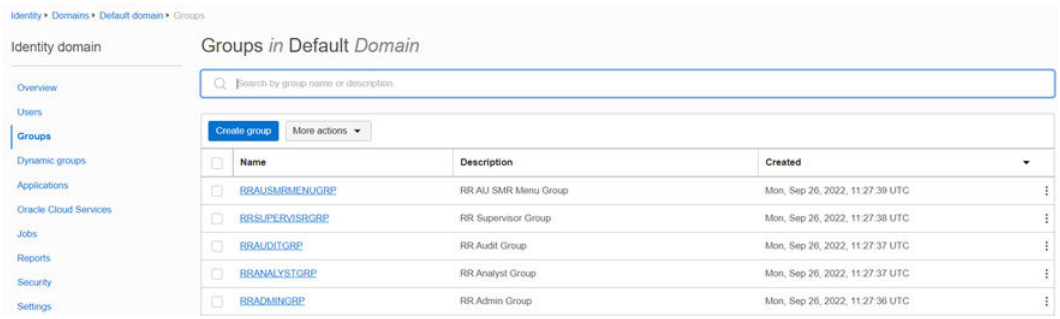
You can create groups to manage user access to applications and resources.
A group has no permissions until you do one of the following:

- Write at least one policy that gives that group permission to either the tenancy or a compartment. When writing the policy, you can specify the group by using either the unique name or the group's OCID.
- Assign the group to an application.

To create a User Group in IAM Console, perform the following steps:

1. In the IAM Console, click the **Profile** icon and select **Identity domain** to add a User Group.
2. In the Identity Domain left pane, click **Groups** and select **Create group**.

Figure 1-7 Identity Domain



3. Enter the following details:
   - The name of the group. This field is mandatory.
   - Description for the group.
4. To allow users to request access to this group, select **User can request access**.
5. To add users to the group, select the check box for each user that you want to add to the group.
6. Click **Create**.

1.1.5 User Management

During implementation, you prepare your Oracle Application's Cloud Service for the Service Users. The decisions made during this phase determine how you manage users by default. Most of these decisions can be overridden. However, for efficient User Management, Oracle recommends that you configure your environment to reflect both enterprise policy and support most or all users.

For more information, see the View List of Application Users and User Roles and Privileges.

1.1.5.1 Application Users

During implementation, you can use the Create User task to create Test Service Users. By default, this task creates a minimal person record and a user account. After implementation, you should use the Hire an Employee Task to create Service Users. The Create User Task is not recommended after the implementation is complete.

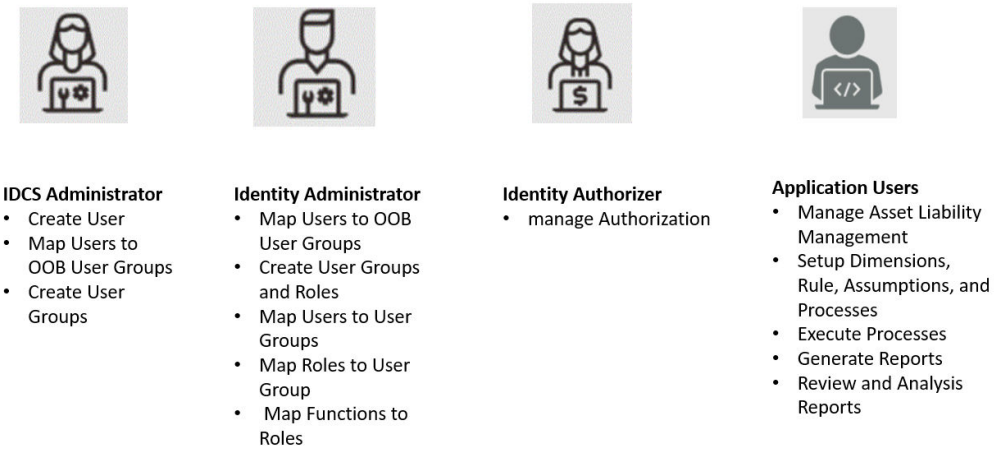
For more information, see Create Application Users.

1.1.5.1.1 User Roles and Privileges

Oracle Financial Services Asset Liability Management Service (ALMCS) Users are assigned roles through which they gain access to functions and data. Users can have any number of roles.

The following figure shows User Personas and the tasks they can perform:

Figure 1-8 User Roles and Privileges



1.1.5.1.1.1 Role Based Access Control

Role-based security in Oracle Financial Services **Asset Liability Management** Cloud Service Controls who can do what and to which data.

The following table provides examples of role-based access.

Table 1-1 Examples of Role Based Access

Role Assigned to a User	Functions which Users with this Role can Perform	Set of Data which Users with the Role can Access when performing the Function
Application Administrators	Perform Application Administrator activities	User Group with Administration Roles across all Service Features

Table 1-1 (Cont.) Examples of Role Based Access

Role Assigned to a User	Functions which Users with this Role can Perform	Set of Data which Users with the Role can Access when performing the Function
Business Users	Access to the Application to perform tasks	User Group with Business Tasks' Roles across all Service Features

1.1.5.1.1.2 User Groups and Activities

The following table provides the information on the User Groups and related activities.

User Groups	Activities
IDCS User Groups	
Identity Administrator	· View Reports · View Object Storage · View OAuth Credentials · Perform Identity and Access Management Operations
IDCS Administrator	· Create Users · Map Users to the Instance
Asset Liability Management User Groups	
ALM Admin Group	· Configure the Folders · Configure Application, Global and User Preferences

ALM Analyst Group	· Extend Data Model · Setup Dimension Management · Create/import members · Create/import hierarchy · Setup Interest rate curve · Setup Currency · Setup Economic Indicators · Setup Holiday Calendar · Setup Behavior Pattern · Setup Repricing Pattern · Setup Payment Pattern · Prepayment Rule · Prepayment Model · Forecast Rates · Discount Methods · Setup Filters · Asset Liability Management Process · Cash Flow Edits Process · Data File Specification · Data Loader · Create and Execute Batches · Generate Reports
ALM Auditor Group	· Review/Analyze Results · Review Process Logs · View reports
Scheduler Service User Groups	
Job Administrator Group	Manage jobs
Scheduler Administrator Group	Manage batches
BI User Groups	
ALM BI Data Steward	· Launch OAS from LHS · Allows users to create data visualizations, load data for data visualizations, and explore data visualizations
ALM BI Analyst	· Launch OAS from LHS · Allows users to create data visualizations, load data for data visualizations, and explore data visualizations
ALM BI Auditor	· Launch OAS from LHS · Allows users to create data visualizations
ALM BI LOB Head	· Launch OAS from LHS · Allows users to create data visualizations

In addition to this, Custom User Groups can be created and managed as per requirement.

1.1.5.1.1.3 User Roles and Activities

The following User Roles are seeded in the Asset Liability Management Cloud Service to facilitate the activities expected from the users mapped to the seeded User Groups:

ALM Administrator

ALM Analyst

ALM Auditor

ALM BI Data Steward

ALM BI Analyst

ALM BI Auditor

ALM BI LOB Head

In addition to this, Custom User Roles can be created and managed as per requirement.

The user roles ALM Administrator, ALM Analyst, and ALM Auditor are required to access the main application for view, edit and other purposes, based on the User Persona accessing the same. An Analyst User Persona can view all ALM screens and Edit-specific screens. Similarly, an Admin Persona can view and edit all ALM screens. These different Persona tasks are facilitated by the User Roles. Thus, these User Roles facilitates the accesses and activities for the corresponding User Groups. Thus, these three User Roles facilitates the accesses and activities for the corresponding User Groups that are mentioned in the following table.

The User Roles of - ALM BI Data Steward, ALM BI Analyst, ALM BI Auditor and ALM BI LOB Head - are seeded BI Roles to be used for the users to access the Analytics Menu in the ALM Application. These four roles are created to facilitate Analytics access for four different types of User Persona. These roles can be mapped to any User Group to provide the Analytics access to users under the User Group.

1.1.5.1.1.4 User Group and User Role Mapping

The following table lists the seeded mapping of User Groups to the User Roles.

Table 1-2 User Group and User Role Mapping

User Group	Mapped User Role
Asset Liability Management Application Administrator	Asset Liability Management Application Administrator
Asset Liability Management Application Analyst	Asset Liability Management Application Analyst
Asset Liability Management Application Auditor	Asset Liability Management Application Auditor

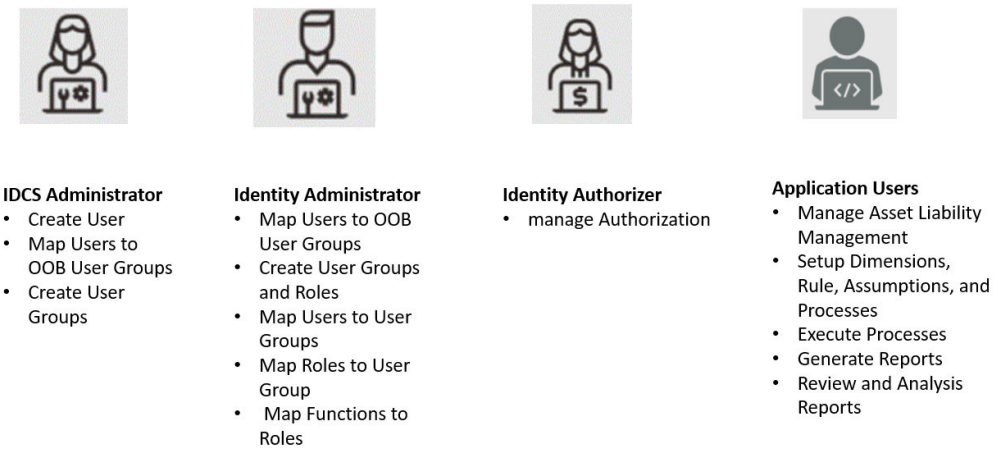
The BI User Roles of ALM BI Data Steward, ALM BI Analyst, ALM BI Auditor, ALM BI LOB Head are not mapped OOTB to any seeded User Group but can be mapped to any User Group to provide the Analytics access to users under than User Group. Customers can custom User Groups and map the seeded or Custom User Roles as it suites the requirement.

1.1.5.2 User Roles and Privileges

Oracle Financial Services Asset Liability Management Service (ALMCS) Users are assigned roles through which they gain access to functions and data. Users can have any number of roles.

The following figure shows User Personas and the tasks they can perform:

Figure 1-9 User Roles and Privileges



1.1.5.2.1 Role Based Access Control

Role-based security in Oracle Financial Services **Asset Liability Management** Cloud Service Controls who can do what and to which data.

The following table provides examples of role-based access.

Table 1-3 Examples of Role Based Access

Role Assigned to a User	Functions which Users with this Role can Perform	Set of Data which Users with the Role can Access when performing the Function
Application Administrators	Perform Application Administrator activities	User Group with Administration Roles across all Service Features
Business Users	Access to the Application to perform tasks	User Group with Business Tasks' Roles across all Service Features

1.1.5.2.2 User Groups and Activities

The following table provides the information on the User Groups and related activities.

User Groups	Activities
IDCS User Groups	
Identity Administrator	· View Reports · View Object Storage · View OAuth Credentials · Perform Identity and Access Management Operations
IDCS Administrator	· Create Users · Map Users to the Instance
Asset Liability Management User Groups	
ALM Admin Group	· Configure the Folders · Configure Application, Global and User Preferences
ALM Analyst Group	· Extend Data Model · Setup Dimension Management · Create/import members · Create/import hierarchy · Setup Interest rate curve · Setup Currency · Setup Economic Indicators · Setup Holiday Calendar · Setup Behavior Pattern · Setup Repricing Pattern · Setup Payment Pattern · Prepayment Rule · Prepayment Model · Forecast Rates · Discount Methods · Setup Filters · Asset Liability Management Process · Cash Flow Edits Process · Data File Specification · Data Loader · Create and Execute Batches · Generate Reports
ALM Auditor Group	· Review/Analyze Results · Review Process Logs · View reports
Scheduler Service User Groups	
Job Administrator Group	Manage jobs
Scheduler Administrator Group	Manage batches
BI User Groups	
ALM BI Data Steward	· Launch OAS from LHS · Allows users to create data visualizations, load data for data visualizations, and explore data visualizations

ALM BI Analyst	· Launch OAS from LHS · Allows users to create data visualizations, load data for data visualizations, and explore data visualizations
ALM BI Auditor	· Launch OAS from LHS · Allows users to create data visualizations
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In addition to this, Custom User Groups can be created and managed as per requirement.

1.1.5.2.3 User Roles and Activities

The following User Roles are seeded in the Asset Liability Management Cloud Service to facilitate the activities expected from the users mapped to the seeded User Groups:

ALM Administrator

ALM Analyst

ALM Auditor

ALM BI Data Steward

ALM BI Analyst

ALM BI Auditor

ALM BI LOB Head

In addition to this, Custom User Roles can be created and managed as per requirement.

The user roles ALM Administrator, ALM Analyst, and ALM Auditor are required to access the main application for view, edit and other purposes, based on the User Persona accessing the same. An Analyst User Persona can view all ALM screens and Edit-specific screens. Similarly, an Admin Persona can view and edit all ALM screens. These different Persona tasks are facilitated by the User Roles. Thus, these User Roles facilitates the accesses and activities for the corresponding User Groups. Thus, these three User Roles facilitates the accesses and activities for the corresponding User Groups that are mentioned in the following table.

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1.1.5.2.4 User Group and User Role Mapping

The following table lists the seeded mapping of User Groups to the User Roles.

Table 1-4 User Group and User Role Mapping

User Group	Mapped User Role
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Asset Liability Management Application Analyst	Asset Liability Management Application Analyst
Asset Liability Management Application Auditor	Asset Liability Management Application Auditor

The BI User Roles of ALM BI Data Steward, ALM BI Analyst, ALM BI Auditor, ALM BI LOB Head are not mapped OOTB to any seeded User Group but can be mapped to any User Group to provide the Analytics access to users under than User Group. Customers can custom User Groups and map the seeded or Custom User Roles as it suites the requirement.

1.1.6 Configuring Session Timeout

After you complete your tasks, you can sign out of your application. However, sometimes you might get automatically signed out due to session timeouts.

Let us understand how session timeouts work. When you sign in using your credentials, you're authenticated to use the application, and a session is established. During this session, you don't need to re-authenticate. But, for security purposes, your session is configured to be active for a predefined duration, which is called the session timeout period. Your sessions can expire due to various reasons such as leaving your application idle for a period longer than the timeout period. In such cases, you're automatically signed out of the application. Your timeout periods may vary on certain pages. For example, you may observe a longer timeout period on pages that automatically refresh or UIs that open in separate windows or tabs.

This table lists the various types of session timeouts you may experience. After the specified duration, your session expires, and you need to sign in again to continue your work.

Timeout Type	Description	Configurable	Timeout Duration
Session Lifetime Timeout	After you are authenticated in the application, if you are actively working on it, your session remains active for a predefined duration, referred to as the session lifetime timeout period. Your session ends after this period, even if you're using the application.	Yes	8 Hours (Default value)
Inactive Session Timeout	This type of timeout considers the duration you leave your application idle/inactive. After this duration, System automatically terminates the session, and you are signed out of the session.	No	60 Minutes

Timeout Type	Description	Configurable	Timeout Duration
Browser Inactivity Timeout	This type of timeout considers the duration you leave your browser idle. After this duration, your session is terminated by the System, which automatically	No	60 Minutes

1.1.6.1 How to configure Session Lifetime Timeout?

You can configure the Session Lifetime Timeout using your Identity Domain Settings in OCI Console. You need to have the Security Administrator Role mapped to you, to access and modify the settings.

To configure the session timeout:

1. Login with your Security Administrator Account.
2. Navigate to the Domain page. Click Settings and select Session Settings.
3. Specify the Session Duration under Session Limits. Enter the required value. By default, this is set to 480 Minutes.

Figure 1-10 Session Settings



1.2 Introduction to Oracle Asset Liability Management Cloud Service

Oracle Financial Services Asset Liability Management Cloud Service(OFS ALMCS), helps financial services institutions measure and monitor Interest Rate Risk, Liquidity Risk, and Foreign Currency Risk. This solution measures and models every loan, deposit, investment, and portfolio individually, using both deterministic and stochastic methods. OFS ALM is a next generation solution fully integrated with Oracle's Financial Services Analytical Applications and shares a common account level relational data model. With this versatile forecasting tool, powerful analytical functions can be modeled for every instrument, including derivatives and embedded options. Modeling at the account level of detail (loan-by-loan and deposit-by-deposit) provides highly accurate modeling results. Flexible assumption rules and reporting structures support a wide range of analytical power.

1.2.1 Key Features

Oracle Financial Services ALMCS is designed to model balance sheets under a variety of rate environments. Oracle Financial Services ALM functionality uses several key concepts and has evolved from the continual iterations of building simulated management processes. The basis of Oracle Financial Services ALMCS functionality includes:

- A wealth of output information. OFS ALMCS calculates and stores a variety of financial risk indicators including, VaR, EaR and related probability distributions; static and dynamic market value, duration and convexity; static and dynamic Gaps based on both repricing and liquidity bucket definitions; income simulation capabilities.
- Rigorous Calculations. OFS ALMCS is designed to operate on transaction-level data, using Oracle's highly accessible and flexible financial services data model. Each account, as well as all forecasted new-business activity, is modeled independently on a daily cash flow basis.
- A flexible time horizon and free-form timing bucket increments for reporting are critical to meeting the wide range of forecasting requirements of financial institutions. Unconstrained chart of accounts definition is a basic requirement of effective modeling.
- A structured process for defining and controlling assumptions is critical to any successful modeling process.
- An unconstrained batching of scenarios, with flexible assumptions sets, is required to achieve an effective and efficient analytical process.

1.2.2 User Groups

Table 1-5 User Groups

User Group	Description
ALM Admin	Performs all functional and technical activities. Given to experts who need to create and administer applications and service components.
ALM Analyst	Can create and administer service components, such as assumptions, rules, analysis, dashboards, and reports. Enters data and runs analysis for dimension members to which they have access, also designs reports and other analytical outputs.
ALM Auditor	View and analyze data using various analytical features
For Reports ALM BI Data Steward ALM BI Analyst ALM BI Auditor ALM BI LOB Head	View and analyze reports

1.2.3 Guidelines for Working with ALM

This topic describes an approach to designing and building applications based on your Security Role and the tasks it enables you to perform.

For ALM Administrators

ALM Administrators can perform the following steps to set up ALM:

- Define the folders before creating the assumptions, rules, and processes.
- Extend the Data Model, if required, by registering placeholder columns and tables.

For ALM Analysts

ALM Administrators and Analyst Users of ALM can perform the following steps to set up an application:

- Activate one or multiple Currency
- Define dimensions (such as business dimensions, and so on) using Dimension Management to build the main objects within the application.
- Define Global, User, and Application Preferences
- Define the Interest Rates and Economic Indicators
- Create assumptions and rules.
- Define Cash Flow Edits Process and ALM Processes
- Load the data.
- Create and execute the batches
- Validate the ALM Application Structure to ensure that the application structure confirms to Validation Rules.
- Set up analysis views and other analytic tools so those with User and Viewer Roles can use them.
- Analysis the results.

For ALM Auditor

All users, including ALM Auditor, can do most of the following:

- View rules and assumptions setup in ALM.
- Analyze the Calculated Result Reports.
- Use the analytics features to track and report on ALMBI.

1.2.4 Launching Asset Liability Management

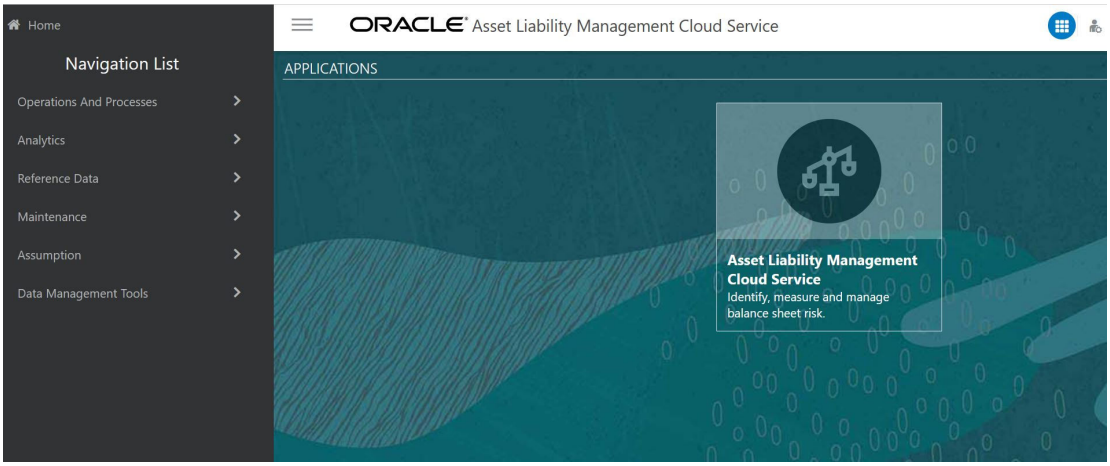
You can launch Asset Liability Management from the Web Browser.

To open Asset Liability Management, perform the steps as follows:

1. In the **Web browser**, click the link provided by Oracle.
2. Enter your user name and password.
   If requested, select an application.

   The password is case-sensitive.
3. Click **Sign In**.
   The **Asset Liability Management** Page is displayed.

Figure 1-11 Asset Liability Management Home Page



1.2.4.1 Asset Liability Management Home Page

When you log in, you see the Asset Liability Management Home page.

The Home page contains these main areas:

- **Figure 1-12 Navigator Screen**



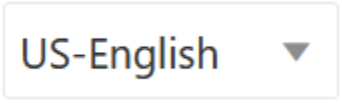
Navigator Screen to access menu items.

- **Figure 1-13 Admin Console**



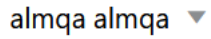
to Navigate to Admin Console.

- **Figure 1-14 Language of service**



Displays the language of service.

- **Figure 1-15 User Name**



The User Name menu with your user name in the header.

- **Figure 1-16 View Setup Information**



Click it to view setup information.

- **Figure 1-17 Last Login Date and Time**



Shows the details of Last Login Date and Time.

Click

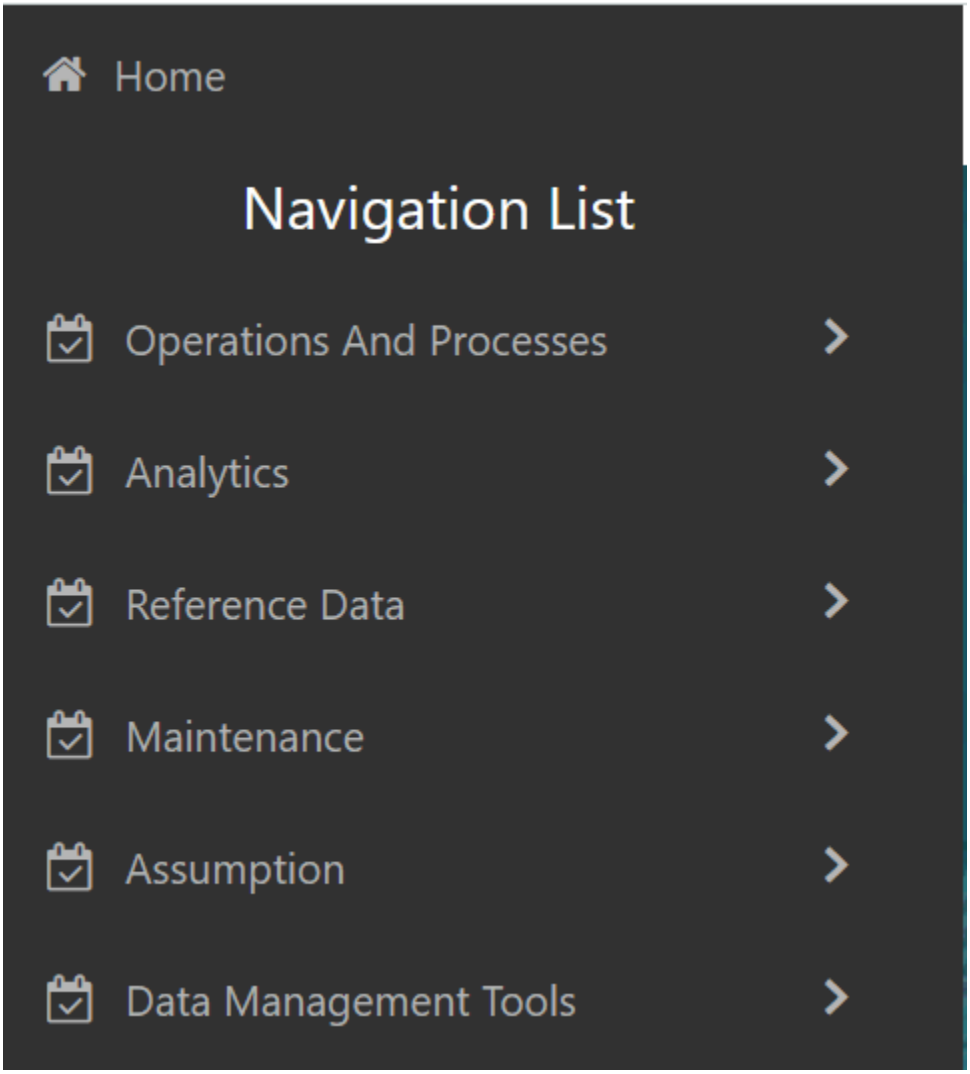
Figure 1-18 Navigation Screen



to display the Navigator Screen. This screen serves as a sitemap of the application features and displays links to all of the pages you can access. Use the Navigator Screen to navigate among the rules and processes required to define, review, and analyze the application, and to report results.

Figure 2: Navigation Path

Figure 1-19 Navigation Path



PBSM Asset Liability Management Cloud Service Navigation Paths are displayed in the List of Navigation Paths. Access all these pages through the ALM Administrator, ALM Auditor, or ALM Analyst Responsibility.

Table 1-6 List of Navigation Paths for Asset Liability Management Cloud Service

Page	Navigation Path
Static Deterministic Process	Select **Asset Liability Management Cloud Service** menu, select **Operations and Processes**, and then select **Static Deterministic Process**
Cash Flow Edits Process	Select **Asset Liability Management Cloud Service** menu, select **Operations and Processes**, and then select **Cash Flow Edits Process**

Table 1-6 (Cont.) List of Navigation Paths for Asset Liability Management Cloud Service

Page	Navigation Path
Scheduler	Select **Asset Liability Management Cloud Service** menu, select **Operations and Processes**, and then select **Scheduler**. Following sub-menus are available under Scheduler: Dashboard Define Batch Define Task Schedule Batch Monitor Batch
Report Home Page	Select **Asset Liability Management Cloud Service** menu, select **Analytics**, and then select **Home Page**
SQL Query Browser	Select **Asset Liability Management Cloud Service** menu, select **Analytics**, and then select **SQL Query Browser**
My Dashboard	Select **Asset Liability Management Cloud Service** menu, select **Analytics**, and then select **My Dashboard**
Economic Indicator	Select **Asset Liability Management Cloud Service** menu, select **Reference Data**, and then select **Economic Indicators**
Interest Rates	Select **Asset Liability Management Cloud Service** menu, select **Reference Data**, and then select **Interest Rates**.
Currency	Select **Asset Liability Management Cloud Service** menu, select **Reference Data**, and then select **Currency**.
Currency Rates	Select **Asset Liability Management Cloud Service** menu, select **Reference Data**, and then select **Currency Rates**
Dimension Management	Select **Asset Liability Management Cloud Service** menu, select **Reference Data**, and then select **Business Management**. Following sub-menus are available under Business Management: Attribute Member Hierarchy
Holiday Calendar	Select **Asset Liability Management Cloud Service** menu, select **Reference Data**, and then select **Holiday Calenda**r
Preferences	Select **Asset Liability Management Cloud Service** menu and select **Preferences**
Payment Pattern	Select Asset Liability Management Cloud Service menu, select Maintenance, and then select Payment Pattern.
Behavior Pattern	Select **Asset Liability Management Cloud Servic**e menu, select **Maintenanc**e, and then select **Behavior Pattern**.

Table 1-6 (Cont.) List of Navigation Paths for Asset Liability Management Cloud Service

Page	Navigation Path
Repricing Pattern	Select **Asset Liability Management Cloud Service** menu, select **Maintenance**, and then select **Repricing Patterns**.
Cash Flow Edits	Select **Asset Liability Management Cloud Service** menu, select **Maintenance**, and then select **Cash Flow Edits** .
Filter	Select **Asset Liability Management Cloud Service** menu, select **Maintenance**, and then select **Filter**.
Prepayment Rule	Select **Asset Liability Management Cloud Service** menu, select **Assumption**, and then select **Prepayment Rule**
Prepayment Models	Select **Asset Liability Management Cloud Service** menu, select **Assumption**, and then select **Prepayment Models**
Forecast Rates	Select **Asset Liability Management Cloud Service** menu, select **Assumption**, and then select **Forecast Rates**
Discount Methods	Select **Asset Liability Management Cloud Service** menu, select **Assumption**, and then select **Discount Methods**
Behavior Pattern Rule	Select Asset Liability Management Cloud Service menu, select Assumption, and then select Behavior Pattern Rule
Data Model Extension	Select **Asset Liability Management Cloud Service** menu, select **Data Management Tools**, and then select **Data Model Extension**
Data Masking	Select Asset Liability Management Cloud Service menu, select Data Management Tools, and then select Data Masking
Data File Administration	Select **Asset Liability Management Cloud Service** menu, select **Data Management Tools**, and then select **Data File Administration**. Following sub-menus are available under Data File Administration: Data File Specification File Upload and Download Data File History
Data Management Interface	Select Asset Liability Management Cloud Service menu, select Data Management Tools, and then select Data Management Interface. Following sub-menus are available under Data Management Interface: Data View Designer View

1.2.4.2 Common Icons

Use the icons to view and analyze data and related information for each features.

Table 1-7 Common Icons

Icon Name	Icon	Uses
Add	**Figure 1-20 Add icon** 	Click Add icon to build a new rule.
Refresh	**Figure 1-21 Refresh icon** 	Click to refresh the Summary Page.
Help	**Figure 1-22 Help icon** 	Click to view the Holiday Calendar Rule Help.
Multiple Delete	**Figure 1-23 Multiple Delete icon** 	Select one or more rules in the table and then click the (-) icon at the top right of the Summary Page to delete more than one rule at the same time.

Table 1-7 (Cont.) Common Icons

Icon Name	Icon	Uses
Search	**Figure 1-24 Search icon** 	To Search the rule(s)
List View	**Figure 1-25 List View** 	To view the Rule Summary Page items in List View.
Table View	**Figure 1-26 Table View** 	To view the Rule Summary Page items in Table View.
Ascending and Descending	**Figure 1-27 Ascending icon**  and **Figure 1-28 Descending icon** 	To sort the rules on Rule Summary Page.

Table 1-7 (Cont.) Common Icons

Icon Name	Icon	Uses
Action	**Figure 1-29 Action icon** 	Click to perform view various action options.
View/Edit	**Figure 1-30 Edit icon** 	Click in the Action column and select View/Edit to view or edit the contents of a rule in Read/ Write format. Depending on User Privileges, the rule will open in either View or Edit mode.
Copy or Save As	**Figure 1-31 Save As icon** 	Click in the Action column and select Save As to create a copy of an existing rule.
Delete	**Figure 1-32 Delete icon** 	Click in the Action column and select Delete to delete an existing rule.
Execute	**Figure 1-33 Execute icon** 	To execute a process

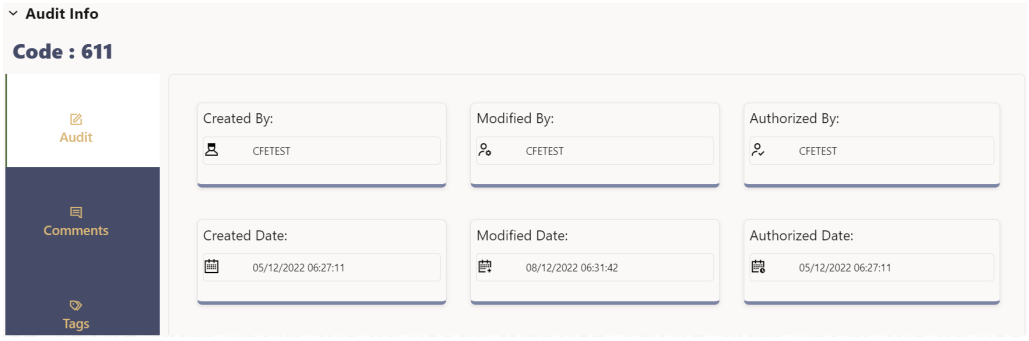
Table 1-7 (Cont.) Common Icons

Icon Name	Icon	Uses
Execution Details	**Figure 1-34 Execution Details icon** 	To view the execution details of the process.
Add New	**Figure 1-35 Add New icon** 	Click Add icon to add new items on Rule screen.
Add Multiple Rows	**Figure 1-36 Add Multiple Rows** 	Click Add Multiple Rows to add multiple rows at a time.
Add Row	**Figure 1-37 Add Row** 	This allows you to Add one Row at a time.

1.2.4.3 Common Feature Controls

PBSM Cloud Service includes many common feature controls.

Figure 1-38 Audit Info



Audit

The Audit Trail container is a standard footer container for every PBSM rule type. It displays Created By, Creation Date, Last Modified By, Modification Date, Authorized By, and Authorized Date on the Audit tab.

User Comments

The User Comments tab may be used to add comments to any rule, subject to a maximum of 4000 characters.

Tags

The Tags tab allows you to add a tag to the selected Rule ID.

1.2.5 Quick Tour

The following table provides a bird's eye view of the tasks and the order to execute these tasks using the application. Click the links to read details of each task. You can use the links on this page to help you immediately begin using ALM Cloud Service.

Table 1-8 Quick Tour

Order	Task	Who Does This?	Action
1	CPQ Order Placement	Tenant Admin	Subscribe to the application. You will receive a Welcome e-mail with the URL and temporary password.

Table 1-8 (Cont.) Quick Tour

Order	Task	Who Does This?	Action
2	Provision Users	Sys Admin	Configure the Security Management System (SMS) to create users, assign roles, and implement user authorization and authentication. For more information, see Getting Started. Review Standard User Groups and Roles Create Groups and Roles Create/Import Users Assign applications and groups to users Send notification to users.
3	Set up Application	Business User (ALM Admin)	Performs following tasks: Setup Folder Extend Data Model (if required) Turn on seeded fields Register table-column from UI Placeholder Dimension and Column Registration.

Table 1-8 (Cont.) Quick Tour

Order	Task	Who Does This?	Action
4	Configure Rules	Business User (ALM Analyst)	Configure following ALM Rules: Activate Currency Configure or load Dimension Members and Attribute Configure or Load Hierarchy Set global application and user preferences Configure Economic Indicator Configure Interest Rate Curve Configure Holiday Calendar Configure Repricing Pattern Configure Behavior Pattern Configure Prepayment Model Configure Prepayment Rule Configure Forecast Rates Configure Discount Methods Configure Filter Configure new Cash Flow Edit Rules Configure Static Deterministic Process Configure Cash Flow Edits Process
4	Create and Execute Jobs and Batches	Operator	Setup Technical Configuration for ALM Configure Batches for Data Loaders Configure Batches for Cash Flow Edits Process Configure Batches for Static Deterministic Process For more information, see Scheduler Service.

Table 1-8 (Cont.) Quick Tour

Order	Task	Who Does This?	Action
3	Load Data	Data Admin	Configure Data File Specifications Load Historical Interest Rate Curve Data from UI Load Historical Currency Exchange Rate Data from UI Load Historical Economic Indicator Data from UI Upload Dimension Data files to object store Run Dimension Data Loader Update Dimension Data from UI Upload Instrument Data files to object store Run Stage Instrument Data Loader For more information, see Data Loading.
5	Run Process Rules, generate and analyze Reports	Analyst	Review raw Data Analysis Report Correct/reload data files and rerun Stage Loader, if required Run Processing Instrument Data Loader Review Instrument Data Report Run Static Deterministic Process from process UI and/or Batch Review Cash Flow edit log and modify data, if required Run Static Deterministic Process from process UI and/or Batch Review Static Deterministic Process Log Review ALM Report

1.2.6 Glossary

As of Date

Date at which the data is current.

At-Risk Period

The time horizon for Value-at-Risk, such as the difference between the time in the future when we evaluate a portfolio loss and the As of Date.

Balance Sheet Planning

Balance Sheet Planning performs distributed budgeting of all balance sheet and income statement accounts.

Base Rates

Section in Oracle Cash Flow Engine Service that stores the interest rates associated with the data As-of-Date.

Basis Points

1/100th of a percent (abbreviated as "bps")

Cash Flow Instrument Table

An instrument table that contains all of the OFSAA Cash Flow Columns required by the cash flow engine.

Cash Flow Column

Column in an instrument table used by the OFSAA Cash Flow Engine to perform Cash Flow analysis on a record.

CPR

Constant Prepayment Rate (CPR) is a measure of an Annualized Prepayment Rate.

Credit Risk

The risk that a loan holder will be unable to repay any portion of the loan. Current Rate Risk Profit Component of funding Center Rate Risk Results attributed to current mismatches of assets and liabilities.

Data Filter Rule

Data Filters are used to define which data should go into a Processing Run.

De-annualize

To compute the monthly equivalent rate of an Annual Rate.

Duration

Duration is the rate of market value change with respect to discount rate changes. It is a measure of market value sensitivity: the lower the value, the less sensitive the market value to changes in interest rates.

Funding Center

Area in a financial institution that receives the transfer pricing charge and credit for funds.

Funds Transfer Pricing

A method for valuing all sources and uses of funds for a balance sheet.

General Ledger

The main data source that defines an institution's financial reality. The General Ledger reflects all accounting entries.

Grid

A logical grouping of cells often surrounded by scroll bars.

Hierarchy

Hierarchical structure for dimension members in OFS Applications (Examples: organizational and product type)

Historical Rates Table

PBSM repository for all historical actual interest rates.

Instrument

Synonymous with an account record or an individual contract.

Instrument Table

A type of table contained in the OFSAA database used to store account level information. Instrument Records Rows in the OFSAA database that carry transaction account level information (Example: deposit account by deposit account)

Interest Rate Code

User defined code to reference a yield curve or single rate index for historical analysis, transfer pricing, and interest rate forecasting purposes.

Last Repricing Date

Date the rate last changed for an adjustable rate instrument and the origination date for a fixed rate instrument.

Liquidity Premiums

A charge levied on a long-term instrument to compensate for illiquidity of the funds.

Log in

To access the programs and database of any OFSAA Application by providing a valid user name and password.

Market Price of Risk

In financial economics theory the Market Price of risk is a measure of inter-temporal risk-aversion of the aggregate investor; for example, a high market price of risk during some future period means that investors will be more risk-averse, and that rates for that term should be higher to compensate for this risk; in practical terms, the market price of risk is the "plug" that makes the risk-neutral rates price risk-free bonds correctly.

Market Value

In Monte Carlo, average of the (scenario specific) present values. In deterministic processing, it is the present value of the cash flows of the specific scenario.

Next Repricing Term

Repricing frequency for an adjustable rate instrument and the original term to maturity for a fixed rate instrument.

Profitability Management

Profitability Management assists customers in developing multiple levels of profitability (Example: organizational, product, customer, account profitability).

Prepayment

A reduction in the principal balance of a transaction record prior to the contracted schedule date.

Present Value

In Monte Carlo, sum of cash flows paid by a security along a particular rate scenario, discounted by the stochastic discount factor. In deterministic processing, the sum of the cash flows discounted by the deterministic discount factor.

PSA

A prepayment specification method established by the Public Securities Association, which relates the CPR to the age of that instrument.

Reconciliation

The process of comparing information from one data source to another

Reporting Currency

An active currency to which balances in other currencies are consolidated, often used for reporting.

Single Rate

An interest rate code with only one point defined (Examples: prime rate and 11th District Cost of Funds Index).

1.3 Admin Console

Use the Admin Console to perform System Configuration and Identity Management. It is a single point of access to manage identity functions and view administrative features such as Metering, Audit Trail Report and other miscellaneous configuration details in the Profitability and Balance Sheet Management Cloud Service (PBSMCS).

To access the Admin Console, the PBSM Cloud Administrator must have granted you administrative privileges by mapping your user account to the Identity Administrator and Identity Authorizer user groups. These user groups are seeded in Oracle Identity Cloud Service (IDCS).

1.3.1 Introduction to Admin Console

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When you access the Admin Console, you see the System Configuration and Identity Management tabs. Use these tabs to perform the following tasks:

1.3.1.1 Administrator Tasks

As an Administrator, use the Admin Console to perform the following tasks:

- View the Metering Report, Audit Trial Report, Object Storage, and Object Authentication (OAUTH) credential details in the System Configuration tab.
- Perform the Identity and Access Management operations in the Identity Management tab.

1.3.1.2 Authorizer Tasks

As an Authorizer, use the **Admin Console** to authorize the Identity and Access Management Operations in the **Identity Management** tab.

1.3.2 System Configuration

Using System Configuration, Administrators can view how many units of a service have been consumed. You can also view the following:

- The Audit Report to see what actions the users have performed in the application and when they have performed it
- The provisioned object storage details and the OAUTH authentication details.
- The production instance URL and the email ID of the login user.

The components are as follows:

- **Metering**: Click Metering to view the usage of services using the Metering Report.
- **Audit Trail Report**: Click **Audit Trail Report** to view the details of the user's login and logout details, the action they performed, the status of the action, and the date and time when the action was performed.
- **Component Details**: Click **Component Details** to view details such as the Object Storage, Pre-Authenticated Request (PAR) URL, and OAUTH authentication details.
- **Configurations**: Click **Configurations** to specify the instance name and the user or users who receive Emails related to operations tasks.

1.3.2.1 Metering

Use the **Metering** page to view the monthly unit usage of the number of transactions and the number of report types within the PBSM Cloud Service.

1.3.2.2 Component Details

Use the Component Details page to view the OCI Console, Object Storage Standard and Archive details, and OAUTH Authentication details.

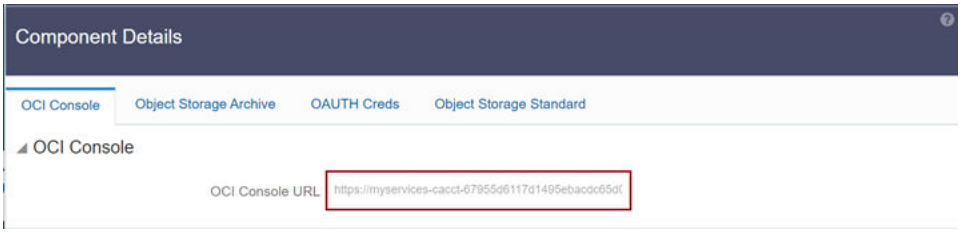
To access Component Details Window

1. Login to PBSM Admin Console.
2. Go to **System Configuration** tab, and click **Component Details** tile.

1.3.2.2.1 OCI Console

Click **OCI Console** tab to view and copy the OCI Console details.

Figure 1-39 OCI Console Page



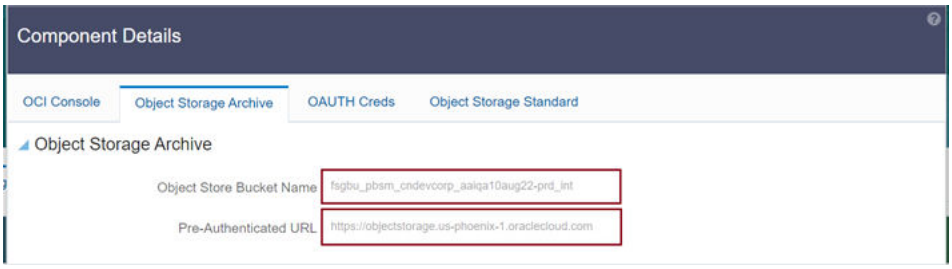
1.3.2.2.2 Object Storage Archive

When you provision an instance of the application, two buckets, a standard storage bucket and an archive storage bucket are automatically provisioned. The objects data that you want to load into the application for processing must be uploaded to the standard storage bucket.

Archive storage is used for storing objects which are not in use but must be retained and preserved for long periods of time. Objects are automatically moved from standard to archive storage, after 7 days.

Click **Object Storage Archive** Tab to view and copy the **Object Store Bucket Name** and the **Pre-Authenticated URL**.

Figure 1-40 Object Storage Archive Page



Field	Description
Object Store Bucket Name	The logical container in which objects are stored
Pre-Authenticated URL (PAR URL)	Request that enables you to access a bucket without providing any credentials.

1.3.2.2.3 OAUTH Creds

The OAUTH Creds is used for implementing authentication in cloud services.

Click OAUTH Creds tab to view and copy the OAUTH Client ID and OAUTH Client Secret details.

Figure 1-41 OAUTH Creds Page

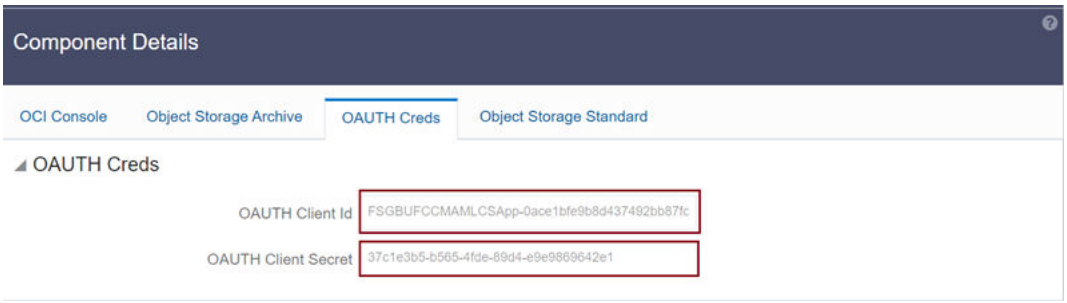


Table 1-9 Field Description

Field	Description
OAUTH Client ID	ID of the OAuth client used for OAuth authentication performed by IDCS while doing any API calls
OAUTH Client Secret	Password of the OAuth client secret used for OAuth authentication performed by IDCS while doing any API calls

1.3.2.2.4 Object Storage Standard

Object Storage Standard is used for storing objects which are currently in use and require fast, immediate, and frequent access.

Click Object Storage Standard Tab to view and copy the Object Store Bucket Name and the Pre-Authenticated URL.

Figure 1-42 Object Storage Standards Page

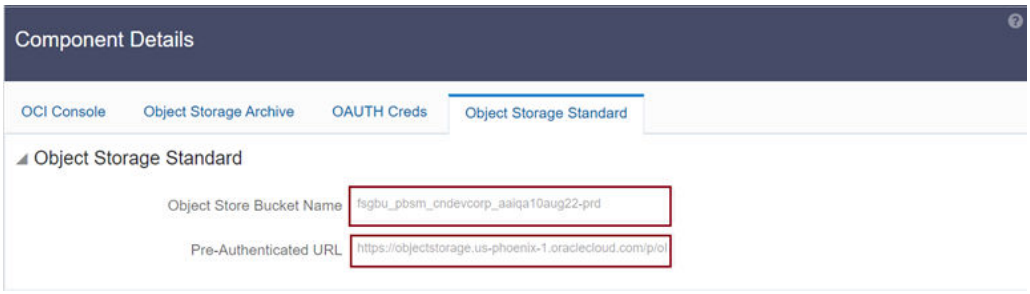


Table 1-10 Field Description

Field	Description
Object Store Bucket Name	The logical container in which objects are stored
Pre-Authenticated URL (PAR URL)	Request that enables you to access a bucket without providing any credentials.

1.3.2.3 Audit Trail Report

You can use Audit Trail Report to view details of the user's activities such as Login, Add Action, Status of the Action, and the Machine Name.

To generate an Audit Trail Report, follow these steps:

1. Login to PBSM Admin Console.
2. Go to **System Configuration** tab, and click **Audit Trail Report** tile.
   The **Audit Trail Report** page is displayed.

Figure 1-43 Audit Trail Report



3. Enter the following values and click Search to generate the Audit Trail Report for all users or a specific user.

Table 1-11 Audit Trail Report Filters

Field	Description
User Name	Enter or Search for a user name to view the report for the selected user.
Action	Select the Action from the actions. to generate a report for a specific action.
From Date	Select the start date for the report.
To Date	Select the end date for the report.
Action Detail	Enter the string to search and filter the audit trail report for a specific action.

Figure 1-44 OAUTH Creds Page

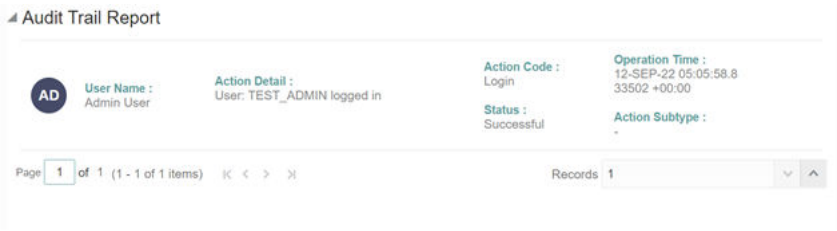


Table 1-12 Audit Trail Report Details

Field	Description
User Name	The user name selected in the User Name filter field.
Action Details	The action selected in the Action Detail filter field.
Action Code	The type of action performed by the user.
Status	The status of the action performed. The values are Successful or Failure.
Action Subtype	The sub type of the action.
Operation Time	The date and time of the action performed.

4. Click **Reset** to clear all values from the filter fields and enter new search criteria. The report filters are described in the following table:

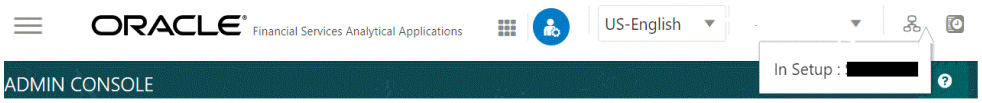
1.3.2.4 Configurations

Use the Configurations page to specify the values for the instance name and Email ID of the operations user.

To provide the values, follow these steps:

1. Enter the instance name in the Configurations page. For example, UAT, SIT, or PROD. You can provide alphanumeric characters and special characters such as hyphen (-) or underscore (_). The name you specify in this field is displayed when you click In Setup as shown in the following image:

Figure 1-45 Displayed Instance Name



This allows you to know the instance or setup you are working on at the moment, when you have multiple UI windows open simultaneously from different setups.

2. Enter one or more operations user's Email IDs in the Operations User Email-ID field of the Configurations window. The operations user receives Emails about any operations tasks such as batch or task failure. You can enter multiple email IDs separated by a comma (as comma-separated values).
3. Click **Save** after the changes.

1.3.2.5 Reports For Download

The Reports for Download tile in the Admin Console consists of a set of pre-defined and pre-configured reports that are available for download. You can use the functions in the interface such as filter and sort to segregate the data and drill down to the details of the reports. You can then investigate the information, analyze, and export the data in CSV format.

In the Admin Console, you can download reports from Reports for Download in the System Configuration tab.

1.3.2.5.1 Prerequisites

To use Reports for Download from the Admin Console, your user profile must be mapped to the Data Maintenance Admin group to access the Reports for Download menu.

1.3.2.5.2 Access Reports for Download

To access the Data View window, click **Reports for Download** in the **System Configuration** tab. The **Data Reporting - Data View Page** is displayed.

1.3.2.5.3 Data Reporting - Data View

You can view the list of reports available for download, from the Data Entry window. Use one of the following criteria to view various reports.

- To search reports, click the Search field to display the search criteria pop-up. Enter search terms in the Name, Description, or Created By fields, or use a combination of the fields, and click Search.
  The search result displays reports that match the criteria.
- To sort reports, click the Sort By drop-down and select from the options: Name, Description, or Created By.
  The reports are displayed in ascending order for the selected option.
- To view the report creation and modification details, click the More Options (three dots) icon of a report to display the pop-up with the details for the following:
  - **Created By** - Displays the User ID of the user who created the report.

- **Created Date** - Displays the date and time of the creation of the report.
- **Last Modified By** - Displays the User ID of the user who last modified the report.
- **Last Modified Date** - Displays the date and time of the last modification of the report.
- **Authorizer** - Displays the User ID of the authorizer who approved the report to be displayed in the window.
- **Authorizer Comments** - Displays the comments entered by the authorizer when approving the report to be displayed in the window.

- To view a report, mouse over the record, and the hidden menu appears. Click View from the menu.
  The details for the selected report are displayed in the Data Entry window.

1.3.2.5.4 View the Report Details

The Data Entry window is the interface where you can apply filter conditions (optional) on the reports and export the details.

You can apply the filter conditions (optional) to the reports in the Attributes Selection tab, and the results are displayed in the Data Preview tab from where you can export the report in the CSV format.

The procedure to view report details is described as follows:

1. In the **Data View** window, click **Attributes Selection**.
   The Attributes Selection tab displays the details for the database table name in View Name and the table columns in Attribute Name. Expand View Name to display the columns in Attribute Name.
2. Click **Apply**.
   The Data Preview tab displays the report details. The number of records displayed in the Data Preview tab is pre-configured in the system. However, you can export the details in the CSV format by clicking Download CSV.

1.3.2.5.5 Apply a Custom Filter to the Data View

In addition to the reports that you can view, you can also use the filter provided in the Data View window to custom filter the data in the reports for analysis purposes.

To apply a custom filter to the data view, follow these steps:

1. Click **Launch Filter** Condition to display the Filter Condition window.
2. Select **AND** or **OR** from the drop-down.
3. Select the required report column from **Select a Column**.
4. Select the required condition from **Select a Condition**.
5. Click **+ Condition** to add more conditions and click **+ Group** to add more groups.

   Repeat the selection procedure to add details. To remove a condition or group, click Remove.
6. Click **Apply** in the **Filter Condition** window to save the custom filter condition.
7. Click **Apply** in the **Attributes Selection** tab.

   The Data Preview tab displays the results of the Attributes filtered in the Attributes Selection tab. The number of records displayed in the preview is pre-configured in the

system. However, you can export the details in the CSV format by clicking Download CSV.

1.3.3 Identity Management

Using Identity Management, Administrators can manage fine-grained and coarse-grained entitlements that consist of fewer functions than fine-grained entitlements) entitlements. Authorizers can authorize the entitlement mappings. The components are as follows:

- **Users**: A user is a person who has access to and can perform specific actions based on the user group or groups they are mapped to. Before you can map a user to a user group, your Administrator must have created and authorized the user. After the user is authorized, they are added in the Users Summary page.

  Click **Users** to view the list of available users in the Users Summary page.
- **Groups**: Groups are a set of users that can perform specific activities. For example, the administrator role performs administrative activities. Any user who belongs to a specific user group can access the roles mapped to that user group.

  Click **Add** to add a user group or click **Groups** to view the list of user groups in the Groups Summary page.
- **Roles**: Roles are a set of functions grouped together and having specific privileges. Any user who belongs to a specific role can access functions mapped to the role. Click **Add** to add a role or click **Roles** to view the list of roles in the Roles Summary page.
- **Folders**: Folders are used to control access rights on defined list of objects. They are mapped to a specific Information Domain, Click **Folders** , to view the list of folders and edit the access rights, in the Folders Summary page.
- **Functions**: Functions enable users to perform a specific activity. Any user who belongs to a specific function can access the folders mapped to the function. Click **Functions** to view the list of functions in the Functions Summary page.

> **Note:**
>
> Only those user groups and roles which are authorized are displayed in the Groups Summary page and Roles Summary page, respectively.

1.3.3.1 Users Summary Page

The Users Summary page shows the list of available users. You can view the details of a user and map the user to one or more user groups.

To access Users Summary page, complete the following steps:

1. Click **Identity Management** tab in the **Admin Console** page.
2. Click the **Users** tile ( ).

The **Users Summary** page is displayed.

Figure 1-46 Users Summary Page



3. Select a specific User Name in the Users Summary page and then click **Details** to view the associated User ID and User Name.
4. Select a User name and click Mapped Groups to view the list of groups that are mapped to the particular user. For more information about mapped groups, refer to Mapped and Unmapped Groups.
   You can also Unmap an user from a specific group. For more information, refer to Mapped and Unmapped Groups.

To search for a specific user, type the first few letters of the user name that you want to search in the Search box and click Search. The search results display the names that consist of your search string in the list of available users.

At the bottom of the page, you can enter the number of entries that are available on a single page in the Records box. You can increase or decrease the number of entries that are displayed using the up and down arrows. To navigate between pages in the View bar, use the following buttons:

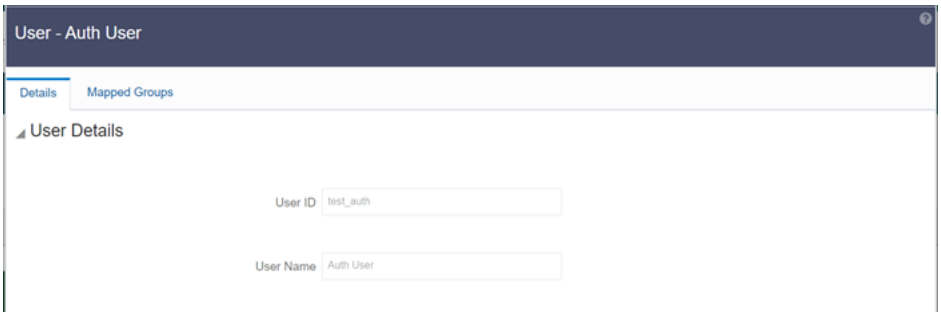
- Use the First page button to view the entries in the first page.
- Use the Previous page button to view the entries in the previous page.
- Use the Next page button to view the entries in the next page.
- Use the Last page button to view the entries in the last page.

You can also navigate to the desired page. To do this, enter the page number in the View bar control and press Enter.

1.3.3.1.1 User Details

Click a specific User listed in the User Summary page and click Details to view the User ID and the User name of that user.

Figure 1-47 User Details Page



1.3.3.1.2 Mapped and Unmapped Groups

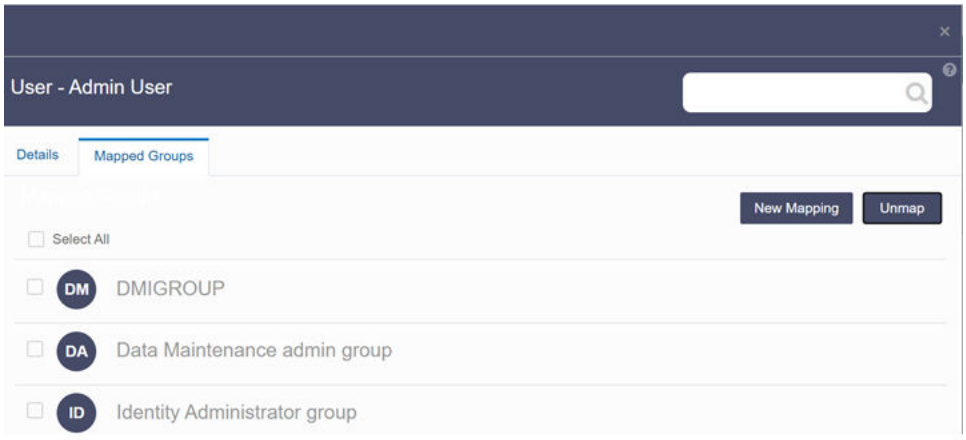
If you are an Administrator, you can map and unmap a user to a User group, from the **Users Summary** page.

1.3.3.1.2.1 Mapped Groups

Complete the following steps, to map an user to a User Group.

1. Select the **User name** in the **Users Summary** page.
2. Select **Mapped Groups**.
   The list of groups mapped to the specific user is displayed.

Figure 1-48 Mapped Groups



3. Click **New Mapping**.
   After you click New Mapping, the list of user groups you can map the user to appears in the **Available Groups** page.
4. Click **Map**.
   A confirmation message is displayed after successful mapping. The mapping will be completed after authorization.

If you are an Authorizer and want to authorize a mapping, follow these steps:

- In **Mapped Groups**, select the user group name.

- Click **Authorize** to authorize the user-user group mapping.
  Click **Reject** to cancel the authorization request.

1.3.3.1.2.2 Unmapped Groups

To unmap a user from a user group, complete the following steps.

1. Select the User name in the Users Summary page.
2. Select **Mapped Groups**.
   The list of groups mapped to the specific user is displayed.
3. Select the check box corresponding to a User Group or click Select All to select all the available User groups.
4. Click **Unmap**.
   A confirmation message is displayed after successful unmapping. The mapping will be completed after authorization.

If you are an authorizer and want to authorize a mapping, follow these steps:

1. In Mapped Groups, select the user group name.
2. Click **Authorize** to authorize the user-user group unmapping.
   Click **Reject** to cancel the authorization request.

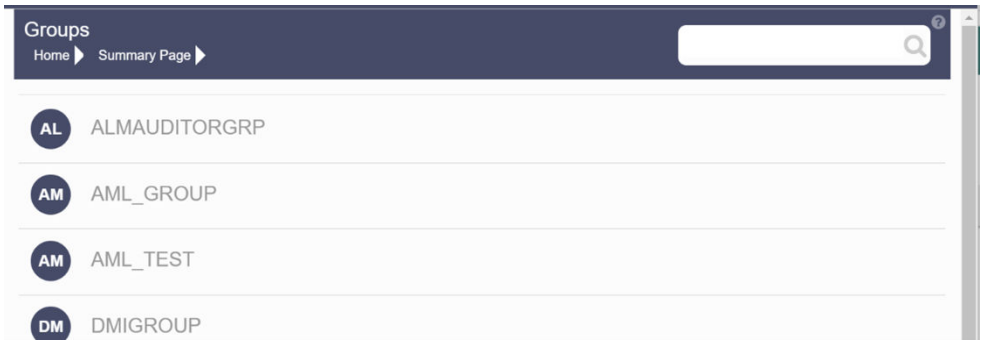
1.3.3.2 Groups Summary Page

The Groups Summary page shows the list of available groups. You can view the details of a group and map the group to one or more user Roles.

To access Groups Summary page, complete the following steps:

1. Click **Identity Management** tab in the **Admin Console** page.
2. Click the **Groups** tile ( ).
   The Groups Summary page is displayed.

Figure 1-49 Groups Summary Page



3. Select a specific Group Name in the Groups Summary page and then click Details to view the associated Group ID, Group Name and Group Description. For more information refer to Group Details.
4. Select a Group name and click Mapped Roles to view the list of Roles that are mapped to the particular Group. For more information about mapped groups, refer to Mapped and Unmapped Roles.

You can also Unmap a group from a specific Role. For more information, refer to Mapped and Unmapped Roles.

To search for a specific user group, type the first few letters of the user group name that you want to search in the search box and click Search. The search results display the names that consist of your search string in the list of available users.

At the bottom of the page, you can enter the number of entries that are available on a single page in the Records box. You can increase or decrease the number of entries that are displayed using the up and down arrows. To navigate between pages in the View bar, use the following buttons:

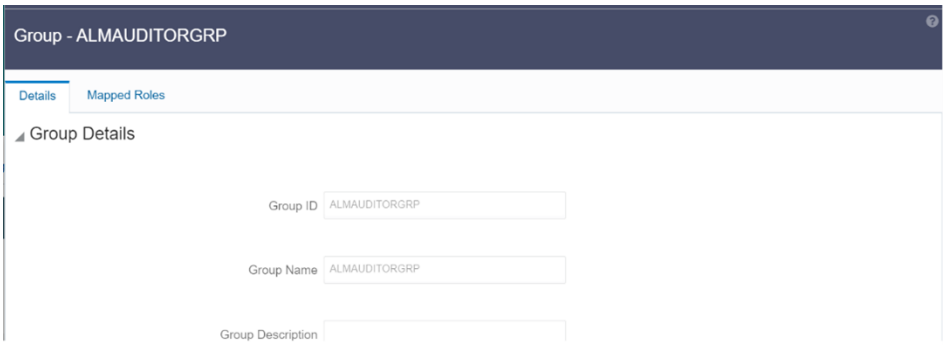
- Use the First page button to view the entries in the first page.
- Use the Previous page button to view the entries in the previous page.
- Use the Next page button to view the entries in the next page.
- Use the Last page button to view the entries in the last page.

You can also navigate to the desired page. To do this, enter the page number in the View bar control and press Enter.

1.3.3.2.1 Group Details

Select the Group name in the Groups Summary page and then select Details to view the Group ID, Group Name and Group Description.

Figure 1-50 Group Details Page



1.3.3.2.2 Mapped and Unmapped Roles

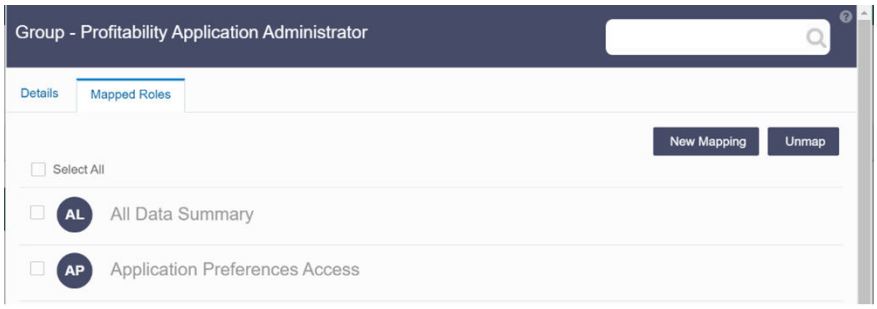
If you are an administrator, you can map and unmap a Group to a User Role, from the Groups Summary page.

1.3.3.2.2.1 Mapped Roles

Complete the following steps, to map an user to a User Group.

1. Select the User name in the Groups Summary page.
2. Select Mapped Roles.
   The list of Roles mapped to the specific user is displayed.

Figure 1-51 Mapped Roles



3. Click **New Mapping**.
   After you click New Mapping, the list of user Roles you can map the group to appears in the **Available Roles** page.
4. Select the check box corresponding to a User Role or click **Select All** to select all the available User Roles.
5. Click **Map**.
   A confirmation message is displayed after successful mapping. The mapping will be completed after authorization.

If you are an authorizer and want to authorize a mapping, follow these steps:

1. In **Mapped Roles**, select the user Role name.
2. Click **Authorize** to authorize the user-user group mapping.
   Click **Reject** to cancel the authorization request.

1.3.3.2.2.2 Unmapped Roles

To unmap a Group from a Role, complete the following steps.

1. Select the Group name in the **Groups Summary** page.
2. Select **Mapped Roles**.
   The list of Roles mapped to the specific user is displayed.
3. Select the check box corresponding to a User Role or click **Select All** to select all the available User Roles.
4. Click **Unmap**.
   A confirmation message is displayed after successful unmapping. The mapping will be completed after authorization.

If you are an authorizer and want to authorize a mapping, follow these steps:

1. In **Mapped Roles**, select the user group name.
2. Click **Authorize** to authorize the user-user Role unmapping.
   Click **Reject** to cancel the authorization request.

1.3.3.2.3 Available Roles

Click New Mapping to view the list of roles you can map to the user group.

To select a role, select the check box corresponding to the role. To select all roles, select the check box marked **Select All**.

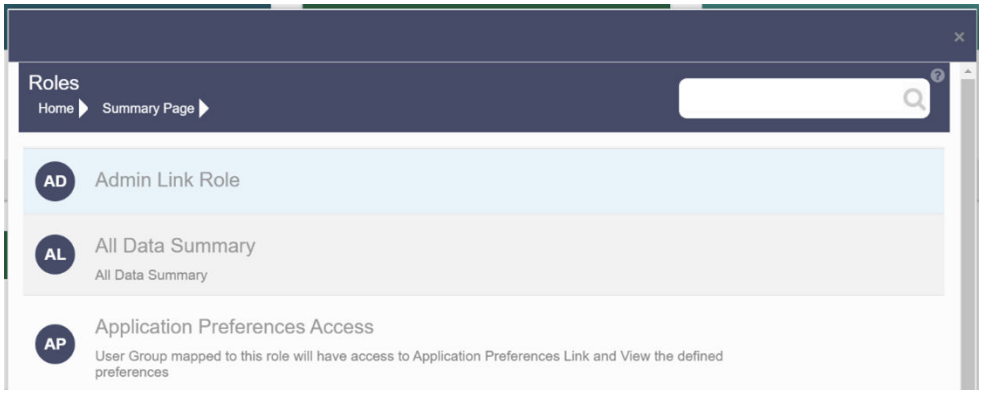
1.3.3.3 Roles Summary Page

The Roles Summary page shows the list of available User Roles. You can view the details of a Role and map the Role to one or more user Functions.

To access Roles Summary page, complete the following steps:

1. Click **Identity Management** tab in the **Admin Console** page.
2. Click the **Roles** tile ( ).
   The **Roles Summary** page is displayed.

Figure 1-52 Roles Summary Page



3. Select a specific Role Name in the Roles Summary page and then click Details to view the associated Role Code, Role Name and Role Description. For more information refer to Role Details.
4. Select a Role name and click Mapped Functions to view the list of Functions that are mapped to the particular Role. For more information about mapped Functions, refer to Mapped and Unmapped Functions.
   You can also Unmap a Role from a specific Function. For more information, refer to Mapped and Unmapped Functions.

To search for a specific role, type the first few letters of the role name that you want to search in the Search box and click Search. The search results display the names that consist of your search string in the list of available users.

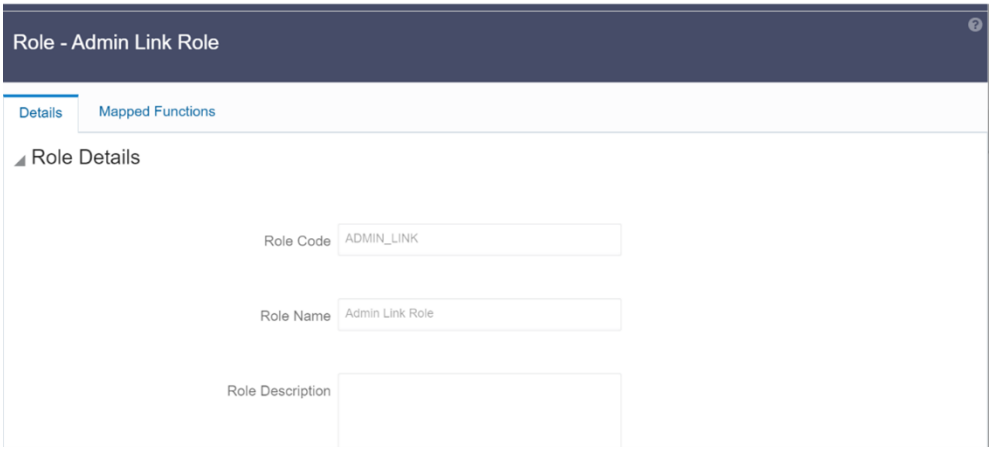
At the bottom of the page, you can enter the number of entries that are available on a single page in the Records box. You can increase or decrease the number of entries that are displayed using the up and down arrows. To navigate between pages in the View bar, use the following buttons:

- Use the First page button to view the entries in the first page.
- Use the Previous page button to view the entries in the previous page.
- Use the Next page button to view the entries in the next page.
- Use the Last page button to view the entries in the last page.
  You can also navigate to the desired page. To do this, enter the page number in the View bar control and press Enter.

1.3.3.3.1 Roles Details

Click a specific Role listed in the Roles Summary page and click Details to view the Group ID, Group name and the description of that group.

Figure 1-53 Roles Details Page



1.3.3.3.2 Mapped and Unmapped Functions

If you are an administrator, you can map and unmap a User Role to a Function, from the Roles Summary page.

1.3.3.3.2.1 Mapped Functions

Complete the following steps, to map a Role to a Function.

1. Select the Role name in the **Roles Summary** page.
2. Select **Mapped Functions**.
   The list of Functions mapped to the specific user is displayed.

Figure 1-54 Mapped Functions



3. Click **New Mapping**.
   After you click New Mapping, the list of user Functions you can map the Role to appears in the **Available Functions** page.

4. Select the check box corresponding to a Function or click Select All to select all the available Functions.
5. Click **Map**.
   A confirmation message is displayed after successful mapping. The mapping will be completed after authorization.

If you are an authorizer and want to authorize a mapping, follow these steps:

1. In Mapped Functions, select the Function Name.
2. Click **Authorize** to authorize the Role Function mapping.
   Click **Reject** to cancel the authorization request.

1.3.3.3.2.2 Unmapped Functions

To unmap a Role from a Function, complete the following steps.

1. Select the Role name in the **Roles Summary** page.
2. Select **Mapped Functions**.
   The list of Functions mapped to the specific Role is displayed.
3. Select the check box corresponding to a Function or click Select All to select all the available Functions.
4. Click **Unmap**.
   A confirmation message is displayed after successful unmapping. The mapping will be completed after authorization.

If you are an authorizer and want to authorize a mapping, follow these steps:

1. In **Mapped Functions**, select the Function Name
2. Click **Authorize** to authorize the Role Functions unmapping.
   Click **Reject** to cancel the authorization request.

1.3.3.4 Folders Summary Page

You can create multiple Folders, store objects and assign access rights based on the security level of the user.

The Folders Summary page shows the list of available groups. You can view the details of a group and map the group to one or more user Roles.

To access Folders Summary page, complete the following steps:

- Click **Identity Management** tab in the **Admin Console** page.
- Click the **Folders** tile ().
  The **Folders Summary** page is displayed.

Figure 1-55 Folders Summary Page



Select a specific Folder Name in the Folders Summary page and then click Details to view the associated Folder ID, Folder Name and Folder Type. For more information refer to #unique_94.

To search for a specific user group, type the first few letters of the user group name that you want to search in the search box and click Search. The search results display the names that consist of your search string in the list of available users.

At the bottom of the page, you can enter the number of entries that are available on a single page in the Records box. You can increase or decrease the number of entries that are displayed using the up and down arrows. To navigate between pages in the View bar, use the following buttons:

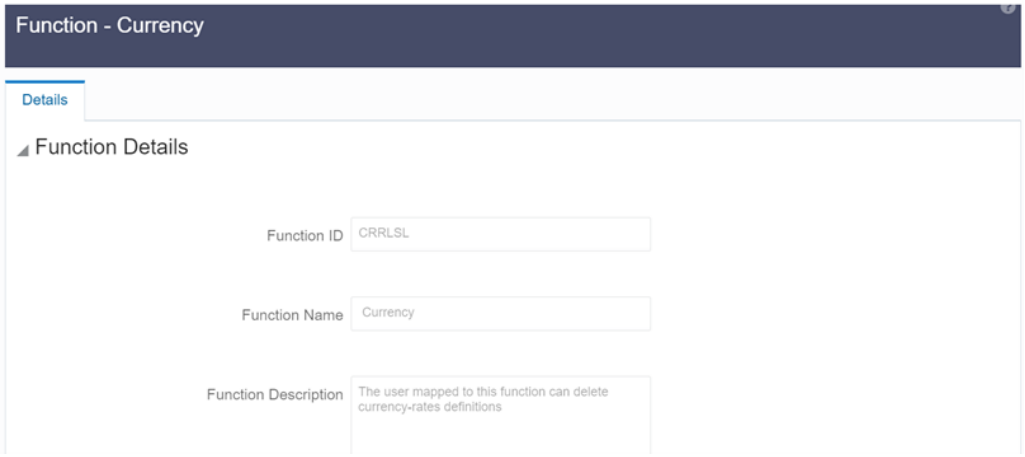
- Use the First page button to view the entries in the first page.
- Use the Previous page button to view the entries in the previous page.
- Use the Next page button to view the entries in the next page.
- Use the Last page button to view the entries in the last page.

You can also navigate to the desired page. To do this, enter the page number in the View bar control and press Enter.

1.3.3.4.1 Function Details

Select the function name in the Functions Summary page and then select Details to view the Function ID, Function Name, and Function Description of the selected function.

Figure 1-56 Function Details



1.3.3.4.1.1 Editing Folder Details

You can edit the Folder Type from the folder details page.

1. Click **Edit** button on the **Folder Details** page.
2. Set the Folder Type to one of the following options:
   - **Public**- These folders are accessible to all users
   - **Private** - These Folders can be viewed only by the users associated with that folder.
   - **Shared** - These folders can be accessed by those users mapped to specific User groups. These User groups are mapped to specific roles that are associated with the folder.

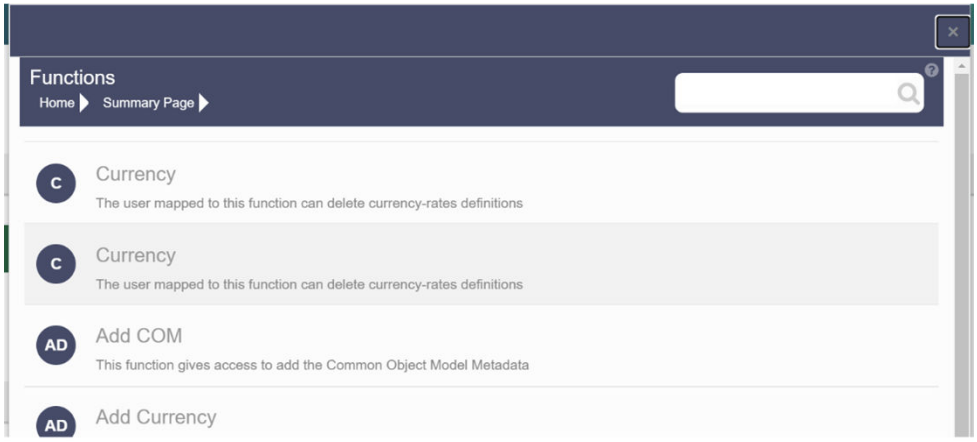
1.3.3.5 Functions Summary Page

The Functions Summary page shows the list of available functions. You can view the Function details.

To access Functions Summary page, complete the following steps:

1. Click **Identity Management** tab in the **Admin Console** page.
2. Click the **Functions** tile. The **Functions Summary** page is displayed.

Figure 1-57 Functions Summary page



3. Select a specific Folder Name in the Functions Summary page and then click Details to view the associated Function ID, Function Name and Function Description. For more information refer to Function Details.

To search for a specific function, type the first few letters of the function name that you want to search in the search box and click Search. The search results display the names that consist of your search string in the list of available users.

At the bottom of the page, you can enter the number of entries that are available on a single page in the Records box. You can increase or decrease the number of entries that are displayed using the up and down arrows. To navigate between pages in the View bar, use the following buttons:

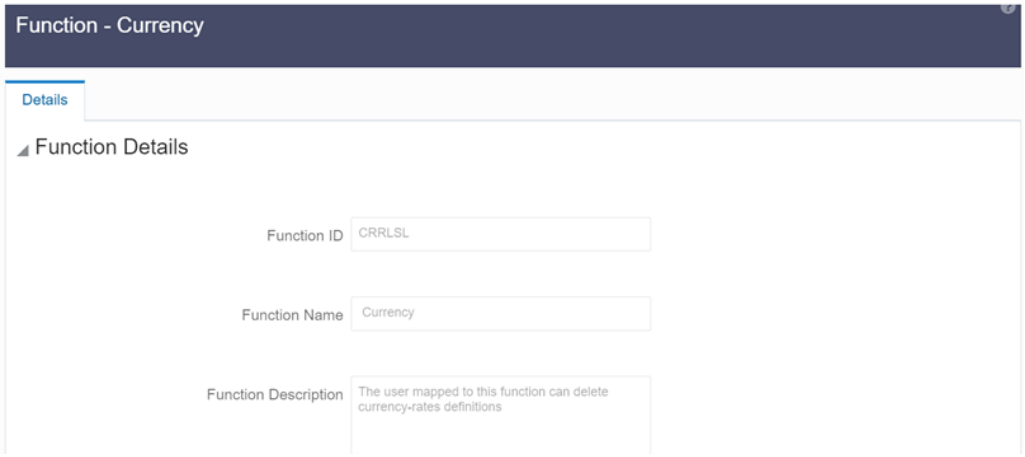
- Use the First page button to view the entries in the first page.
- Use the Previous page button to view the entries in the previous page.
- Use the Next page button to view the entries in the next page.
- Use the Last page button to view the entries in the last page.

You can also navigate to the desired page. To do this, enter the page number in the View bar control and press **Enter**.

1.3.3.5.1 Function Details

Select the function name in the Functions Summary page and then select Details to view the Function ID, Function Name, and Function Description of the selected function.

Figure 1-58 Function Details



1.3.3.5.2 Mapped and Unmapped Functions

If you are an administrator, you can map and unmap a User Role to a Function, from the Roles Summary page.

1.3.3.5.2.1 Mapped Functions

Complete the following steps, to map a Role to a Function.

1. Select the Role name in the **Roles Summary** page.
2. Select **Mapped Functions**.
   The list of Functions mapped to the specific user is displayed.

Figure 1-59 Mapped Functions



3. Click **New Mapping**.
   After you click New Mapping, the list of user Functions you can map the Role to appears in the **Available Functions** page.
4. Select the check box corresponding to a Function or click Select All to select all the available Functions.
5. Click **Map**.
   A confirmation message is displayed after successful mapping. The mapping will be completed after authorization.

If you are an authorizer and want to authorize a mapping, follow these steps:

1. In Mapped Functions, select the Function Name.
2. Click **Authorize** to authorize the Role Function mapping.
   Click **Reject** to cancel the authorization request.

1.3.3.5.2.2 Unmapped Functions

To unmap a Role from a Function, complete the following steps.

1. Select the Role name in the **Roles Summary** page.
2. Select **Mapped Functions**.
   The list of Functions mapped to the specific Role is displayed.
3. Select the check box corresponding to a Function or click Select All to select all the available Functions.
4. Click **Unmap**.
   A confirmation message is displayed after successful unmapping. The mapping will be completed after authorization.

If you are an authorizer and want to authorize a mapping, follow these steps:

1. In **Mapped Functions**, select the Function Name
2. Click **Authorize** to authorize the Role Functions unmapping.
   Click **Reject** to cancel the authorization request.

2
Data Administration

This chapter covers the following topics:

- The PBSM Cloud Service provides OOTB placeholder Columns and Tables that can be configured to use as custom Columns, Custom Dimensions, and Custom Management Ledger Tables as suitable to the business requirements. However, these Columns and Table are placeholder items and must be registered before use. The Data Model Extension module enables you to register these Columns and Tables. For more information. see the Data Model Extension topic.
- The Data File Specification module helps you to load the data from your systems to the PBSM Cloud Services. For more information, see Data File Specification.
- The File Upload and Download Utility enables you to upload or download files to the Object Store. For more information, see File Upload and Download Utility.
- Data Maintenance Interface (DMI) helps to design a Data Form in a user-specified format. Further, it allows to perform maintenance activities using the Designed Form. For more information, see Data Maintenance Interface.
- Data Quality Framework consists of a scalable rule-based engine which uses a single-pass integration process to standardize, match, and duplicate information across global data. For more information, see Data Quality Framework.
- The Cash Flow Edits Configuration Window allows you to configure a new Cash Flow Edits Rule. For more information, see Configure Cash Flow Edits Rule.
- The Cash Flow Edits Process allows you to verify the accuracy and check the completeness of your Instrument Table Data. For more information, see Cash Flow Edits Process.

2.1 Data Model Extension

Customization of Physical Data Model is restricted in the Profitability and Balance Sheet Management (PBSM) Cloud Service. However, it is understood that there may be a need to extend the Data Model to meet multiple business requirements. For this purpose, the PBSM Cloud Service provides OOTB placeholder Columns and Tables that can be configured to use as custom Columns, Custom Dimensions, and Custom Management Ledger Tables as suitable to the business requirements.

These placeholder Columns and Tables must be registered before use. The Data Model Extension Module allows you to do the following types of registrations:

- Dimensions Registration
- Columns Registration
- Management Ledger Registration

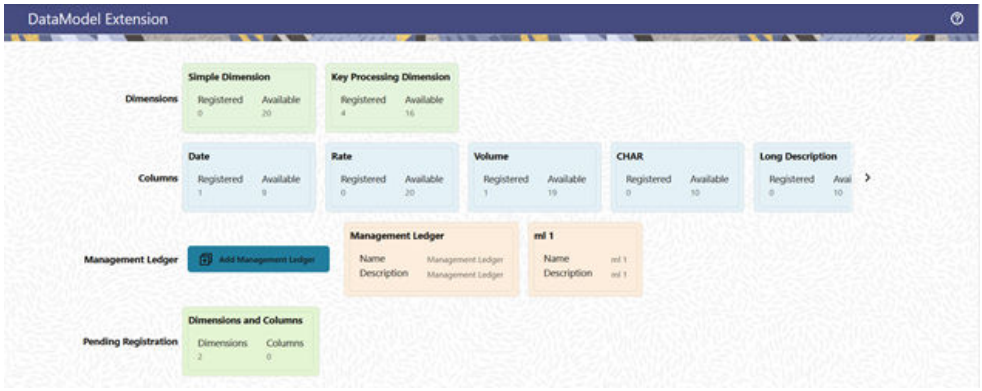
After registration, you can start loading the data in the selected placeholder Columns and Tables and use them to define the Rules and Assumptions for further processing and reporting.

Appropriate user roles must be created and maintained for the users to perform the registration and registration approval processes.

To register the placeholder Columns and Tables, perform the following steps:

1. From the LHS Menu, select Data Management Tools, and then select Data Model Extension to display the DataModel Extension Summary Screen.

Figure 2-1 DataModel Extension Summary Screen



The DataModel Extension Summary Screen displays the following tiles:

- Dimensions
- Columns
- Management Ledger
- Pending Registration

Using this UI, you do the registration of Dimensions, Columns, and Management Ledger Tables. After the registration is done, the detail will be sent to the Supervisor or Approver User who either approves or rejects the registration.

2.1.1 Registering Dimensions

Through the Dimension Registration UI, you register two types of Dimensions; Simple Dimension and Key Processing Dimensions that are explained in the following topics.

Through the Dimension Registration UI, you register two types of Dimensions; Simple Dimension and Key Processing Dimensions that are explained in the following topics. Dimensions are the Placeholder Columns and Tables. The column names appear in the Instrument Tables as Physical Column Names. The Data Model Extension UI allows you to define the Logical Layer with details Name, Description, and the purpose of the column. After these columns are defined, they appear in the drop-down lists in the application screens as UDPs (User Defined Properties) that you can use. This process of defining the Dimensions is called Registering.

2.1.1.1 Register a Simple Dimension

Simple Dimensions are list of values that support neither attributes nor hierarchies.

Simple Dimensions are list of values that support neither attributes nor hierarchies. Their three key uses are:

- Reserved for use within the Analytical Application Engines
- Stratifying your data for process or report filtering purposes
- Serving as list of values when used as attributes

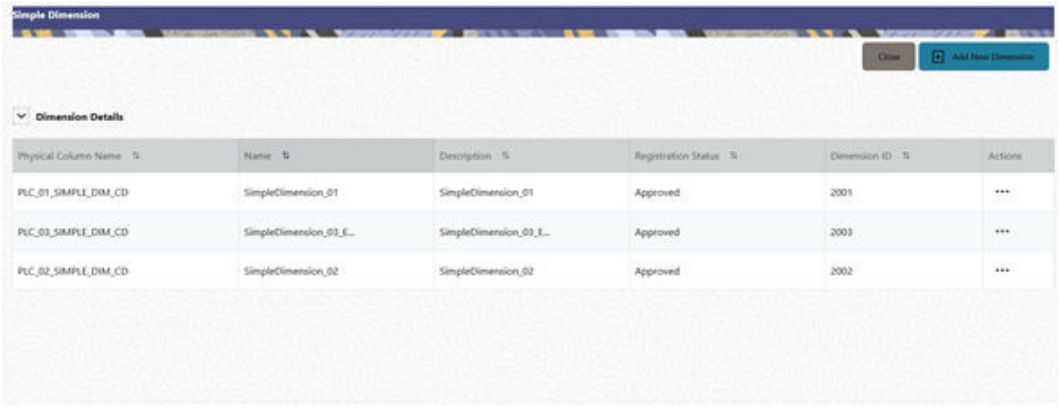
The PBSM Data Model comes with 20 placeholder Simple Dimensions for configuration and use. The member details of simple dimensions are stored in two tables:

- A code table (For example, FSI_SIMPLE_DIM_01_CD)
- A Multi-Language Support table (for example, FSI_SIMPLE_DIM_01_MLS)

To register a Simple Dimension, perform the following steps:

1. Navigate to the **Data Model Summary** Screen, and click the **Simple Dimensions** Tile to display the **Simple Dimension Summary** Screen.

Figure 2-2 Simple Dimension Summary Screen



The Simple Dimension Summary Screen displays the summary of existing Simple Dimensions with the Physical Column Names, Name, Description, Registration Status, Dimension ID details, and Actions Icon.

2. Click **Add New Dimension** to collapse the Dimension Details Summary and to display the Dimension Details.

   When you click **Add New Dimension**, the UI displays Save and Submit for Approval Buttons.

3. Enter the following details:
   - **Name** (mandatory): Specify the required logical name of the dimension.
   - **Description** (mandatory): Specify the required description of the dimension.
   - **Comment**: Specify the required maker/checker comment. Note that special characters *, newline, and double quotes are not allowed.
     The **Details** section displays the Physical Column and Data Type information that the dimension uses for user reference. As and when a registration takes place successfully and the physical column is utilized, the next registration process proceeds to take the next-in-numerical-order physical column available for registration.
4. Click **Save** to save the details. The details are saved as a Draft and displayed on the Summary Screen. You can change the Name, Description, and Comments later by double clicking the details.

5. Click **Submit for Approval** to send the Dimension Details for approval.Or Select a Name from the list and click the Actions Icon to View, View, Edit, Submit for Approval or Delete the Simple Dimension.

   OR

   Select a Name from the list and click the Actions Icon to View, View, Edit, Submit for Approval or Delete the Simple Dimension.

> **Note:**
>
> - You can delete a registration when it is in Draft state.
> - If the selected Dimension is in Approved state, then the Actions menu displays only View, Edit, and Submit for Approval actions.

2.1.1.1.1 View a Simple Dimension

To view a Simple Dimension, perform the following steps.

To view a Simple Dimension, perform the following steps:

1. Click the **Actions** Icon against the selected Simple Dimension to expand the Actions Menu.
2. Click **View** to see the details of the selected Simple Dimension.

2.1.1.1.2 Edit a Simple Dimension

To edit a Simple Dimension, perform the following steps:

1. Click the **Actions** Icon against the selected Simple Dimension to expand the Actions Menu.
2. Click **Edit** to display the selected Dimension details in edit mode.
3. Edit the following details:
   a. **Name**: This is mandatory.
   b. **Description**: This is mandatory.
   c. **Comment**: Specify the required maker/checker comment. Note that special characters *, newline, and double quotes are not allowed.
4. Click **Save** to save the details as a draft.
5. Click **Submit for Approval** to send the Dimension Details for approval.

> **Note:**
>
> - When you edit an already approved Dimension, the Dimension must be submitted for approval again. You cannot delete or edit the Dimension again.
> - Additionally, if you edit an approved Dimension, then the Actions Icon displays only the View option for the Dimension.

2.1.1.1.3 Delete a Simple Dimension

To delete a Simple Dimension, perform the following steps:

1. Click the **Actions** Icon against the selected Simple Dimension to expand the Actions Menu.
2. Click **Delete** to delete the Dimension.

> **Note:**
>
> You can only delete a Dimension that is in Draft stage. The Actions Menu does not display the Delete action for an approved dimension.

2.1.1.2 Register a Key Processing Dimension

Key Processing Dimensions have the following features:

- Accessible as modeling dimensions for all of the OFSAA Analytical Engines.
- Expressed as columns in nearly all of your Business Fact Tables.
- Support both attributes and hierarchies.

Metadata for Key Processing Dimensions is stored in four tables:

- A base table (For example, DIM_PRODUCTS_B)
- A translation table (For example, DIM_PRODUCTS_TL)
- An attribute table (For example, DIM_PRODUCTS_ATTR)
- A hierarchy table (For example, DIM_PRODUCTS_HIER)

Base tables store basic information about each Dimension Member and Translation Tables store names and descriptions for each Dimension Member in multiple languages.

Attribute Tables store one or many attribute values for each Dimension Member. Hierarchy Tables store one or more hierarchies for each dimension (you may define as many hierarchies as you wish for any dimension that supports hierarchies).

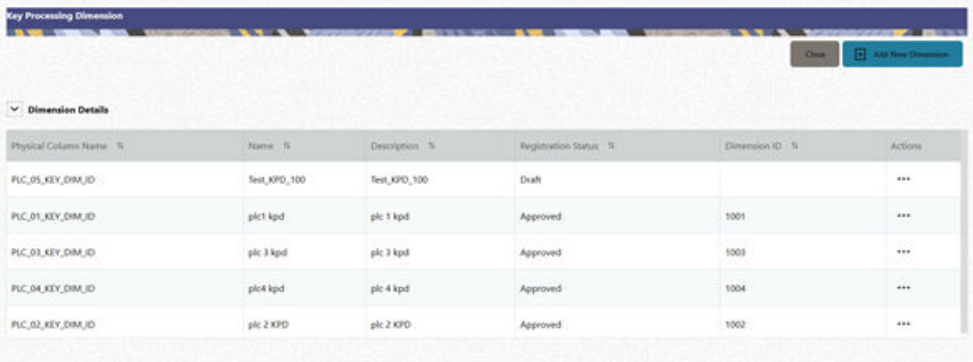
PBSM Cloud Service seeds the following Key Processing Dimensions:

- Financial Element
- Organizational Unit
- General Ledger Account
- Common Chart of Accounts
- Product
- Legal Entity

In addition to the OOTB Key Processing Dimensions, the application's DM Extension Module enables you to create Custom Dimensions as required by the business. To register a Key Processing Dimension, perform the following steps:

1. Navigate to the Data Model Summary Screen, and click the Key Processing Dimension Tile to display the Key Processing Dimension Summary Screen.

Figure 2-3 Key Processing Dimensions Summary Screen

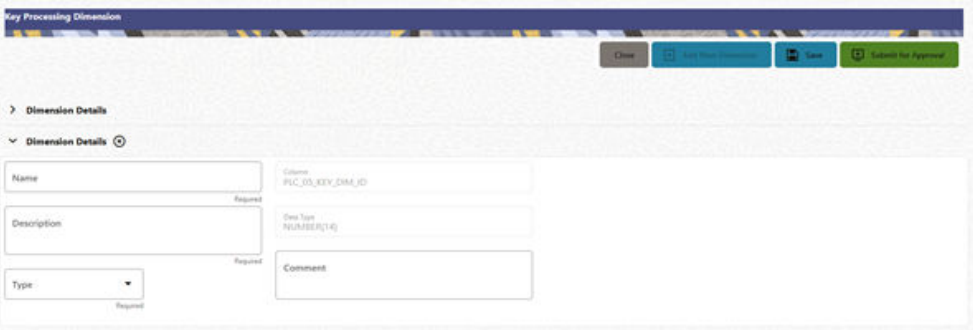


The Summary Screen displays the summary of existing Key Processing Dimensions with the details Physical Column Names, Name, Description, Registration Status, Dimension ID, and Actions icon.

The registration of a Dimension happens after the Dimension is approved. The Dimension ID is displayed only for the approved Dimensions.

2. Click Add New Dimension to collapse the Dimension Details Summary and to display the Dimension Details.
When you click Add New Dimension, the UI displays Save and Submit for Approval buttons.

Figure 2-4 Key Processing Dimension Screen



3. Enter the following details:
   - **Name**: This is a mandatory field. Specify the required logical name of the dimension.
   - **Description**: This is a mandatory field. Specify the required description of the dimension.
   - **Type**: This is a mandatory field. Select a relevant Dimension Type.
     - **Product** (Prod): Select this option if you want to use the placeholder Dimension to define Business Rules and Assumptions.
     - **Organization** (Org): Select this option if you want to use the Placeholder Dimension to define a new Organization structure.
     - **Other**: Select this option if you want to use the placeholder Dimension for any other purpose.

- **Comment** Specify the required maker/checker comment. Note that special characters *, newline, and double quotes are not allowed.

The **Details** section displays the Physical Column and Data Type information that the dimension uses for user reference. As and when a registration is successful and the physical column is utilized, the next registration process proceeds to take the next-in-numerical-order physical column available for registration.

4. Click **Save** to save the details. The details are saved as a Draft and displayed on the Summary Screen. You can change the Name, Description, and Comments later by double clicking the details.
5. Click **Submit for Approval** to send the Dimension Details for approval.
Or

Select a **Name** from the list and click the **Actions** Icon to View, Edit, Submit for Approval or Delete the Simple Dimension.

> **Note:**
>
> - You can delete a registration when it is in Draft state.
> - If the selected Dimension is in Approved state, then the Actions Menu displays only View, Edit, and Submit for Approval actions.

2.1.2 Registering Columns

The Placeholder Columns are categorized under the different domains to be used for different purposes.

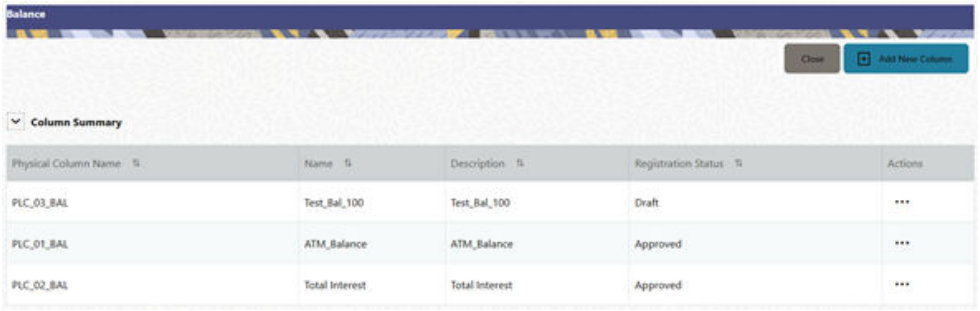
The following domain types are available for the columns:

- Data
- Rate
- Volume
- CHAR
- Long Description
- Flag
- Balance

The procedures to register the listed Columns are similar. To register a Column, perform the following steps:

1. Navigate to the Data Model Summary Screen, and click a Column tile to display the Column Summary Screen.

Figure 2-5 Column Summary Screen

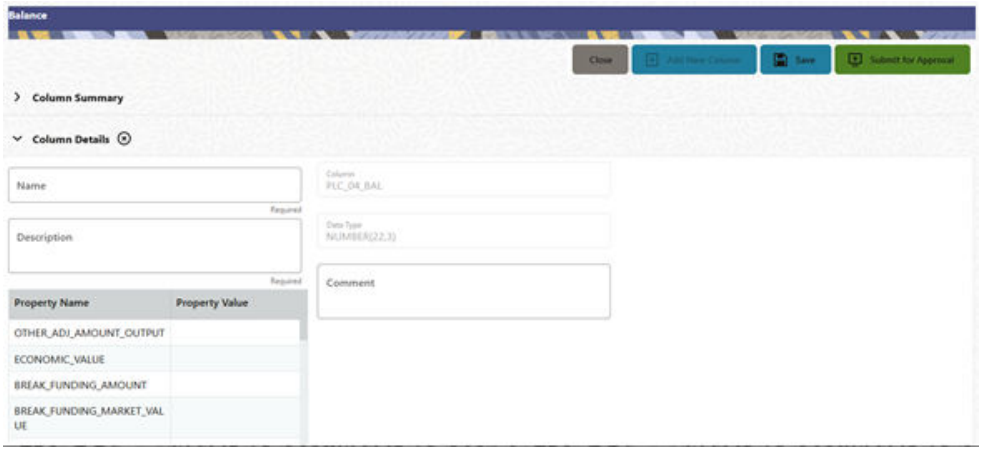


The Summary Screen displays the summary of existing Columns with the details Physical Column Names, Name, Description, Registration Status, and Actions Icon.

The registration of a Column happens after the Column is approved.

2. Click Add New Column to collapse the Column Details Summary and to display the Column Details.
When you click Add New Column, the UI displays the Save and Submit for Approval Buttons.

Figure 2-6 Column Screen



3. Enter the following details:

- **Name**: This is mandatory. Specify the required logical name of the column.
- **Description**: This is a mandatory field. Specify the required description of the column.
- **Property Name**: This is an optional field used to select a relevant Property from the drop-down list, as applicable to the Column.
- **Property Value**: Double click to display a drop-down where you can select Yes if it is applicable to the Column.
- **Comment**:Specify any Maker/Approver comment. Note that special characters *, newline, and double quotes are not allowed.
The **Details** Section displays the Physical Column and Data Type Information that the column uses for user reference. As and when a registration takes

place successfully and the Physical Column is utilized, the next registration process proceeds to take the next-in-numerical-order physical column available for registration.

4. Click Save to save the details. The details are saved as a Draft and are displayed on the Summary Screen. You can change the Name, Description, and Comments later by double clicking the details.
5. Click **Submit for Approval** to send the Column Details for approval.
OR

   Select a Name from the list and click the Actions Icon to View, Edit, Submit for Approval, or Delete the Column. Editing, Submitting for Approval, or Deleting procedures are similar to Dimension Edit, Submit for Approval, or Delete procedures.

> **Note:**
>
> - You can delete a registration when it is in Draft state.
> - If the selected Dimension is in Approved state, then the Actions menu displays only View, Edit, and Submit for Approval actions.

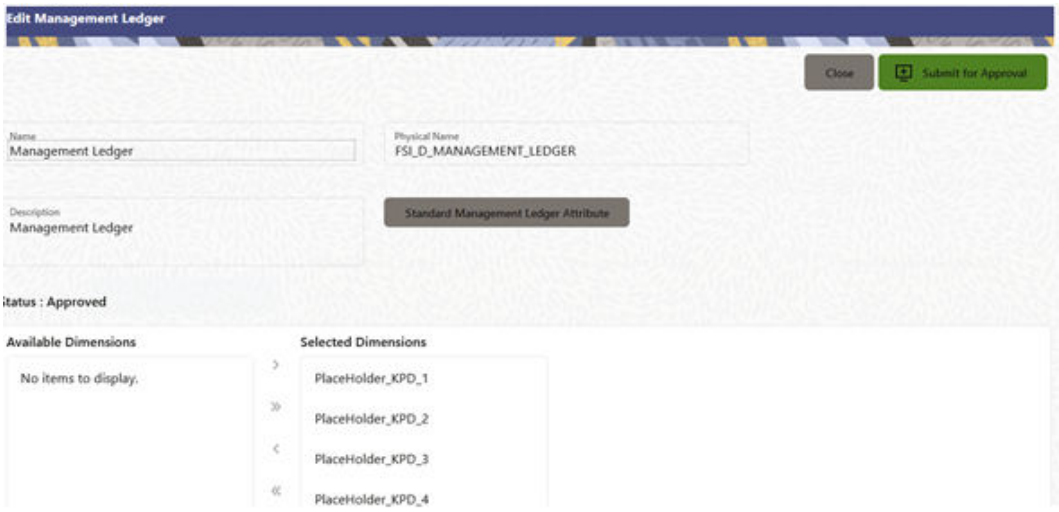
2.1.3 Registering a Management Ledger

PBSM Cloud Service is contains the default Management Ledger (FSI_D_MANAGEMENT_LEDGER). However, you can add upto five other Management Ledgers to the Service.

To view and edit the Management Ledger, perform the following steps:

1. Navigate to the **Data Model Summary** Screen, and click the **Management Ledger** tile to display the **Edit Management Ledger** Screen.

Figure 2-7 Edit Management Ledger Screen



This screen displays the following details of the Management Ledger as follows:

- **Name** (non-editable)
- **Physical Name** (non-editable)
- **Description** (non-editable)

2. Click **Standard Management Ledger Attribute** to collapse and see the available Standard Dimensions, Standard Columns, and Approved Dimensions.

   The Standard Dimensions Section shows the Key Processing Dimensions that are available OOTB for the Management Ledger. In addition to this, the Screen enables the selection of custom Key Processing Dimensions for the Management Ledger through a shuttle box component that displays the registered custom dimensions in the Available Dimensions and the Selected Dimensions Boxes. You can select from the Available Dimensions Box and move them to the Selected Dimension Box using the Move Button. Additionally, you can remove the Selected Dimensions by clicking the Move Back Button.

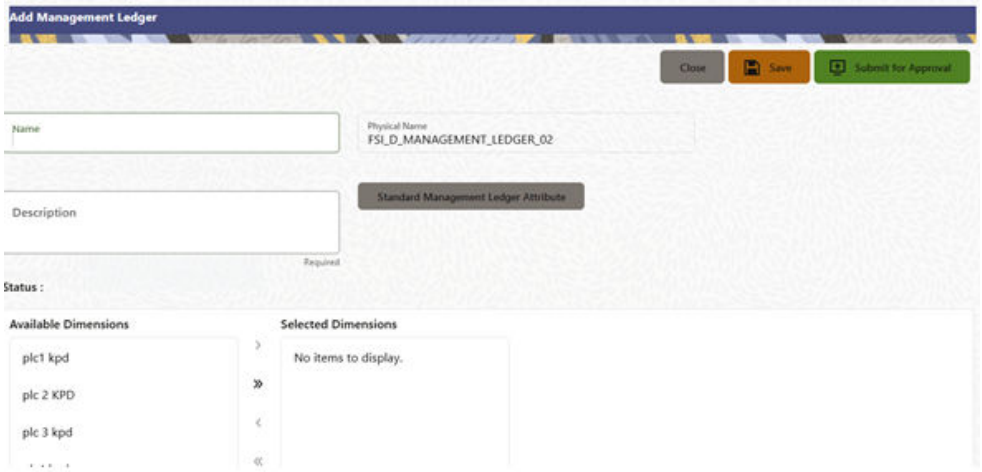
   The Standard Columns comprises of the OOTB Ledger-level Simple Dimensions and Admin Columns. The Approved Dimensions shows the list of Custom Dimensions approved for the Management Ledger.

2.1.3.1 Adding a Management Ledger

To add a new Management Ledger, perform the following steps:

1. Navigate to the **Data Model Summary** Screen, and click the **Add Management Ledger** tile to display the Add Management Ledger Screen.

Figure 2-8 Add Management Ledger Screen



2. Enter the following details:

   - **Name**: This is a mandatory field. Specify the logical name of the Management Ledger.
   - **Description**: This is a mandatory field. Specify the description of the Management Ledger.

3. Select the applicable Dimensions from the **Available Dimensions** Box and click the **Move** Button to move them to Selected Dimensions Box. The selected Dimensions are included as the additional activated Key Processing Dimensions for the Management Ledger.

4. Click **Submit for Approval** to send the Column Details for approval.

   The details are sent to the Supervisor or Approver for approval. The newly added Management Ledger is displayed on the Summary Screen in a new tile.

> **Note:**
>
> - You can delete a registration when it is in Draft state.
> - If the selected Dimension is in Approved state, then the Actions Menu displays only View, Edit, and Submit for Approval actions.

2.1.4 Approving or Rejecting the Registrations

The Supervisor or Approver can see the Dimensions or Columns or Management Ledgers that are ready for approval on the Data Model Extension Summary Screen.

To approve the Dimensions, Columns, and Management Ledgers, perform the following steps:

1. Navigate to the **Data Model Extension** Summary Screen.

Figure 2-9 Data Model Extension Summary Screen



The Dimensions and Columns that are ready for approval are displayed in one tile and the Management Ledgers that are ready for approval are displayed in another tile against the **Pending Approval** Table.

2. Click on any Tile to open to the **Pending Dimension** and **Column Registration** Screen or **Approve Management Ledger Registration** Screen.
3. Enter a comment and click the **Approve** or **Reject** Buttons.
4. Select **OK**.
   a. The approved Dimension or Column or Management Ledger is displayed in the Summary Screen with *Approved* status.
   b. Select **Cancel** to keep the Dimension or Column or Management Ledger in a Pending for Approval Status.

5. Click **Reject** to reject the registration. Complete the approval process. The Registration will be marked with status Rejected in the Summary Screen.
6. After it is approved or rejected, the registration is available for further modification by the Maker and can be submitted again.

   A registration cannot be deleted after it has passed the Draft State and is currently in Pending, *Approved* or *Rejected* state.

2.2 Data File Specification

This chapter covers the following topics:

- Loading External Data
- Data Loaders
- Data File History

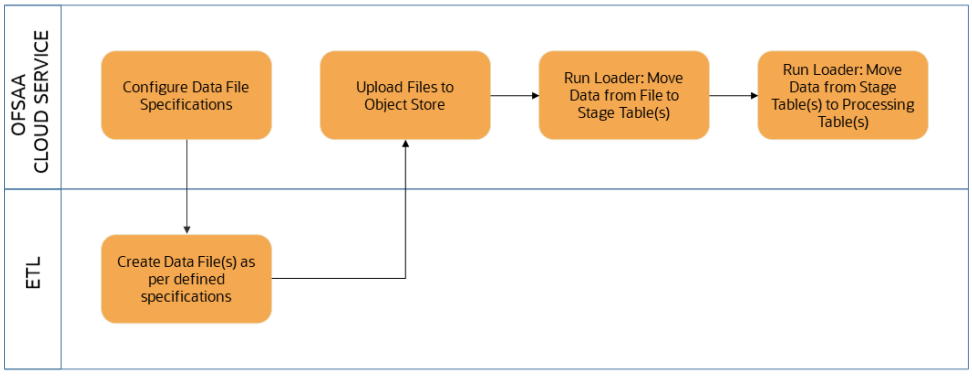
2.2.1 Loading External Data

The (OFSAA or Oracle) Cloud Services use following categories of data:

- Account or Instrument
- Management Ledger
- Transaction Summary
- Dimensions and Hierarchies
- Market data like Interest Rate, Currency Exchange Rate

The following illustration depicts the process of loading data from your systems into the Cloud Services:

Figure 2-10 Loading External Data



Oracle Cloud Services uses Oracle's Object Store Service to transfer data between your machine/laptop and its databases. Object Storage Service allows storing the files as objects in a highly secure, scalable, and durable way. Files can be uploaded through a Web Console; however, it is possible to do so only with files up to 1 GB.

Uploaded Data Files are temporarily stored in the Object Storage for Data Loaders to read and move them to the corresponding Database Tables for further use by the individual services.

Before the files can be created and uploaded, format, column order and other properties must be defined using Data File Specifications User Interface. This chapter discusses the supported formats and contents of the data file that is being imported into the Object Storage.

For information on uploading files, see the File Upload and Download section. For information on running the Data Loaders, see the Data Loaders section.

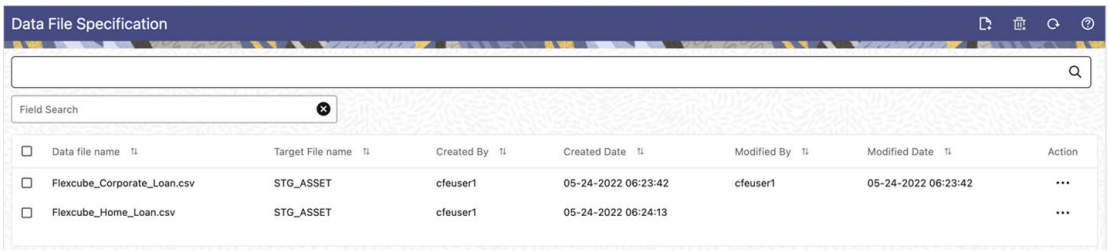
2.2.1.1 Data File Specification

The three supported formats for the Data Files are TXT, DAT, and CSV. These files contain the name of the table for which the specifications are being created.

Ensure that there are no duplicate records in a single Data File. If there are duplicate records, then the Data File Upload results in a failure.

To open the Data File Specification Window, navigate to the **Data Management Tools**, select **Data File Administration**, and then select **Data File Specification** to display the Data File Specification Summary Page.

Figure 2-11 Data File Specification Summary Screen



The Summary Page of Data File Specification displays the Search Criteria Pane, Specific Search Pane, and the already created Data Files and their details.

2.2.1.1.1 Searching for a Data File Specification

There are two Search Panes provided to search the Data Files on the Summary Page.

To search the Data File, perform the following steps:

1. Click the **Search** icon on the Search pane to collapse (display) the Criteria Window.
2. Data File Name and/or Target File Name and click **Search** to display the Data File Names that match the criteria.
3. Click **Cancel/Reset** to remove the filter criteria on the Search Window and refresh the window.
4. Click **Search** after entering the search criteria.
   The search results are displayed in a table containing all the Data Files that meet the search criteria with the following details:
   - **Data File Name**: The name of the Data File.

- **Target File Name**: The Target File Name.
- **Created By**: Displays the Name of the user who created the Data File.
- **Created Date**: Displays the Date and Time at which the Data File was created.
- **Modified By**: Displays the Name of the user who last modified the Data File.
- **Modified Date**: Displays the Date and Time at which a Data File was last modified.

5. Click on the **Action** icon against the Data File Name to do further actions as follows:
   - **View**: Click View to view the contents of a Data File in read-only format.
   - **Edit**: Click the Edit icon to modify a previously saved Data File. Note that you cannot change the File Name.
   - **Save As**: Click Save As to create a copy of the selected Data File.
   - **Delete**: Click Delete to delete the selected Data File.
6. Click on the **Action** icon against the Data File to do further actions **View**, **Edit**, **Save As**, and **Delete** on the selected Data File.

The other method to search a Data File is using the **Field Search** pane. You can enter any one of the details of a Data File and press the **Enter** key to display the details of the Data File.

2.2.1.1.2 Creating a Data File Specification

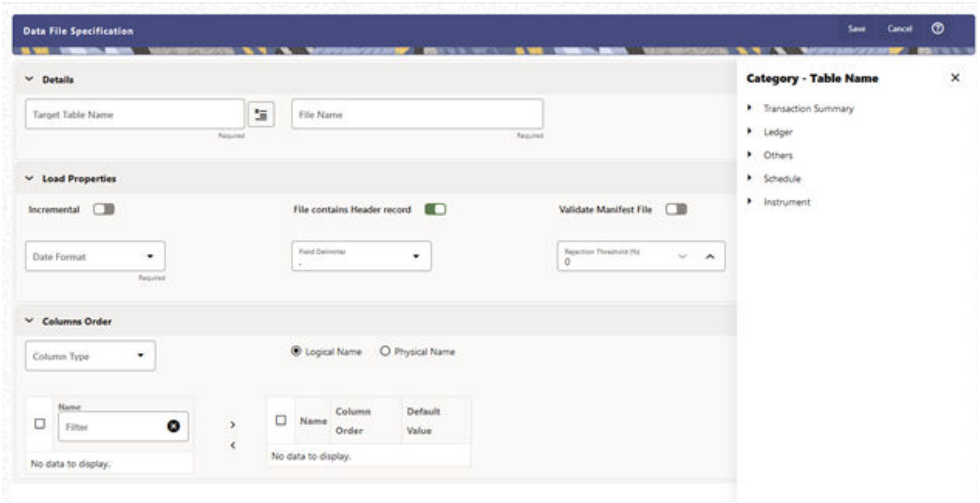
The Data File usually contains the Name of the Physical Table on which the specifications are being created and the columns included in the file.

For the complete list of available columns, see the Download Specifications available at Doc ID: 2959143.1

To create a new Data File Specification, perform the following steps:

1. Navigate to the Data File Specification Summary Page and click the **Add** icon to open the Data File Specification window.

Figure 2-12 Data File Specification



2. Under the Details Section of the screen, enter the following details:
   a. Click on **Target Table Name** to open a list **Category – Table Names**. The tables are categorized into different groups and are as follows:
      - Transaction Summary
      - Ledger
      - Others
      - Schedule o Instruments

      Each of the above **Categories** lists the **Tables** available for data loading. The list of categories is dependent on the Metadata from the Seeded Tables that come with the various Cloud Services and may differ from that shown above based on the services you have subscribed.
   b. Select a **Table** from the list for which you want to create the Data File Specification.
   c. Enter a unique **Name** for Data File Specification with an extension of the file format. The formats supported are TXT, CSV, and DAT types.
3. Under the **Load Properties** Section of the screen, enter the following details:
   a. Select the **Incremental** toggle switch if the data in the file is incremental. If the data is a complete load, then do not select this switch.
   This flag identifies if the Data File is incremental or fresh accounts. In the case of incremental accounts, if account 1 is loaded as part of the Data File 1 and needs a correction. In that case, the account is corrected and will be uploaded as part of Data File 2. In this case, Data File 2 is the incremental file.
   b. Select **File contains Header record** toggle switch if the file contains a Header Record.
   c. Select **Validate Manifest File** toggle switch if you want to validate the data in the Data File. This validation checks the Checksum of the file, the number of records that are being loaded from the file and other additional details such as Date Format and so on. To use this toggle switch, a prerequisite is to generate a manifest file for the Data File that is being created and it must be uploaded using the File Upload process. For more details, see the File Upload and Download section.
   This is an optional step. However, if you want to generate a manifest file in JSON format, then enter the following details and save it as a .manifest file. A sample JSON file format is as follows:

```
{"file_name":"test.dat","as_of_date":"2022-03-24","checksum":"2587cdb6a2b
87835c6adfce627671486","record_count":"10","rejection_threshold":"0"}
```

> **Note:**
>
> Ensure that the name of the manifest file is same as the Data File with .manifest extension. For example, if the Data File Name is asset.csv, then the manifest file must be named asset.manifest.

Table 2-1 MANIFEST File Details

Property Name	Notes
file_name	Full name of the file, without the leading path. Not validated; Only for information purposes.

Table 2-1 (Cont.) MANIFEST File Details

Property Name	Notes
as_of_date	Date for which file contains the data; Not validated; Only for information purposes.
checksum	Mandatory. The checksum of the file will be validated before loading commences.
record_count	Mandatory. The number of records in the file (ignoring header-record); will be validated after SQL*Loader completes.
rejection_threshold	Limit for % of records rejected, for calling the loading as “failed”. This can also be set from the UI.

d. Select the **Date Format** from the drop-down list to indicate the Date Format used in the Data File.

e. Select the **Delimiter** used in the Data File.

f. Select the **Rejection Threshold**. You should enter a number that is greater than or equal to zero.
The Rejection Threshold is used to check the allowed percentage of rows that can be rejected in a Data File. As an example, if you define a 10% Rejection Threshold for a Data File that has 1000 rows, then the Data File Upload fails if more than 100 rows are rejected. If the number of rows rejected is less than 100, then Data File Upload succeeds.

4. Under the **Columns Order** section of the screen, enter the following details. If you enter zero, then none of the records from the Data File should fail.

   a. Select the relevant option for Column Type from the following options:

      - **Key Columns**: The Key Columns are the primary keys of the record. A table displays the Key Columns available for the selected Target Table Name. By default, the primary keys will be selected.
      - **Dimension Columns**: If you select the Dimension Columns, all the Key Processing Dimensions for the selected Target Table are displayed in the drop-down list. This list displays the Placeholder Key Dimensions that are defined as part of the Data Model Extension Process. For more details, see the Data Model Extension section. Select the applicable Dimension Columns and click the **Move** button to display them in the table on the right-hand side.
      - **Other Columns**: If you select the Other Columns, all remaining columns (simple dimension, dates, measures, and so on) for the selected Target Table are displayed. Select the applicable columns from the list and click the Move button to display them in the table on the right-hand side.

   Within the selected Column Type, Column Names can be re-ordered by dragging and dropping. The columns are always ordered by their type, that is, Key Columns will appear before the Dimension Columns and Dimension Columns will always appear before the Other Columns. After saving a definition, if you add a new Dimension Column then it will appear in the order before the remaining Other Columns. For example, assume that the initial definition is saved with the below columns:

Figure 2-13 Column Preview



After this, if a new Dimension Column (say Product Id) is selected, it will push the Other Columns down in order.

Figure 2-14 Columns Preview



The same order must be followed while preparing the Data File.

The default value for each Column can also be given in the table. If the Column Value is null in the Data File, then the default value is used.

b. Select Logical Name or Physical Name to display the logical or physical names for the columns in the table.

5. Click **Save** to save the file. The newly created file will be listed on the Data File Specification Summary Screen.
6. On the Summary Screen, click on the **Action** icon against the File Name to perform further actions **View**, **Edit**, **Save as**, and **Delete**.

After you create the Data File, you must upload the file into the Object Store using the File Upload and Download option. If you have created a MANIFEST file for the Data File, you must upload the MANIFEST file too. For more information and procedure to upload or download the file, see the File Upload and Download section.

2.2.1.1.3 Creating the Data File

After the Data File Specification is defined, follow the below mentioned guidelines to prepare the Data Files:

- Columns to be included in the Data File must be as per the Data File Specification.
- Name of the Data File must be same as the Data File Specification with a prefix of “input_yyyymmdd” where yyyymmdd is the Date (As of Date) for which the Data File is prepared. For example:
  - Data File Specification Name is “Asset.dat”
  - The As of Date is 06-July-2022
  - Data File Name must be “input_20220706_asset.dat”
- Unique Data Validations:
  - Instrument Data Files: Account Numbers must be unique across the data files for a single As of Date.
  - Management Ledger Data Files: The combination of KPDs and Simple Dimensions must be unique across the data files for a single As of Date.
  - Transaction Summary Data Files: The combination of Account Numbers and KPDs must be unique across the data files for a single As of Date.
- Permitted Delimiters are comma (,) and pipeline (|).
- Data Validations:
  - Number fields: only numbers and dot (.) are allowed.
  - Description fields: comma (,) pipeline (|), single quotes (‘’), and double quotes (“ “) are not supported.
  - Any nullable fields which are mapped in the Data File Specification definitions should not skipped in the Data File.
  - The column order in the Data File should be in sync with the order defined in the Data File Specification definition.
  - Field Enclosures: Only double quotes (“”) are considered as Field Enclosures.

See the following sample files for your reference:

- input_20151009_asset.dat
- input_20150330_ASSETTXN.dat
- input_20220110_STGML.dat

For more information about the data required by the PBSM Services, see the Download Specifications available at the following documents:

- For Profitability Management Cloud Service: Doc ID: 2879433.1
- For Profitability Analytics Cloud Service: Doc ID 2901994.1
- For Funds Transfer Pricing Cloud Service: Doc ID 2896355.1
- For Asset Liability Management Cloud Service: Doc ID 2940325.1
- For Cash Flow Engine Cloud Service: Doc ID 2869409.1

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2.2.2 Data Loaders

Oracle Financial Services Profitability and Balance Sheet Management (PBSM) Cloud Service's Data Loaders are used to move the data from one stage to another stage and in turn update the underlying Database Tables.

PBSM Cloud Service supports the following types of Data Loaders:

- **Dimension Data Loaders**: The Dimension Data Loaders are used to populate the Dimension Members, Attributes, and Hierarchies from the Staging Dimension Tables to the Dimension Tables registered with the PBSM Cloud Services.
- **Instrument Data Loaders**: The Instrument Data Loaders are used to move the data from the files to the staging instrument tables.
- **Management Ledger Data Loaders**: The Management Ledger Data Loaders are used to move the data from the files to the staging Ledger tables and then to the processing Ledger tables.
- **Transaction Summary Data Loaders**: The Transaction Summary Data Loaders are used to move the data from the files to the staging Ledger tables and then to the processing Transaction Summary tables.

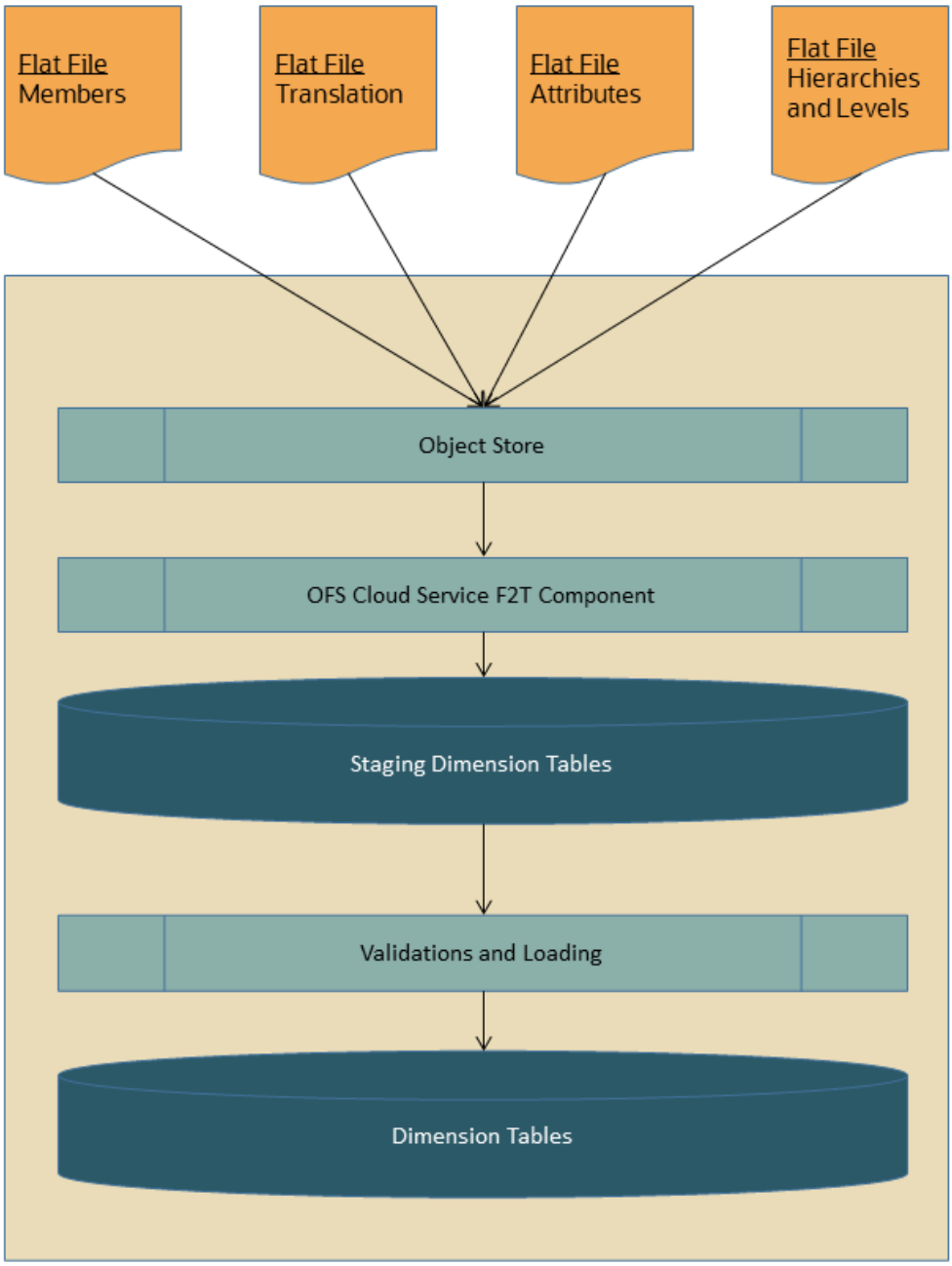
2.2.2.1 Dimension Data Loader

The Dimension Loader procedure populates Dimension Members, Attributes, and Hierarchies from Staging Dimension Tables into the Dimension Tables registered with Profitability and Balance Sheet Management (PBSM) Cloud Service. You can view the Members and Hierarchies loaded by the Dimension Loader though the PBSM Screens.

The Data File Specification is not applicable to Dimension Data Loaders. The file format and the file names are static in nature.

The following illustration depicts the process of Dimension Loading.

Figure 2-15 Dimension Loading Process



The Dimension Loader is used to:

- Load the Dimension Members and their Attributes from the Staging area into the Dimension Tables that are registered with OFS Cloud Service framework.
- Create Hierarchies for Key Dimensions in the Cloud Service.
- Load Hierarchical relationships between Key Dimension Members within the Hierarchies from the Staging area into the Cloud Service.

The following are the features of Dimension Loader:

- Loading Simple Dimensions from Staging Tables.
- Multiple Hierarchies can be loaded from Staging Tables.
- Validations of Members and Hierarchies are similar to that of being performed within the Cloud Service Screens.

Before you start the Dimension Loader, you must upload the Data Files that have the Dimension details.

As part of the File Definition, it is required Dimension Identifier for both Key and Simple Dimensions.

To get the correct DIMENSION ID to be used for the data file definition, you should use the SQL Query Browser and following query under OFSAAMETA schema the REV_DIMENSIONS_B table:

```
SELECT
dimension_id,
member_b_table_name,
member_tl_table_name,
dimension_active_flag,
simple_dimension_flag,
user_defined_flag,
write_flag,
dimension_editable_flag,
key_dimension_flag
FROM
ofsaameta.rev_dimensions_b
WHERE
dimension_active_flag = 'Y';
```

Then for the dimension table desired, available in REV_DIMENSIONS_B.MEMBER_B_TABLE_NAME or REV_DIMENSIONS_B.MEMBER_TL_TABLE_NAME table columns, the End User should pick up the correct value displayed in REV_DIMENSIONS_B.DIMENSION_ID to be used for correct input file definition.

The following sections list the sample files that you can use to build the Dimension Data. The name of the Data Files must be same as mentioned below and the File Extension must be .DAT. Click on each Data File Name to open a Sample Data File.

2.2.2.1.1 For Key Dimensions

The following is a list of sample files that you can use to build the Dimension Data.

The name of the Data Files must be same as mentioned below and the File Extension must be .DAT. Click on each Data File Name to open a Sample Data File.

Stage Dimension Loaders (Task 1):

- input_stg_dimensions_attr_intf.dat
- input_stg_dimensions_b_intf.dat
- input_stg_dimensions_tl_intf.dat
- input_stg_dimensions_hier_intf.dat

Stage Hierarchy Loaders (Task 2):

- input_stg_hierarchies_intf.dat
- input_stg_hierarchy_levels_intf.dat

To load the Dimensions, perform the following steps:

1. Define a new Batch and save it.
2. Add the following Tasks to the above Batch:

Table 2-2 Dimension Loading Process Tasks

Task Code	Task Name	Component	Parent Task
1	Stage Dimension Loader	Stage Dimension Loader	
2	Stage Hierarchy Loader	Stage Hierarchy Loader	1
3	Stage DRM Loader	Stage DRM Loader	2

> **Note:**
>
> The above Tasks must be executed in the same order.
> The Stage DRM Loader allows you to select a Dimension.

3. Execute the Batch.

Dimension Loader with ZIP File Support

You can zip all the DAT files into a single file and upload it to the Object Store.

To process the zip file:

- Create a Batch.
- Create a Task with the Component Name as **Dimension and Hierarchy Loader**.
- Execute the Batch.

For detailed instructions on Creating a Batch, Defining a Task, Execute the Task, and Schedule a Batch, see the Scheduler Services User Guide.

2.2.2.1.2 For Simple Dimensions

The following is a list of sample files that you can use to build the Dimension Data.

The name of the Data Files must be same as mentioned below and the File Extension must be .DAT. Click on each Data File Name to open a Sample Data File.

Stage Dimension Loaders (Task 1):

- input_stg_dimensions_b_intf.dat
- input_stg_dimensions_tl_intf.dat

To load the Dimensions, perform the following steps:

1. Define a new Batch and save it.
2. Add the following Tasks to the above Batch:

Table 2-3 Dimension Loading Process Tasks

Task Code	Task Name	Component	Parent Task
1	Stage Dimension Loader	Stage Dimension Loader	
2	Stage DRM Loader	Stage DRM Loader	1

> **Note:**
>
> The above Tasks must be executed in the same order.
> The Stage DRM Loader allows you to select a Dimension.

3. Execute the Batch.

Dimension Loader with ZIP File Support

You can zip all the DAT files into a single file and upload it to the Object Store.

To process the zip file:

- Create a Batch.
- Create a Task with the Component Name as **Dimension and Hierarchy Loader**.
- Execute the Batch.

For detailed instructions on Creating a Batch, Defining a Task, Execute the Task, and Schedule a Batch, see the Scheduler Services User Guide.

2.2.2.2 Instrument and Ledger Data Loaders

After the Data Files are uploaded to the Object Store, the Data Loaders are used to move the data from the files to the standing tables and then to processing tables.

File to Stage

To load the Data to Staging Tables:

1. Define a new Batch and save it.
2. Add the following Tasks to the above Batch:

Table 2-4 Data Loader – File to Stage Data

Task Code	Task Name	Component	Parameters
1 *	Custom Task Name *	Stage Data Loader	**Table Name**: select the stage table name from the available list. **Data File Specification**: select the data file specification definition form the available list. **File Name**: free text where file name uploaded to the object store to be provided. **Note:** You can also zip the file and then upload. Ensure the file name in the zip file is inline with the Data File Specification.

* Task Code and Task Name in the above table are for illustration purpose only. You can name them as per your requirements.

Execute the Batch for the As-of-Date used in the Data File.

For detailed instructions on Creating a Batch, Defining a Task, Execute the Task, and Schedule a Batch, see the Scheduler Services User Guide.

Stage to Processing

To load the Data from Staging Tables to Processing:

1. Define a new Batch and save it.
2. Add the following Tasks to the above Batch:

Table 2-5 Data Loader – Stage to Processing Data

Task Code	Task Name	Component	Parameters
1 *	Custom Task Name *	Select the relevant Component depending on the Data that you want to process. The options are: • Instrument Data Loader • Ledger Data Loader • Transaction Summary Loader	Stage Table: select the stage table name from the available list. Data File Specification: select the Data File Specification name from the available list.

2.2.2.3 Data Loader

The Data Loader service allows the user to load the required data by the Cloud Service to enrich the data. In this service, first you upload the data, and then run a batch to propagate the data into the processing layer.

To load the data:

1. From the LHS menu, select **Data Management Tools**, select **Data File Administration**, and then select **File upload and download** to display the File Upload/Download screen. The File Upload/Download screen displays the list of files that are uploaded to the Object Store and displays the following details for each file:
   - **File ID**: The unique file id. This is auto generated during upload.
   - **Prefix**: The prefix added to the file name.
   - **File Name**: The name of the uploaded file.
   - **Stripe Name**: The unique identifier for storing the files.
   - **Uploaded Date**: The file upload date.
   - **Download File**: Click the Download icon to download a copy of the file.
   - **Delete**: Click Delete to delete the uploaded file.
2. Click **Drag and Drop** to browse and select a file for upload from the local directory. You can also browse to the local directory from the File Explorer and select file and drop it here.

   The File Upload/Download service supports upload of TXT, DAT, and CSV format files.

   Name of the data file must follow the format as given below:
   - A prefix as **input_yyyymmdd** where the date format is related to the As of Date (i.e., 02-May-2023 becomes 20230502).
   - As per the data that you want to upload, upload the relevant data file from the table:

Table 2-6 Data File

Data	Data File Name	Object Store File Name
Exchange Rates	stg_exchange_rates.dat	input_20230622_stg_exchange_rates.dat

Table 2-6 (Cont.) Data File

Data	Data File Name	Object Store File Name
Behavior Patters	stg_behavior_pattern.dat	input_20230502_stg_behavior_pattern.dat

> **Note:**
>
> The file name is case-sensitive.

For more information about File Upload and Download, see File Upload and Download.

The following are the sample files for reference:

- stg_exchange_rates.dat
- input_20230701_bploaderdata.csv

3. After selecting the file to upload, click **Upload**.
   The UI displays a confirmation message *Upload successful*.
4. From the LHS menu, navigate to **Operations and Processes**, select **Scheduler**, and then select **Schedule Batch**.
5. Create a new Batch with a new Task with Generic Data Loader as Component.

Table 2-7 Loader Type

Seeded Batch Component	Loader Type Parameter
Generic Data Loader	Exchange Rates
Generic Data Loader	Behavior Patterns

6. From the LHS menu, navigate to **Operations and Processes**, select **Scheduler**, and then select **Execute Batch**.
7. From the LHS menu, navigate to **Operations and Processes**, select **Scheduler**, and then select **Monitor Batch**.
8. Select the **Batch** and then select the **MISDATE** and the **Batch name**. There may be multiple executions of the Data Loader batch. Select the latest execution and click **Start Monitor**.
   The UI displays the status of the batch.

For more details about Scheduler processes, see the Scheduler Services User Guide.

2.2.2.4 Interest Rate Codes Loader

The Interest Rate Code (IRC) Data Loader allows the users to load the Interest Rate Curves that are consumed by the Oracle Financial Services Cloud Services.

Loading the IRC Data consists of three tasks as follows:

- Stage Loader
- Stage Validator

- Processing Loader

The above three tasks can be executed individually or together under same batch. If created together, then the precedence mapping must be created as follows:

- Stage Validator must be executed after the Stage Loader is executed.
- Processing Loader must be executed after the Stage Loader is executed. Stage Validator is not mandatory.
- If Stage Validator is included, then the Processing Loader must be executed after the Stage Validator is executed.

To upload the Interest Rate Data file:

1. From the LHS menu, select **Data Management Tools**, select **Data File Administration**, and then select **File upload and download** to display the File Upload/Download screen.
2. Click **Drag and Drop** to browse and select a file for upload from a local directory. You can also browse to the local directory from the File Explorer, select the file, and drop it.
   The File Upload/Download service supports uploading CSV format files.

   Name of the Data File must follow the format as given below:

   - A prefix as **INPUT_YYYYMMDD** where the date format is related to the As of Date (i.e., 02-October-2023 becomes 20231002).
   - A suffix as **_FILENAME.CSV**.
   - An example of Data File Name could be:
     INPUT_20231002_IRC_<DATAFILENAME>.csv.
     The order of the columns in the input file must be as follows:
     - INTEREST_RATE_NAME
     - EFFECTIVE_DATE (Date format: MM-DD-YYYY)
     - INTEREST_RATE_TERM
     - INTEREST_RATE_TERM_MULT
     - INTEREST_RATE
     - RATE_DATA_SOURCE_CODE
   -

   For more information about File Upload and Download, see File Upload and Download Utility section.
3. After selecting the file to upload, click **Upload**.
   The UI displays a confirmation message: Upload successful and insert the data into the Stage tables.

   At this stage, the **Stage Validation** begins and performs the following checks:

   - **Records in the Stage table**: Stage Validation fails when no records are found in the uploaded file and no execution happens after this point.
   - **IRC definitions exist**: If there are single IRC definitions in the file, the validator passes and displays a warning message along with the Interest Rate Code for which definitions are missing.
   - Invalid Terms check (Term details not found): If there are extra terms available in incoming file: A warning message is displayed in the View Logs: Term details not found in the definition: Interest Rate Name: Standard25, Interest RateCd:25, Interest Rate Term: 270 D, 3 M.

Warnings are displayed in the View Log.

If there are multiple rows in the data file and one of the rows does not have the required information or wrong information, the validator leaves that record and proceeds with the remaining records. However, the log displays summary error messages with total number of records, records skipped, records rejected, records read, and records discarded. It does not display which particular records are failed or rejected.

> **Note:**
>
> The As of Date is used to load the file and the Effective Date in the file can be different. The data is loaded based on the Effective Date and if any value exists for corresponding Effective Date, then the loader will update. This also helps to push the IRC History data from on-prem to SaaS, and in the SaaS environments one tenant to other tenant.

4. From the LHS menu, navigate to **Operations and Processes**, select **Scheduler**, and then select **Create Batch**. For more details, see Define Batch.
   Batch Service URL: GENERIC_LOADER_SERVICE
5. From the LHS menu, navigate to **Operations and Processes**, select **Scheduler**, and then select **Ceate Task**. For more details, see Define Tasks.
   a. Task Type: REST
   b. Component: Generic Data Loader
   c. Loader Type: Interest Rate Codes Loader
   d. File Name: INPUT_20231002_IRC_<DATAFILENAME>.csv
6. Select the seeded batch and click **Edit Parameters**. In the Dynamic Parameters pop-up window, change the date to the relevant As-of-Date, and then save the batch.
7. From the LHS menu, navigate to **Operations and Processes**, select **Scheduler**, and then select **Execute Batch**.
8. From the LHS menu, navigate to **Operations and Processes**, select **Scheduler**, and then select **Monitor Batch**. For more information, see Monitor Batch.
9. Select the **Batch** and then select the **MISDATE** and the **Batch name**. There may be multiple executions of the Exchange Rate Data Loader batch. Select the latest execution and click **Start Monitor**.
   The UI displays the Status of the batch.

2.2.2.5 Generating Holidays for Holiday Calendar using Scheduler

The **Generate Holidays** option on the **Holiday Calendar Definition** page allows you to generate Holiday for a definition at a time. Using the Scheduler Service, you can generate the Holidays for multiple Calendar definitions in bulk.

To execute the batch, navigate to **Operations and Processes** , select **Scheduler**, and then select **Schedule Batch**.

You can also define new batch to execute any Holiday Calendar Generation by the following these steps:

1. Navigate to **Operations and Processes**, select **Scheduler**, and then select **Define Batch**.
2. Create a new Batch with a new Task with Holiday Generator as Component.

   For the selected From to To date parameters, you can generate Holidays for single or multiple calendar definitions.
3. From the LHS menu, navigate to **Operations and Processes**, select **Scheduler**, and then select **Execute Batch**.
4. From the LHS menu, navigate to **Operations and Processes**, select **Scheduler**, and then select **Monitor Batch**.
5. Select the **Batch** and then select the **MISDATE** and the **Batch name**. There may be multiple executions of the Data Loader batch. Select the latest execution and click **Start Monitor**.

   The UI displays the status of the batch.

   For more details about Scheduler processes, see the Scheduler Services User Guide.

2.2.3 Data File History

The Data File History Screen in the OFS Cloud Service allows you to see the Data Files that are uploaded to the Staging Tables and their status.

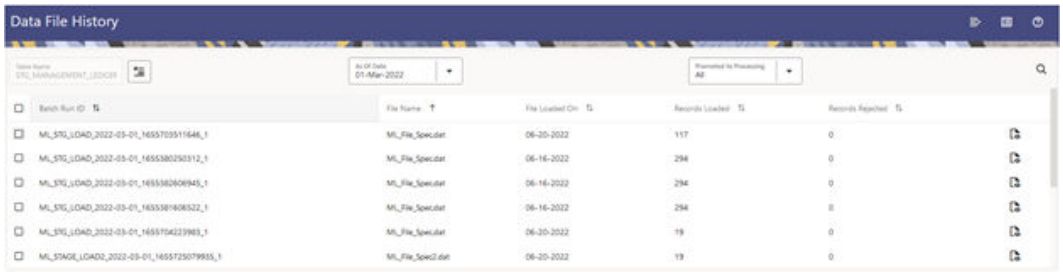
The Data File History UI allows you to do the following:

- Search for Data Files for which the Stage Data Loader Batch is already executed.
- Move the Data from State to Processing Tables.
- Delete the Data from the Stage.

To open the Data File History Window, perform the following steps:

1. Navigate to the **Data Management Tools**, select **Data File Administration**, and then select **Data File History** to display the Data File History Summary Screen.

Figure 2-16 Data File History Summary Screen



The Summary screen displays the following information of the Data Files:

- **Batch Run ID**: The ID used to run the Batch.
- **File Name**: The Data File Name.
- **File Loaded On**: The date on which the Data File is loaded.
- **Records Loaded**: The number of records loaded using the Data File.

- **Records Rejected**: The number of records that are rejected from the Data File.
- **View Details** (Icon): Select a Batch Run ID and click the details of the Data File.

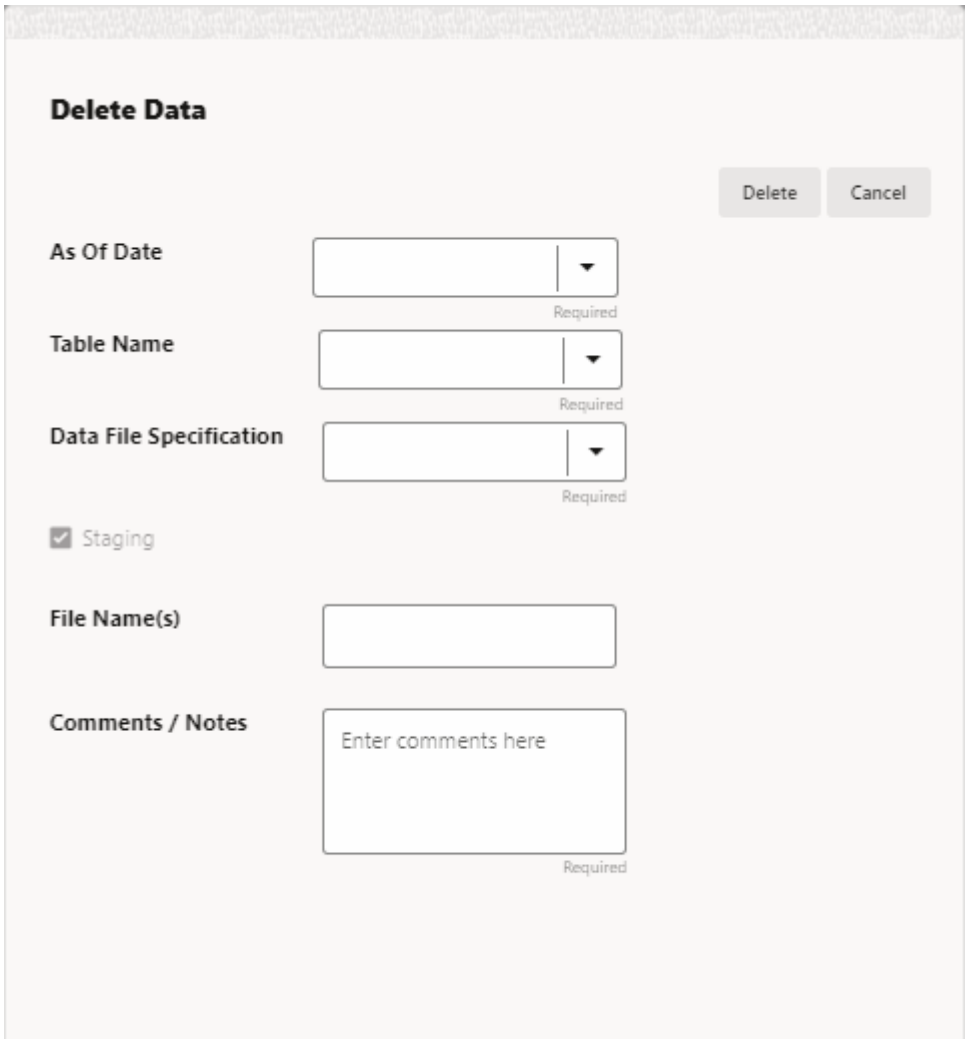
The following illustration is a sample of the Data File's details.

Figure 2-17 File Details



- **Promote selected files to Processing** (Button): To promote the selected File or Files for processing. This triggers the Batch Scheduler and queues the selected File or Files for processing.
- **Advanced Actions** (Button): If you select a File and click this button, a Delete Data from Staging button is displayed. Click Delete Data from Staging button to displays the Dalete Data pop-up window.

Figure 2-18 Delete Data



Enter or select the following details:

- As Of Date (mandatory)
- Table Name (mandatory)
- Data File Specification (mandatory)
- File Name(s)
- Comments / Notes

Click **Delete**.

- **Help** (Button): Click the Help icon to view the Data File History help.

2.2.3.1 Promoting a Data File for Processing

By promoting a Data File for processing, you insert the Data from the Data Staging Tables to the Processing Tables.

To promote a Data File for processing, perform the following steps:

1. Click on the **Table Name** icon to display the **Category – Table Names** window. This window displays the Stage Table Names where data is already loaded. The tables are categorized into different groups and are as follows:
   - Transaction Summary
   - Ledger
   - Others
   - Schedule
   - Instruments

   Each of the above Categories lists the Tables available to which the data is loaded. The list of categories is dependent on the Metadata from the Seeded Tables that come with the various OFS Cloud Services and may differ from that shown above based on the services you have subscribed.
2. Select the **Table** for which you want to see the File History from the list.
3. Select the relevant **As Of Date** from the drop-down list. This drop-down list displays different As-of-Dates. These dates are based on processed or not processed data loading. For example, if you have already processed some data on a previous date, this drop-down displays that date and displays the current date.
4. Click on **Promoted to Processing** and select the following options:
   - **All**: To display all the Data Files that are specified on the selected As-of-Date.
   - **Yes**: To display only the Data Files that are already specified and processed on the selected As-of-Date.
   - **No**: To display only the Data Files that are specified but are in the queue to be processed on the selected As-of-Date.
5. Click the **Search** icon to display the Data Files information as per the option you selected in the previous step.
6. Select one of more **Batch Run IDs** that you want to promote for processing and click the **Promote selected files to Processing** button. This triggers the Batch Scheduler and schedules the Batch for processing. You can monitor the status using the Monitor Batch screen.

2.2.3.2 Reloading a Data File

OFS Cloud Services allows you to reload a Data File.

For the detailed instructions on Reloading the Data File, see the Scheduler Service section.

> **Note:**
>
> While defining the Task, ensure that you select Delete Data Loader from the Component drop-down list.

2.3 File Upload and Download Utility

The File Upload and Download Utility enables you to upload or download files to the Object Store. Complete the following steps to Upload or Download a file.

- Upload or Download File from Object Store Using Console
- Uploading/Downloading a File Using Utility
- Uploading/Downloading a File Using PAR URL

2.3.1 Roles and Functions

The following table lists the role codes and function codes required to configure the File Upload/Download Utility.

Role Codes

Role Code	Function Code
FILE_READ	FILE_SUMMARY
FILE_UPLOAD	FILE_UPLOAD
FILE_DOWNLOAD	FILE_DOWNLOAD
FILE_ADV	FILE_UPLOAD
	FILE_DOWNLOAD
	FILE_DELETE
	FILE_SUMMARY

2.3.2 File Upload and Download Utility

The File Upload and Download Utility enables you to upload or download files to the Object Store. Complete the following steps to Upload or Download a file.

2.3.2.1 Upload or Download File from Object Store Using Console

1. From the left menu, click **Common Object Maintenance**.
2. Click **Data Management** in the left navigation pane.

   The **File Upload and Download** Page is displayed. The Files that are uploaded to the Object Store are listed here. The following details are provided for each File.

   - **File ID** - The unique file ID associated with the file. This is auto-generated during the upload.
   - **Prefix** - The prefix is added to the file name.
   - **File Name** - The name of the file that is uploaded. This is automatically updated after you select the file.
   - **Stripe Name** - The Unique Identifier for storing a collection of files. Collection examples: Project, organization, tenant.
   - **Uploaded Date** - The file upload date.
   - **Download File** - Click to download a copy of the uploaded file.

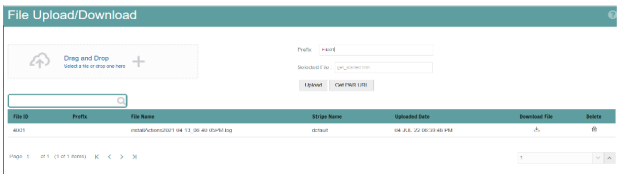
- **Delete** - Click to delete the file.

Related Topics

- Uploading/Downloading a File Using Utility
  Complete the following steps to Upload or Download a file using the Utility.
- Uploading/Downloading a File Using PAR URL
  Complete the following steps to upload or download a file using the PAR URL.

2.3.2.2 Uploading/Downloading a File Using Utility

Complete the following steps to Upload or Download a file using the Utility.



1. Click **Drag and Drop** to browse and select a file for upload from the local directory.

   You can also browse to the local directory from the **File Explorer** and select the file and drop it here.

   The file name is automatically updated in the **Selected File** field.

2. Enter the **Prefix** to be added to the file name.

   The Prefix is added to the file name. In case, you have two files with the same file name, you can save them with different prefixes.
   Example: **/abc/test.txt** and **/def/test.txt**. Both these files have the same file name but different Prefixes.

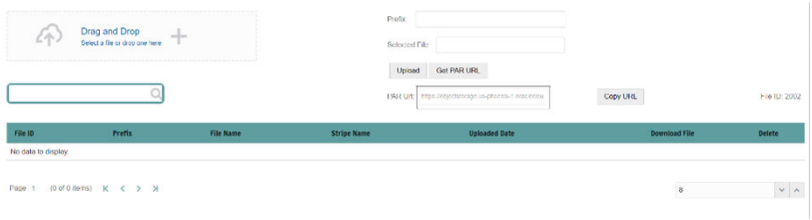
3. Click **Upload** to upload the selected file.

   A confirmation message is displayed after successful upload and the file is listed in the Uploaded Files list.

2.3.2.3 Uploading/Downloading a File Using PAR URL

Complete the following steps to upload or download a file using the PAR URL.

Figure 2-19 Get PAR URL



1. Click **Drag and Drop** to browse and select a file for upload from the local directory.

   You can also browse to the local directory from the File Explorer and select the file and drop it here. The file name is automatically updated in the **Selected File** field.

2. Enter the **Prefix** to be added to the file name.
3. Click **Get PAR URL**.

   This will generate the PAR URL and File ID which are required to upload the file.

   You can also generate PAR URL using Rest API. For more information refer to, Calling the API to Generate the URL.
4. Copy the PAR URL and note the related File ID.
5. You can upload the file content referred with the specific PAR URL into the object store using one of the following options: Console, CLI, or SDK.

   For example, you may use the following curl command directly in local Gitbash.

   ```
   curl -X PUT --data-binary '@<local-filename>' <unique-PAR-URL>
   ```

   You can also use the following command.

   ```
   curl -T '<Filepath>' -X PUT <PAR_URL>
   ```

   You can scan the file referred with the specific File ID (obtained in Step 3) using one of the following options: Console, CLI, or SDK. For example, use the following CURL command to scan the File. Use the File ID.

   ```
   curl -k --location --request PUT 'https://<Host:Port>/<Tenant-ID>/utils-
   service/v1/file/scan/<FileID>' \
   --header 'ofs_tenant_id: <Tenant-ID>' \
   --header 'ofs_service_id: <Service-ID>' \
   --header 'ofs_workspace_id: <WorkspaceId>' \
   --header 'Authorization: Bearer <Generated_Token>'
   ```

   A confirmation message is displayed after successful upload and the file is listed in the Uploaded Files list.

2.3.3 File Upload Automation

To simplify the file upload process, configure and execute the File Upload automation utility.

File Upload automation can be implemented by completing the following steps in sequence.

- #unique_140
- Step 1: Generate Access Token
- Step 2: Generate PAR URL
- Step 3: Upload file to Object Store
- Step 4: Scan the file to ensure Upload was Successful

2.3.3.1 Step 1: Generate Access Token

Generate the Access Token for your Profitability and Balance Sheet Management Cloud Service by:

1. Submitting a RESTful API Post Request to your Oracle IDCS environment as defined in the Identity Cloud Service User Guide. For information, see OAuth Runtime Tokens REST Endpoints.

Note that a sample code snippet has been provided below using cURL to generate the access token for Basic Authorization and assign it to a variable for use within a script:

```
access_token=`curl -s --insecure -H "Authorization: Basic $ENCODED" -H
"Content-Type: application/x-www-form-urlencoded;charset=UTF-8" --
request POST $IDCS_URL -d
"grant_type=password&username=$USERNAME&password=$PASSWORD&scope=urn:op
c:idm:__myscopes__ urn:opc:resource:expiry=9153600" | python3 -c
"import sys, json; print(json.load(sys.stdin)['access_token'])"`
```

2.3.3.2 Step 2: Generate PAR URL

Generate the PAR URL for your Profitability and Balance Sheet Management Cloud Service by:

1. Submitting a RESTful API Post Request to your Cloud Service as defined in the Calling the API to Generate the URL section.

Note a sample code snippet has been provided below using cURL to generate the PAR URL and assign it to a variable for use within a script:

PAR URL Generation Code Snippet

```
curl --location --insecure --request POST "$FILEUPLOADURL" --header
"Authorization: Bearer $access_token" --header 'Content-Type:
application/json' --data-raw "{
    \"fileName\": \"$1\",
    \"fileSize\": \"$2\",
    \"mimeType\": \"$3\"
}" >> "$HOME"/FILEUPLOAD_UTIL/"$1"_PARURLresponse.out 2>&1
```

PAR URL Variable Assignment Code Snippet

```
grep -oE '(https)[^ ]*' "$HOME"/
FILEUPLOAD_UTIL/"$1"_PARURLresponse.out > "$HOME"/
FILEUPLOAD_UTIL/"$1"_PARURLresponse1.csv
    while IFS="," read -r H1 H2
    do
        URLtrim="$H1"
        FinalPAR=${URLtrim::-1}
          echo -e "\n PAR_URL is $FinalPAR"
    done < "$HOME"/FILEUPLOAD_UTIL/"$1"_PARURLresponse1.csv
```

PAR URL Variable Assignment Code Snippet – Used in File Scanning Step

```
grep -oE '(fileId)[^ ]*' "$HOME"/
FILEUPLOAD_UTIL/"$1"_PARURLresponse.out > "$HOME"/
FILEUPLOAD_UTIL/"$1"_PARURLresponse2.csv
    while IFS="," read -r F1 F2
```

```
do
    FILEIDtrim="$F1"
    FINALFILEID=`echo "$FILEIDtrim"| sed -r 's/^.{8}//'`

    echo -e "\n FILE ID is $FINALFILEID"
done < "$HOME"/FILEUPLOAD_UTIL/"$1"_PARURLresponse2.csv
```

2.3.3.3 Step 3: Upload file to Object Store

Upload the file to the Object Store of your Profitability and Balance Sheet Management Cloud Service by:

1. Submitting a RESTful API Post Request to your Cloud Service as defined in the Uploading/Downloading a File Using PAR URL topic.

Note a sample code snippet has been provided below using cURL to upload the file:

```
curl -T "$HOME"/FILEUPLOAD_UTIL/"$1" -X PUT "$FinalPAR"
```

2.3.3.4 Step 4: Scan the file to ensure Upload was Successful

Scan the file that was uploaded to the Object Store of your Profitability and Balance Sheet Management Cloud Service by:

1. Submitting a RESTful API Put Request to your Cloud Service as defined by the code snippet below:

File Scanning Code Snippet – Using File ID from Step 2 – Generate PAR URL

```
if [ $last_error -eq 0 ]; then
        echo -e "\n *****Scanning the File *****"
        curl -k --location --request PUT "$SCANURL/$FINALFILEID" --header
'ofs_tenant_id: $TENANT' --header 'ofs_service_id: OFS_FTP' --header
'ofs_workspace_id: WS001' --header "Authorization: Bearer $access_token"
        last_error=$?
        if [ $last_error -eq 0 ]; then
            echo -e "\n ***File Upload is Successful please check File
Upload / Download UI***"
        else
            echo "Scan failed"
            exit -2;
        fi
    else
        echo "Upload failed"
        exit -3;
    fi
```

2.3.3.5 Automating the File Upload Process Using File Upload Utility

This section provides the procedure including the script to automate the process of uploading input data files using the File Upload utility.

You can download this script from this MoS Doc ID 2927077.1.

2.3.3.5.1 Executing the File Upload Automation Script

File Upload Automation script assists you to upload the files seamlessly.

Complete the following procedure to execute the fileupload automation script.

Python 3.10 is required to access data elements from the API JSON responses.

1. Extract the **FILEUPLOAD_UTIL.zip** file located in the **$HOME** directory.
2. Copy the Data Loader input file (text file) to the **$HOME/FILEUPLOAD_UTIL** directory.
3. Edit the script **Env_setup.sh** file to update the following environment variables.
   - **IDCS URL** - The Service Instance URL to access your IDCS console.
     You can get the IDCS URL from the following menu:

     Oracle Cloud Infrastructure Console > Identity Cloud.

     Syntax: `<idcs-url>/oauth2/v1/token`
   - **Encoded** - The **<OAuth Client ID>:<OAuth Client Secret>** encoded using **base64encode**
     To extract and encode the Client ID and Client Secret, refer to the following steps:
     a. Login to **Admin Console**.
     b. Go to **System Configuration** tab, and click **Component Details** tile.
     c. Click **OAUTH Creds** tab to view and copy the **OAUTH Client ID** and **OAUTH Client Secret** details.
     d. Using any **base64encode** utility, encode <OAUTH Client ID>:<OAUTH Client Secret>.
     Example (Input OAUTH Client ID and Client Secret):

     ```
     ftptenant-prd_APPID:99140e14-4d30-4e86-85fb-09501fe45fe0
     ```

     Example (Encoded OAUTH Client ID and Client Secret):
     ```
     ZnRwcWExMDEyMzEtcHJkX0FQUElEOjBkMmU5MDBiLTlhYjItNGFmOS05OWM0LTEwNTYyMDVkYWYwNQ==
     ```
   - **Username** - The Username to access the application.

     > **Note:**
     > The user should have appropriate roles and privileges. For more information about roles and priveleges, refer to Roles and Functions.
   - **Password** - The password to login to the application.
   - **Tenant** - The tenant associated with the application.
   - **PBSM Host** - Details of the PBSM host on which the application is hosted.
     Sample Env_setup.sh

     ```
     IDCS_URL=https://idcs-xyz123.identity.c9xyz.oc9xyz.com/oauth2/v1/token
     ENCODED=ZnRwbWFydXAxNDIyMzEtcHJkX0FQUElEOjk5MTQwZTE0LTRkMzAtNGU4N
     ```

```
i04NWZiLTA5NTAxZmU0NWZlMA==
USERNAME=<user_name>
PASSWORD=<password>
TENANT=<tenant-prd>
PBSMHOST=dc.pbsmcloud.us-xxxxx -1.ocs.oc-test.com
```

4. Execute **PBSMCS_PAR_fileupload.sh** with the following parameters –
   - **filename** - The file to be uploaded
   - **filesize** - The file size in Bytes
   - **Mimetype** - The mimetype of the file.

   Format: `Filename<space>Filesize<space>mimetype`

   Example: `./PBSMCS_PAR_fileupload.sh input_20150101_filename_example_8007.txt 334 text/plain`

   This script generates the access token and the PAR URL. It also uploads the file into the object store and scans the file too.

   > **Note:**
   >
   > To upload multiple files, you must execute the script for each file, separately.

   Once the script is executed succesfully, the file is uploaded and added to the list of files in the File Upload/Download page. To access the File Upload/Download page refer to Upload or Download File from Object Store Using Console.

2.3.4 Generating PAR URL for File Operations

The PAR URL for File Operations API creates a PAR File that you can use to perform file operations in the Object Store for end-to-end integrations.

2.3.4.1 Generating PAR URL for File Upload

You can use this REST API to generate the PAR URL for File Upload. See the following sections for information on how to perform the POST operation.

Related Topics

- Calling the API to Generate the URL

2.3.4.1.1 End Point Details

- **Method** – POST
- **URL** - `https://<HOST_NAME:PORT>/<TENANT>/utils-service/v1/file/uploadfile/parURL?prefix=<prefix>`
- **Content-Type** - Application/Json

2.3.4.2 Calling the API to Generate the URL

To call the API, follow these steps:

1. Open a relevant tool, such as via cURL command.
2. Prepare a cURL command with the authentication token and other details. For more information refer to the following code.

   Syntax

```
curl -k --location --request POST 'https://<hostname>/<TENANT-ID>/
utils-service/v1/file/uploadfile/parURL?prefix=' \
--data-raw '{"fileName": "<remote filename>", "fileSize": <file
size>, "mimeType": "<file type>"}' \
--header 'ofs_remote_user: <USERID>' \
--header 'locale: en-US' \
--header 'ofs_tenant_id: <TENANT-ID>' \
--header 'ofs_workspace_id: WS001' \
--header 'content-type: application/json' \
--header 'Authorization: Bearer <TOKEN>'
```

   Example (truncated)

```
curl -k --location --request POST 'https://<hostname>/<TENANT-ID>/
utils-service/v1/file/uploadfile/parURL?prefix=' \
--data-raw '{"fileName": "idcs_log1.txt", "fileSize": 100,
"mimeType": "text/plain"}' \
--header 'ofs_remote_user: cneadmin' \
--header 'locale: en-US' \
--header 'ofs_tenant_id: aaitestdev1001-prd' \
--header 'ofs_workspace_id: WS001' \
--header 'content-type: application/json' \
--header 'Authorization: Bearer
eyJ4NXQjUzI1NiI6Ildia25rQUR5TUZIMlhlQ1pKcTY1c3o4VzdEVWhKa0s4MldYY0ha
dk4wWkkiLCJ4
...
...
sQXj0iohsSIEmQXVwwjhhqnc4eJNnmCjx8Tb7TXjx1MIQLeOIcfrIj5gkzoMKX94_7US
xHv-6LhBzw'
```

2.3.4.2.1 Request JSON Parameters

This section provides the list of parameters in the JSON Request.

Table 2-8 Request JSON Parameters

Name	Type	Required	Description
fileName	STRING	Yes	The name of the file to be uploaded. The following are the conditions for to enter in this field: • Must start with an Alphanumeric Character • Allowed characters are alphabets, numbers, and special characters - hyphen(-), dot(.), and underscore(_) • Length of characters must not be greater than 255 characters
fileSize	INTEGER	Yes	The size of the file (in Bytes) to be uploaded. The size of the file should be greater than 1 Byte and should be less than 10 TB. It is recommended to use multipart upload for uploading files of size more than 100 MB. For more information about uploading large objects and multipart uploads, refer to Working with Pre-Authenticated Requests.
mimeType	STRING	Yes	The mime type to be uploaded. The following mime types are allowed: • Text/CSV • Text/plain • DAT

Request JSON Sample

```
 [{
"fileName": "File.csv",
"fileSize": 7654,
"mimeType": "text/csv"
}]
```

2.3.4.2.2 Response JSON Parameters

This section provides the list of parameters in the JSON Response.

Table 2-9 POST JSON Response

Name	Type	Description
fileName	STRING	The name of the file to be uploaded.
uploadURL	STRING	The generated pre-authenticated URL to upload a file.
fileId	INTEGER	The unique File Identifier.

Response JSON Sample

```
{
   "payload": {
       "uploadURL": "https://objectstorage.us-
phoenix-1.oraclecloud.com/p/bdSI-
hzigiAoUU0lyEKnuk0YGs05L172gt_woZAgqNFYmUFQeexV3BDfTO97mhBI/n/
oraclegbudevcorp/b/fsgbu_pbsm_cndevcorp_ftpqa101231-prd_default/o/
default/2023-01-31/jfr/f9ce031f-4a42-471d-b4da-d0577f3eca15",
       "createUser": "user1",
       "stripeName": "default",
       "fileId": 5025,
       "createDate": "2023-01-31T09:14:16",
       "token": "",
       "status": "success"
   }
}
```

2.3.4.3 Viewing List of Uploaded Files

Run the following cURL command to generate and view all the files that are uploaded using PAR URL.

Syntax

```
curl -k --location --request GET 'https://<hostname>/<TENANT-ID>/utils-
service/v1/listfiles stripeName=default' \
--header 'locale: en-US' \
--header 'ofs_remote_user: <user id>' \
--header 'ofs_tenant_id: < TENANT-ID >' \
--header 'ofs_workspace_id: WS001' \
--header "Authorization: Bearer <TOKEN>'
```

Example

```
curl -k --location --request GET 'https://dc.pbsmcloud.us-
phoenix-1.ocs.oc-test.com/aaitestdev1001-prd/utils-service/v1/
listfiles?stripeName=default' \
```

```
--header 'locale: en-US' \
--header 'ofs_remote_user: cneadmin' \
--header 'ofs_tenant_id: aaitestdev1001-prd' \
--header 'ofs_workspace_id: WS001' \
--header "Authorization: Bearer ${TOKEN}"
```

Response

```
      {"payload":
[{"v_file_name":"Idcs_log3.txt","n_file_id":9916,"d_upload_date":"31-JAN-23
      06:33:43 AM","v_stripe_name":"default"},
{"v_file_name":"Idcs_log4.txt","n_file_id":9917,"d_upload_date":"31-JAN-23
      06:40:25 AM","v_stripe_name":"default"}],"count":2}
```

2.3.5 Generating PAR URL For File Download

You can use this REST API to generate the PAR URL for File Download. See the following sections for information on how to perform the post operation.

2.3.5.1 Calling the API to Generate PAR URL for File Download Using File ID

To call the API, follow these steps:

1. Open a relevant tool, such as via the cURL command.
2. Prepare a cURL command with the authentication token and other details. For more information, refer to the following code.

   Syntax

   ```
   curl -k --location --request GET ' 'https://<hostname>/<TENANT-ID> /utils-
   service/v1/file/downloadfile/<file id>' \
   --header 'ofs_remote_user: <userid>' \
   --header 'locale: en-US' \
   --header 'ofs_tenant_id: < TENANT-ID> ' \
   --header 'ofs_workspace_id: WS001' \
   --header "Authorization: Bearer <TOKEN>"
   ```

   Example

   ```
   curl -k --location --request GET 'https://<hostname>/<TENANT-ID>/utils-
   service/v1/file/downloadfile/9916' \
   --header 'ofs_remote_user: cneadmin' \
   --header 'locale: en-US' \
   --header 'ofs_tenant_id: aaitestdev1001-prd' \
   --header 'ofs_workspace_id: WS001' \
   --header "Authorization: Bearer ${TOKEN}"
   ```

   Response

   ```
   {"payload":{"downloadURL":"https://objectstorage.us-
   phoenix-1.oraclecloud.com/p/
   ```

```
gTxxzhqLEea4Or2TRkBqTqHxt_JogVFa9G_0wtN8NYy_op0Zk4lvKGDxxeXGhLq7/n/
oraclegbudevcorp/b/fsgbu_pbsm_cndevcorp_aaitestdev1001-
prd_default/o/default/2023-01-31/fae/2d63d2fe-2090-4fb7-
a4c8-9940d22987db?
httpResponseContentDisposition=ATTACHMENT%3B%20filename%3DIdcs_log3.
txt"}}
```

2.3.5.2 Calling the API to Generate PAR URL for File Download Using File Name

To call the API, follow these steps:

1. Open a relevant tool, such as via the cURL command.
2. Prepare a cURL command with the authentication token and other details. For more information refer to the following code.

Syntax

```
curl -k --location --request GET < 'https://<hostname>/<TENANT-ID>/
utils-service/v1/file/download?fileName=<file
name>&stripeName=default&prefix=' \
 --header 'ofs_remote_user: <userid>' \
 --header 'locale: en-US' \
 --header 'ofs_tenant_id: <TENANT-ID>' \
 --header 'ofs_workspace_id: WS001' \
 --header "Authorization: Bearer <TOKEN>"
```

Example

```
curl -k --location --request GET 'https://<hostname>/<TENANT-ID>/
utils-service/v1/file/download?
fileName=test3GB.xml&stripeName=default&prefix=' \
 --header 'ofs_remote_user: cneadmin' \
 --header 'locale: en-US' \
 --header 'ofs_tenant_id: aaitestdev1001-prd' \
 --header 'ofs_workspace_id: WS001' \
 --header "Authorization: Bearer ${TOKEN}"
```

Response

```
 {"payload":{"downloadURL":"https://objectstorage.us-
phoenix-1.oraclecloud.com/p/8R68eVcQAxQjNjK__S04MZjS-
v4BqEbWSILvu0w40kJNrzfKeCB8vWBwugW5XvsK/n/oraclegbudevcorp/b/
fsgbu_pbsm_cndevcorp_aaitestdev1001-prd_default/o/default/
2023-01-20/rnz/6c023e75-09e2-4265-815e-32cedcd2415e?
httpResponseContentDisposition=ATTACHMENT%3B%20filename%3Dtest3GB.xm
l"}}
```

2.4 Data Maintenance Interface

Data Maintenance Interface (DMI) helps to design a Data Form in a user-specified format. Further, it allows to perform maintenance activities using the Designed Form.

Designer View

The Designer allows the user to design a form to maintain the underlying data.

Data View

This allows the user to maintain the data either through the form that has been defined or do a bulk upload using the excel upload mechanism. A strong data governance process is enabled through an approval workflow of the data maintained.

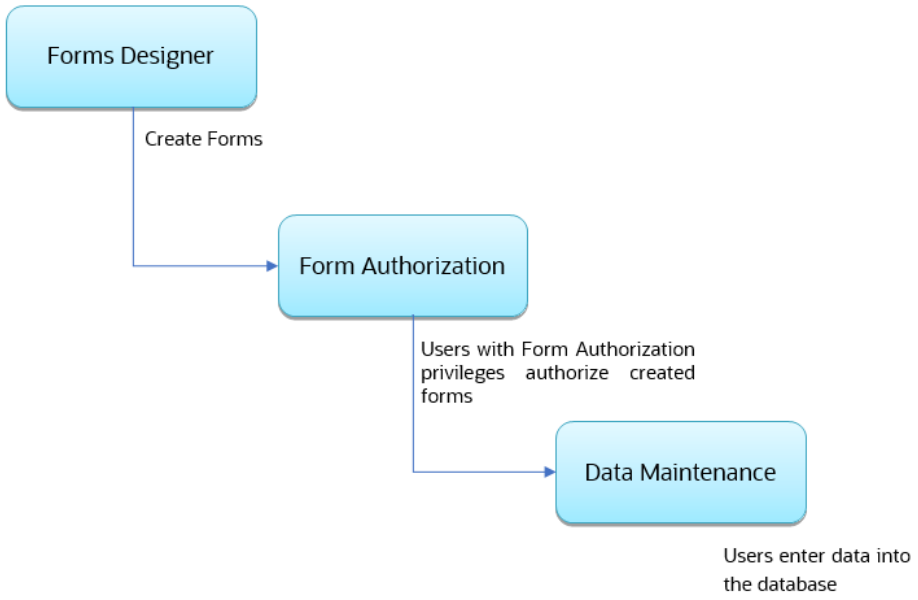
Related Topics

- Process of DMI Windows
- User Role Mapping and Access Rights
- Access the Data Maintenance Interface
- Form Designer Summary Page
- Creating New Forms in Form Designer
- Approving and Rejecting New Form Definitions
- Managing Form Definitions

2.4.1 Process of DMI Windows

The DMI Process starts with a user creating forms in the Form Designer. After the creation of forms, a user with Authorization Privileges authorizes the forms. The Authorized Forms are then used by users to enter data into the database.

Figure 2-20 DMI Process Flowchart



2.4.2 User Role Mapping and Access Rights

User access to the DMI UI and the ability to perform functions in it is dependent on the mapping of the user profile to the roles and the access rights assigned.

To access the DMI features, you must be mapped to the following roles:

Table 2-10 User Role Mapping for Data Maintainence Interface

Role Code	Role Name	Functionality
DMIDSGNREAD	Data Designer Read	Assign this role to the user to access the Configure View menu from Navigation Tree. NOTE: The mapping of this role does not allow view, edit, and add actions.
DMIDSGNAUTH	Data Designer Auth	Assign this role to the user to Authorize, Excel Upload, and Designer Summary.
DMIDSGNREJ	Data Designer Reject	Assign this role to the user to Reject, Excel Upload, and Designer Summary.
DMIDGNFORM	Data Designer Form	Assign this role to the user to Create Designer Form Definition.
DMIDGNTEMPLATE	Data Designer Template	Assign this role to the user to Create Excel upload Definition.

Table 2-10 (Cont.) User Role Mapping for Data Maintainence Interface

Role Code	Role Name	Functionality
DMIDSGNDEL	Data Designer Delete	Assign this role to the user to Delete, Excel upload, and Designer Summary.
DMIDGNVIEW	Data Designer View	Assign this role to the user to Create View Definition.
DMIDSGNWRITE	Data Designer Write	Assign this role to the user to Add, Edit and Copy all kinds of definitions in Designer screen.
DMIDATAREAD	Data Entry Read	Assign this role to the user to access the Data View menu from the Navigation Tree. NOTE: The mapping of this role does not allow view, edit, and add actions.
DMIDATAALL	Data All Summary	Assign this role to view the list of all Component Records in Data Entry Screen.
DMIDATAWRTE	Data Entry Write	Assign this role to the user to Add, Edit Records in Data Entry Screen.
DMIDATADEL	Data Entry Delete	Assign this role to the user to Delete a Record Summary Data Entry Screen
DMIDATAAUTH	Data Entry Auth	Assign this role to Authorize a Record Summary in Data Entry Screen.
DMIDATAREJ	Data Entry Reject	Assign this role to Reject a Record Summary in Data Entry Screen.
DMIDGNAUTO	Enable Auto Approve	The user mapped to this function will have access to create Auto Approved Forms

Note:

All the DMI roles are mapped to a single group, Data Maintenance admin group. If a user is mapped to this group all the DMI roles are automatically assigned to the user.

2.4.3 Access the Data Maintenance Interface

To access the Data Maintenance Interface (DMI), proceed with the following steps:

1. Login to your Oracle Cloud account, with the required credentials to access DMI.
2. Select an application, to access the DMI for that application.

   For example, to access DMI for CFECS, select **Cash Flow Engine Cloud Service (CFECS)**.

> **Note:**
>
> The navigation steps vary for different applications. Refer to the respective application documentation for accessing Data Maintainence Interface.

3. Click **Data Management Tools** and click **Data Management Interface**.

   The **Navigation List** is displayed.

4. Click one of the following menu items to access the respective windows:
   - Designer View
   - Data View

2.4.4 Form Designer Summary Page

You can create forms from the Form Designer View. The forms in the application are created with details configured for data maintenance and require authorization for use after creation.

To view the Forms Designer page, follow these steps:

1. Click **Data Maintenance Interface**.
2. Click **Designer View**, in the DMI navigation list.

   The Form Definitions Summary page comprising the list of Form definitions is displayed. The following details are included the Summary page.

Table 2-11 Field Description

Field	Description
Name	The unique name of the Form Definition.
Status	The processing status of the form definition. The various processing statuses are: • **Draft** – when the form is under development and is yet to be submitted for approval. • **Waiting for Approval** – When the approval is pending. • **Approved** – When the form definition is approved.
Type	The form definition type: • **Data Exporter** – creates form based on an entity table. • **Excel Upload** – creates form based on uploaded Excel Sheet. • **View** – Creates form based on Database views. • **Designer** – creates the form based on the entities, attributes and rulesets provided by the user.
Description	The Form Definition description.
Created By	The username of the logged in User who created the form.

It has a Search tile to search for forms and a Forms tile that shows a list of existing forms in the application. You can sort the Form definition based on Name, Description and Created By fields.

To filter and view Form definitions with a specific processing status, click the respective status name in the top of the page.

You can also add, edit, view, and delete forms, from the Forms Definitions Summary page, based on the assigned roles and privileges. For more information, refer User Role Mapping and Access Rights.

Related Topics

- Creating Forms Using Data Exporter
  Forms created using Data Exporter are used to export table data to CSV or JSON format.
- Creating Forms Using Excel Upload
- Creating Forms Using View
- Creating Forms Using Designer

2.4.5 Accessing Information in Summary Page

A Form definition Summary Page contains a list of existing Form definitions. You can search, filter, and customize the view to access the required data.

2.4.5.1 Searching a Summary Page

Search for forms in the application from this pane. The search pane is common to all the windows in DMI and shows at the top. Enter search terms in the **Form Name** or **Form Code** field, or use a combination of both the fields. Click **Search**. The search result is displayed in the Forms pane. Click **Cancel**, to clear the search criteria and view all the form records.

Select the required records, to view data, and edit or delete records.

2.4.5.2 Sorting a Summary Page

You can sort the Definitions list using **Name**, **Description** and **Created By** fields. You can also sort the page in ascending/descending order.

2.4.5.3 Setting Number of Records Per Page

At the bottom of the page, you can enter the number of entries that are available on a single page in the Records box. By default, this value is set to 10.

You can increase or decrease the number of entries that are displayed using the up and down arrows.

To access a particular page, enter the page number in the Page Box located at the bottom of the page.

To navigate between pages, use the following buttons:

- Use the **First Page** («) to view the entries in the First page.
- Use the **Previous Page** (‹) to view the entries in the Previous page.

- Use the **Next page** ( ) to view the entries in the Next page.
- Use the **Last page** ( ) to view the entries in the Last page.

2.4.6 Creating New Forms in Form Designer

Form creation involves selecting entities, displaying columns with attributes on the form, and if required, selecting authorization of data. Security settings provide for the creation of specific-user access for the forms and authorization.

To add a form, follow these steps:

1. In the DMI Summary page, click **Add**.

   The **Create Forms Definition page** is displayed.

2. Enter/select the following details.

Table 2-12 Field Description

Field	Description
Type	Select the Definition Type: • **Data Exporter** – creates form based on an entity table. • **Excel Upload –** creates form based on uploaded excel sheet. • **View** – Creates form based on Database views. • **Designer** – creates the form based on the entities, attributes and rulesets provided by the user.
Code	The application generates a unique value for Form Code and does not require any input.
Name	Enter the name of the form in Form Name. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.
Description	The Form Definition description. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed
Created By	The username of the logged in User who created the form.

3. 3. Click **Apply** to create a new Form definition or **Close** to cancel the Form creation process.

   The **New Form Configuration page** is displayed based on the selected input type.

   For more information about each form creation method, refer to the respective sections:

Related Topics

- Creating Forms Using Data Exporter
  Forms created using Data Exporter are used to export table data to CSV or JSON format.
- Creating Forms Using Excel Upload
- Creating Forms Using View
- Creating Forms Using Designer

2.4.6.1 Creating Forms Using Data Exporter

Forms created using Data Exporter are used to export table data to CSV or JSON format.

You can also include filters and Dynamic placeholders to view and export specific set of data.

1. Select **Data Exporter** in Create New Form Definition page.
2. Enter the following details:
   - **Source** - Select one of the following input sources for the new form definition.
     - Table
     - View
   - **Code** - The application generates a unique value for Form Code and does not require any input.
   - **Name** - The name of the form in Form Name. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.
   - **Description** - The Form Definition description. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.
   - **Created By** - The username of the logged in User who created the form.
3. Click **Apply** to proceed with the Form creation.

   Click **Close** to return to the Form Designer Summary Page.

   The **Table selection** tab is displayed.
4. Select the Table from the drop-down list and click **Apply**.

   The **Attributes tab** is displayed.
5. Click the drop-down arrow corresponding to the table in the **Entity Name** field.

   The source attributes from the table and the mapped attributes from the Excel file are displayed.

   If the selected table has Child tables, the Child tables that you select from the Mapped Entities tab are also displayed in the **Attributes** tab. You can configure the attributes for the master table and its child tables.
6. Click **Filter** to apply filters to the form data. For more information, refer Creating Data Filters for New Form Definitions.
7. Select **Participate in Data Security** if you want to configure a specific condition. The condition that you configure is applicable when a user performs the data entry for the table records for each approved Forms Definition from the Data Entry Page. For more information, refer Enabling Data Security for New Form Definitions.
8. Click **Select columns** to view only specific columns.
9. Click **Data Preview** to preview the form data.

10. Select **Auto Approve** if you do not want to the Forms Definition through the PMF workflow. When you select this option, the Forms Definition is automatically approved from Forms **Definition Summary Page** and is available for Data Entry. A user with the required role can then perform the data entry without the need for an approval process. For more information, see Enabling Data Security for New Form Definitions.
11. Click **Save as Draft** if you want to save the Forms Definition in draft format.
12. Click **Submit** if you want to submit the Forms Definition for approval.

2.4.6.2 Creating Forms Using Excel Upload

Excel Upload Definition Type creates new forms based on the uploaded Excel file that has column names as per the table in the application data source. You can also modify the mapping for the attributes while you create the Forms Definition. When the Forms Definition that you create using the Excel option is approved from the Forms Definition Summary Page, users with the necessary role and permission can perform Data Entry for the records updated by the Excel file.

1. Select **Excel Upload** in Create New Form Definition pane.
2. Select **Auto Map Entities**, to auto map the attributes in the Excel file with the attributes in the Entity Table.
3. Enter the following details:

Table 2-13 Field Description

Field	Description
Code	The application generates a unique value for Form Code and does not require any input.
Name	The name of the form in Form Name. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.
Description	The Form Definition description. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.
Created By	The username of the logged in User who created the form.

4. Click **Apply**.

   The **File Upload tab** is displayed.
5. Enter the following details. a name and description for the excel template in the Template Name, and Description Fields.

Table 2-14 Field Description

Field	Description
Name	nter the name of the form in Form Name. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.

Table 2-14 (Cont.) Field Description

Field	Description
Description	The Form Definition description. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.
Created By	The username of the logged in User who created the form.

6. Click **Drag and Drop** and select the excel file to update the required table.

> **Note:**
>
> You can also drag and drop the required excel file in the Drag and Drop Field.

The excel file is uploaded and a confirmation box is displayed.

The **Mapped Entities Tab** is displayed.

7. Enter the name of the table that you want to modify in the Primary Entity Field.

   If the table has Child tables, the Child tables also get displayed in the **Mapped Entities** tab. You can select the required child tables for which data should be input during data entry.

8. Select **Enable Bulk Authorization** if you want to enable the bulk authorization of all the records when you edit an approved Form from Data Entry.

9. Click **Apply**. To update the data in the mapped attribute tab, you have click **Apply** every time you update the Mapped entities.

   The **Mapped Attributes Tab** is displayed.

10. Click the drop-down arrow corresponding to the table in the Entity Name.

    The source attributes from the table and the mapped attributes from the Excel file are displayed.

    If the selected table has Child tables, the Child tables that you select from the Mapped Entities tab are also displayed in the Attributes tab. You can configure the attributes for the master table and its child tables here.

11. Click the required mapping in the **Override Mapping Column** and enter the required attribute name if you want to change the default mapping.

12. Click **Select Columns** to select the columns for bulk update, during Data entry.

13. Select **Participate in Data Security** if you want to configure a specific condition. The condition that you configure is applicable when a user performs the data entry for the table records for each approved Forms Definition from the Data Entry Page. For more information, refer Enabling Data Security for New Form Definitions.

14. Click **Filter** to apply filters to the form definition.

    This filters the data based on specified filter conditions. For more information, refer Creating Data Filters for New Form Definitions.

15. Click **User Security** to select the user or user groups who can perform data entry to maintain the data in the table. For more information about adding user security, refer to Enabling User Security for New Form Definitions.
16. Click **Data Preview** to preview the form data.
17. Select **Auto Approve** if you do not want to the Forms Definition through the PMF workflow. When you select this option, the Forms Definition is automatically approved from Forms Definition Summary page and is available for Data Entry. A user with the required role can then perform the data entry without the need for an approval process. For more information, see User Role Mapping and Access Rights.
18. Click **Save as Draft** if you want to save the Forms Definition in draft format. The form is added to the summary page with Draft status.
19. Click **Submit** if you want to submit the Forms Definition for approval. For more information refer to Approving and Rejecting New Form Definitions. After approval/ auto approval, the form is added to the Form Definition Summary page.

2.4.6.3 Creating Forms Using View

View Definition Type creates new forms based on Database views. You can also download the Database data in CSV format.

1. Select **View** Option in Create New Form Definition pane.
2. Enter the following details:

Table 2-15 Field Description

Field	Description
Code	The application generates a unique value for Form Code and does not require any input.
Name	Enter the name of the form in Form Name. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.
Description	The Form Definition description. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.
Created By	The username of the logged in User who created the form.

3. Click **Apply**.

   The **View Selection tab** is displayed.

4. Click **Apply**.

   The **Attribute Selection Tab** is displayed.

5. Click the drop-down arrow in the **View Name** field.

   The source attributes from the table and the mapped attributes from the Excel file are displayed. If the selected table has Child tables, the Child tables that you select from the Mapped Entities tab are also displayed in the Attributes tab.

6. Click the check-box next to an Attribute Name , to include the Attribute in the Form definition.

   To remove the attribute from the form definition, uncheck the selection.

7. Click **Filter** to apply filters to the form definition.

   For more information, refer Creating Attribute Filters for New Form Definitions.

8. Click **Apply**.

   The **Data Preview Tab** is displayed. You can view the sample form based on the selected view, attributes and filter conditions.

9. Click **Download CSV** to download the preview data.

10. Click **Save as Draft** if you want to save the Forms Definition in draft format.

11. Click **Submit** if you want to submit the Forms Definition for approval.

2.4.6.4 Creating Forms Using Designer

You can use the Designer option to create a Forms Definition and select the table and attributes that you want to modify. When the Forms Definition that you create using the Designer option is approved from the Forms Definition Summary Page, you can enter the values for the table records in the approved Forms Definition from Data Entry.

To create a Forms Definition by using the Designer option, perform the following steps:

1. Select **Designer** in Create New Form Definition page.

2. Enter the following details:

Table 2-16 Field Description

Field	Description
Code	The application generates a unique value for Form Code and does not require any input.
Name	The name of the form in Form Name. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.
Description	The Form Definition description. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.
Created By	The username of the logged in User who created the form.

3. Click **Apply**.

   The **Entities tab** is displayed.

4. Select the table that you want to modify in the **Primary Entity** Field.

   If the selected table have child tables, the child tables is also displayed. You can select the required Child tables for which you wish to input the data during data entry.

> **Note:**
>
> You can select up to four Child tables only for each Master table.

5. Select **Enable Bulk Authorization**, if you want to enable the bulk authorization of records while performing data entry.
6. Click **Apply**.

   The **Attributes tab** is displayed.
7. Click the drop-down arrow corresponding to the table in the Entity Name field.

   The attributes in the entity table are displayed.

   If your table has Child tables, the Child tables that you select from the Entities tab also gets displayed in the Attributes tab.
8. Select the attributes for which you want to modify the data from the Attribute Name field.
9. Select **Participate in Data Security i**f you want to configure a specific condition. The condition that you configure is applicable when a user performs the data entry for the table records for each approved Forms Definition from the Data Entry Page. For more information, refer Enabling Data Security for New Form Definitions.
10. Click **Filter** to apply filters to the form definition.

    For more information, refer Creating Attribute Filters for New Form Definitions.
11. Click **Select Columns** to search and select specific columns.
12. Click **Apply**.

    The **Ruleset Tab** is displayed. This tab enables you to give permission to add data during data entry for those attributes that are set to Editable mode. The key fields that cannot be modified are set to Read-only mode.

    Attributes that you select from the Child tables are also displayed in the Ruleset tab.
13. Select the checkbox corresponding to **Allow Add column** for the attributes that you want to modify.
14. Click **User Security** to select the user or user groups who can perform data entry to maintain the data in the table. For more information about adding user security, refer to Enabling User Security for New Form Definitions.
15. Select **Auto Approve i**f you do not want to the Forms Definition through the PMF workflow. When you select this option, the Forms Definition is automatically approved from Forms Definition Summary Page and is available for Data Entry.

    A user with the required role can then perform the data entry without the need for an approval process. For more information, see Enabling Data Security for New Form Definitions.
16. 16. Click **Save as Draft** if you want to save the Forms Definition in draft format.

    Click **Submit** if you want to submit the Forms Definition for approval.

2.4.6.5 Creating Data Filters for New Form Definitions

Complete the following steps if you want to add filters to the Forms Definition:

1. Click **Launch Filter** Condition.

   The Filter Condition pane is displayed.

2. Enter/ select the following details.

   - **Column** - Select the column from the applying the filter.
   - **Condition** - Select one of the following filter conditions, to filter the column data.
     - **=** - Equal to
     - **IN** - <Verify>Validates the filter condition and return True or False.
     - **<>** - Not equal to
     - **<** - Lesser than
     - **<=** - Lesser than or equal to
     - **>** - Greater than
     - **>=** - Greater than or equal to
     - **IS** - <TBD>
   - **Type** - Select one of the following filter types.
     - **Static** - Select Static, to enter a value and execute the filter using only one value. You cannot change the value at a later point.
     - **Dynamic** - Select Dynamic, to change the filter value when needed.
       After setting the filter type to Dynamic, select the **Placeholder** and set one of the default seeded values, to process the filter.

     > **Note:**
     >
     > Only values that are already seeded in the Database table, are displayed in the Placeholder drop-down list.

   - **Filter Value** - Select/enter the filter value.

     > **Note:**
     >
     > For Language Placeholder the default locale language is displayed and cannot be modified.

3. Click **Add**. to add a new Filter expression. You can add multiple Filter expressions to the same filter.

   The filter is added to the list of filters.

   Mouse-over the place holder filter, to view more details about the filter.

4. Click **Validate** to verify the filter condition is valid.

   A confirmation is message is displayed, if the filter is valid.

5. Click **Apply**.

   The filter is displayed in the Filter Condition Field.

6. Click **Reset**, to clear all the filter expressions and create a new expression.
7. Click **Delete** to delete an existing filter expression.
8. Click **Edit** to modify a filter expression. After editing the expression, click **Validate**, to verify if the condition is valid.
9. Click **Apply** to add the filter expression to the form definition.

2.4.6.6 Enabling Data Security for New Form Definitions

Data security conditions allows you to apply certain filters when a user performs the data entry for the table records for each approved Forms Definition from the Data Entry page.

For example, consider that you configure the condition `COUNTRY_NAME = 'INDIA'` for the reference table **DIM_COUNTRY**. When a user performs the data entry for this Forms Definition from the Forms Definition - Summary Page and enters a country name other than 'INDIA', the record gets rejected by the application when another user approves this record.

Complete the following steps to configure Data Security for the Forms Definition:

1. Select the check box next to the **Attribute Name**, in the **Participate in Data Security** Column.

   > **Note:**
   >
   > Data Security information must be configured for each attribute name, separately.

2. Click **Data Security**.

   The **Data Security page** is displayed.

3. Select the table based on which you want to build your condition from the Reference Table drop-down list.
4. Build your expression by selecting the required column, condition, and filter value.
5. Click **Apply**.

2.4.6.7 Enabling User Security for New Form Definitions

The User Security option helps you to select the users/user groups who can add, edit, delete and/or authorize data entry.

1. Click **User Security** to select the user or user groups who can perform data entry to maintain the data in the table.

   The **User Security** page is displayed.

2. Enter the required user group or user to assign permissions from the Map Users / Groups Field.

When you select the user group or user, the permissions for each approved Forms Definition are displayed. These permissions are the actions that the selected user group or user can perform while performing Data Entry.

Table 2-17 Permissions in the Map Users / Groups Pane

Option	Description
Add /Edit	Add or modify records in an approved Forms Definition
Delete	Delete records in an approved Forms Definition
Authorize	Authorize the records in an approved Forms Definition
Duration From	Optional. Select the start date for which the permissions are available to the user or user group.
Duration To	Optional. Select the end date for which the permissions are available to the user or user group.

The User Security Configuration is complete.

> **Note:**
>
> If you select a user group for User Security, you can view the users mapped to that group by clicking the **Users** icon.

2.4.7 Approving and Rejecting New Form Definitions

You can validate and approve the new Forms Definition if you have the required role assigned to you.

If the configuration in the Forms Definition is incorrect, you can reject the Forms Definition. The rejected Forms Definition changes into Draft status. You can then request the required user to edit the Forms Definition and submit it for approval again.

You can also view, copy, and edit each Forms Definition from the Forms Definition – Summary page by clicking Menu. These actions are available based on the roles assigned to you. For more information, refer User Role Mapping and Access Rights.

2.4.7.1 Approving a Forms Definition

You can approve new forms based on the assigned roles. For more information about the roles, refer. User Role Mapping and Access Rights.

To approve a Forms Definition, perform the following steps:

1. In the Designer View, click **Menu** in the Forms Definition that is in Awaiting status, and then click **Approve**.

   The **Configure page** is displayed.

2. Click **Approve** and then enter the required description for the approval in the Comments field.
3. Click **Submit**.

The Forms Definition is approved and is displayed in the **Data Entry page**as a new entry.

2.4.7.2 Rejecting a Forms Definition

You can reject new forms based on the assigned roles. For more information about the roles, refer. User Role Mapping and Access Rights.

To reject a Forms Definition, perform the following steps:

1. In the Designer View, click **Menu** in the Forms Definition that is in Awaiting status, and then click Reject.

   The **Configure page** is displayed.

2. Click **Reject** and then enter the required description for the approval in the Comments field.

3. Click **Submit**.

   The Forms Definition is rejected, moved to draft status. The form definition is displayed in Forms Definition Summary page. You can then edit the Forms Definition in draft status and submit it for approval again.

   For more information on editing a Forms Definition, see Editing Form Definitions.

2.4.8 Managing Form Definitions

You can view, edit, copy, and delete the existing Form Definitions from the Form Definition Summary Page, based on the assigned roles. For more information, refer to User Role Mapping and Access Rights.

In the Summary Page, highlight a specific Definition and click **Action**. The following options are displayed:

Table 2-18 Action Details

Action	Description
View	View the **Member details** for a specific Member Definition.
Edit	Edit the **Member details** of a form definition.
Copy	Copy the Member Definition Details and create another Member Definition by changing Alphanumeric Code, Numeric Code and Name.
Upload	Upload a new Excel sheet for an Excel upload form definition. You need to delete the attached excel sheet before uploading the new data.
Delete	
Approve	If you have the required role, you can approve a new Form that is in Awaiting Approval status. For more information, refer to Approving a Forms Definition.

Table 2-18 (Cont.) Action Details

Action	Description
Reject	If you have the required role, you can approve a new Form that is in Awaiting Approval status. For more information, refer to Rejecting a Forms Definition.

2.4.8.1 Viewing Form Definitions

To view a form definition, you will require specific roles. For more information about Roles, refer User Role Mapping and Access Rights.

You can view the details of an individual Form Definition, using the following procedure:

1. Highlight the Form Definition and click **Action**.
2. Click **View**.

   The **Form Definition page** is displayed.

2.4.8.2 Editing Form Definitions

Editing form details requires specific assigned roles. For more information about the roles, refer User Role Mapping and Access Rights. Forms that are already approved cannot be edited.

You can edit individual Definition Details, using the following procedure:

1. Highlight the Definition and click the Action button
2. Click **Edit**.

   The **Form Definition page** is displayed with the details.
3. Edit the required information and click **Save**.

2.4.8.3 Copying Form Definitions

You can copy form details, based on the assigned roles. For more information about the roles, refer. User Role Mapping and Access Rights.

You can copy individual Definition Details, to recreate another new Definition, using the following procedure:

1. Highlight the Definition and click **Action**.
2. Click **Copy**.

   The **Form Definition Page** is displayed with the Details.
3. Edit the unique information and modify details like entity table, attribute filters, user and data security details and click **Save**.

2.4.8.4 Re-Uploading Form Definitions

You can upload a new Excel Sheet based on the assigned roles.

For more information about the roles, refer. User Role Mapping and Access Rights.. You can change the Excel Sheet attached to an Excel Upload form Definition, using the following procedure:

1. Highlight the Definition and click **Action**.
2. Click **Upload**.

   The **Definition page** is displayed with the details.
3. In the Entities tab, click **Remove**, to delete the existing Excel sheet.
4. Click **Drag and Drop** and select the new Excel sheet to be uploaded.

2.4.8.5 Deleting Form Definitions

You can only delete the form definitions that are in Draft status, you can delete a form based on the assigned roles. For more information about the roles, refer. User Role Mapping and Access Rights.

Highlight the draft form definition and click **Delete**.

2.4.9 Data View

The Data View feature of Data Maintenance Interface (DMI) enables you to maintain or modify the table data by using the Forms Definition that is created and approved from Forms Definition Summary page. For more information on Forms Definitions, see Creating Forms Definition.

If the approved Forms Definition is created by using the designer option, a user with the necessary role can add or modify the records in the table as per the configuration in the Forms Definition. These records are then sent to another user with the necessary permission for final approval.

If the approved Forms Definition is created by using an Excel file, a user with the necessary permission can verify and approve the records that are modified with the values from the Excel file. If the records modified by the Excel file are incorrect, the user can reject the records. The rejected record can be modified by a different user with the necessary role and can be sent for the final approval again. The Forms Definitions that are created by using an Excel file are labeled with an Excel icon in Data Entry.

2.4.9.1 Viewing Data Entry

You can view records based on the assigned roles. For more information about the roles, refer. User Role Mapping and Access Rights.

Complete the following steps to view Data entry:

1. Login to your Oracle Cloud account, with the required credentials to access DMI.
2. Select an application, to access the DMI for that application.

   For example, to access DMI for CFECS, select **Cash Flow Engine Cloud Service (CFECS)**.

> **Note:**
>
> The navigation steps vary for different applications. Refer to the respective application documentation for accessing Data Maintainence Interface.

3. Click **Data Management Tools** and click **Data Management Interface**.

   The **Navigation List** is displayed.

4. Click **Data View**.

   The **Data Entry page** is displayed. All the approved forms are displayed in the Data Entry page. Forms in Draft and Awaiting Approval status can be accessed from the Designer View page.

2.4.9.2 Data Entry – Forms Created Using Designer

If the Forms Definition is created by using the designer option, the user with the necessary role can enter the values for the table records as per the configuration in the Forms Definition. This user can also add or delete records. These records are then submitted for approval to another user with the necessary role. For more information, refer to User Role Mapping and Access Rights.

Complete the following procedure, to update/delete data in the table records:

1. Click **Menu** button in the required Forms Definition from the Data Entry Page.
2. Click **Edit**.

   The **Entity Details Page is** displayed.

   The records are classified based on the following Status:

   - **Draft** – Records that are created but not submitted. In Draft state, you can add, new rows or delete/edit an existing row submit for Auto-approval.
   - **Ready** – Records that are approved. You can only edit the records.

   For adding/deleting records and editing existing draft or Ready records, refer to the following sections:

Related Topics

- Adding/Editing a Draft Record
- Deleting Draft Records

2.4.9.2.1 Adding/Editing a Draft Record

To Add or Edit a draft record, follow these steps:

1. Select **Draft** from the Status drop-down list.

   The entity records with Draft status are displayed.

2. To add a new record, click **Add**.

   A new entry with Draft Status is added to Entity details page. This entry is empty. Edit the record to add the attribute details.

3. To edit a record, click **Edit** next to the record.

   The **Edit page** is displayed.

4. Enter the values in the attributes that you want to modify and click **OK**.

   You can repeat the steps for all the records for which the data needs to be entered.

5. Click the modified record in draft status, and then click **Submit for Approval** or **Submit with Auto Approval**.

   If the record is submitted with Auto approval, it is approved instantaneously.

   If the record is submitted for approval, is sent for approval, and is changed to **Awaiting status**. A user with the necessary role can approve these records. For more information, see Approving and Rejecting Records after Data Entry.

   After Approval, the status is changed from Draft to Ready. Refer Editing Approved Records, to edit the records in Ready Status.

> **Note:**
>
> If the user has configured the Participate In Data Security option while creating a Forms Definition, you must enter the value as per the configured condition. If you enter a value that does not meet the condition, then the record is rejected by the application and the approval gets failed. You can view the details of the rejection by using the Audit trail option for each record. For information on the Participate In Data Security option, see Enabling Data Security for New Form Definitions.

2.4.9.2.2 Deleting Draft Records

You can delete the records in Draft status. If the record is approved and moved to Ready status, it cannot be deleted.

1. Select **Draft** from the Status drop-down list.

   The entity records with Draft status are displayed for entering data are displayed.

2. Select a record and click **Delete**.

   To delete multiple records, select all the required records and click **Delete**.

   To bulk delete all the records, select the Check box on the Header. All the records are selected. Then, click **Delete**.

2.4.9.2.3 Editing Approved Records

The Approved records are set to Ready Status. When you edit the record, it is moved to Draft Status.

1. Select **Ready** from the Status drop-down list.

   The entity records with Ready status are displayed for entering data are displayed.

2. To edit a record, click **Edit** next to the record.

   An edit pane is displayed.

3. Update the values for the attributes that you want to modify and click **OK**.

4. Enter a valid reason for modification.

   You can repeat the steps for all the records for which the data needs to be entered.

5. Click the modified record in draft status, and then click **Submit for Approval** or **Submit with Auto Approval**.

   To submit multiple records, select all the required records and click **Submit**.

   To bulk submit all the records, select the Check box on the Header. All the records are selected. Then, click **Submit**.

   If the record is submitted with Auto approval, it is approved instantaneously. The record is sent for approval and is changed to Awaiting status. A user with the necessary role can approve these records. For more information, see Approving and Rejecting Records after Data Entry.

2.4.9.3 Forms Created Using Excel Upload

When a Forms Definition created using an Excel file is approved from Forms Definition Summary Page, the table records in the selected table are updated using the data in the Excel file. These records are in Awaiting status for the approved Forms Definition in Data Entry. You can verify the records modified by the Excel file records and approve them if you are assigned to the necessary role. If the records modified by the Excel file are incorrect, you can reject the records. The status of the rejected records is changed to Draft. A user with the necessary role can edit the records in draft status and submit them for approval again.

- To approve records, see Approving a Record.
- To reject records, see Rejecting a Record.
- To edit a record in draft status, see Editing a Rejected Record.

2.4.9.4 Approving and Rejecting Records

A user with the necessary role can approve or reject the edited records. For more information, refer to User Role Mapping and Access Rights.

2.4.9.4.1 Approving Draft Records

To approve records that are in the Draft status, perform the following steps:

1. In the **Entity Details page**, select **Draft** from the Status drop-down list.

   The entity records with Draft status are displayed.

2. Select the required record.

   You can select multiple records, to perform bulk Approval. Bulk Approval is enabled only if Bulk Authorization is activated during Form Creation.

3. Enter the required comment in the Comments Field, and then click **Approve**.

   The record is approved successfully with the values from the Excel file.

2.4.9.4.2 Rejecting a Record

To reject a record in Awaiting status, perform the following steps:

1. Click **Menu button** in the required Forms Definition from the Data Reporting - Data Entry page.

2. Click **Edit**.

   The Entity Details page is displayed. The records that are waiting for the final approval are displayed here.

Select the required record, and then click **Reject**.

You can select multiple records to perform bulk rejection. Bulk rejection is enabled only if Bulk Authorization is activated during Form Creation.

3. Enter the required comment in the Comments field, and then click **Reject**.

   The record is rejected, and the status is changed to **Draft**. A user with the necessary role can now edit the record.

2.4.9.4.3 Editing a Rejected Record

You can edit the records that are in draft status and send them approval to the user with the necessary role.

To edit a record, perform the following steps:

1. Select **Draft** from the Status drop-down list.
2. Click **Edit** in the record that you want to edit.

   The Edit pane is displayed.
3. Modify the required attributes, and click **OK**.
4. Select the record and then click **Send for Approval**.

   The modified record is now moved to **Awaiting** status. A user with the necessary role can approve the record.

> **Note:**
>
> If the user has configured the Participate In Data Security option while creating a Forms Definition, you must enter the value as per the configured condition. If an incorrect value is entered, the record gets rejected by the application and the approval is failed. You can view the details of the rejection by using the Audit Trail option for each record. For information on the Participate In Data Security option, see Enabling Data Security for New Form Definitions.

2.4.9.5 Audit Trail

The Audit Trail option for each record enables you to view the history of changes made to that record.

2.5 Data Quality Framework

Data Maintenance Interface (DMI) helps to design a Data Form in a user-specified format. Further, it allows to perform maintenance activities using the Designed Form.

Data Quality Framework within the Infrastructure system facilitates you to define rules and execute them to query, validate, and correct the transformed data existing in an environment. This framework includes the following components:

- Data Quality Rules: Data Quality Rules allows you to create a DQ (Data Quality) definition and perform Data Quality checks using Single column and Multi-column checks.

- Data Quality Groups: Data Quality Groups facilitates you to logically group the defined DQ definitions.

2.5.1 Roles and Functions for Managing DQ Framework

The following roles and function are required to create, view and manage the Rules and Groups in DQ Framework.

Role	Action
DQACC - DQ Access	Data Quality Rule Access Role
DQADVND - DQ Advanced	Data Quality Rule Advanced Role
DQAUTH - DQ Authorize	Data Quality Rule Authorize Role
DQAUTOAUTHR - DQ Auto Authorize Rulw	Data Quality Auto Authorize Rule
DQREAD - DQ Read	Data Quality Rule Read-only Role
DQWRITE - DQ Write	Data Quality Rule Write Role

Functions	Action
DQ_SUMM - Data Quality Rule Summary	Access DQ Rule Summary
DQ_GP_EXEC - Execute Data Quality Group	Execute DQ Rule Group
DQ_GP_ADD - Add Data Quality Group	Add DQ group
DQ_ADD - Add Data Quality Rule	Add DQ Rule
DQ_EDT - Data Quality Edit Rule	Edit DQ Rule
DQ_VIW - Data Quality View Rule	View DQ Rule
DQ_GP_VIW - Data Quality View Rule Group	View DQ Rule Group
DQ_GP_DEL - Data Quality Delete Rule Group	Delete DQ Rule Group
DQ_DEL - Data Quality Delete Rule	Delete DQ Rule
DQ_AUTH - Data Quality Authorisation Rule	Authorize DQ Rule
DQ_GP_EDT - Data Quality Edit Rule Group	Edit DQ Rule Group
DQ_GP_ADD -Data Quality Add Rule Group	Add DQ Rule Group
DQAUTOAUTH - Data Quality Auto Authorize	Save the Rule/Group in authorized state
DQ_PURGE - DQ Rule Purge	Purge the DQ Rule
DQ_GP_SUMM - Data Quality Group Summary	Access DQ Group Summary
DQ_GP_EXEC - Data Quality Execute Rule Group	Execute DQ Rule
DQ_GP_PURGE - DQ Group Purge	Purge the DQ Group
DQ_GP_AUTH - DQ Group Authorisation	Authorize DQ Group
DQ_EXE_SUMMARY- DQ Execution Summary	Access DQ Execution Summary
DQ_EXE_ASSIGN - DQ Execution Assignment	Enable Data correction in the execution summary

2.5.2 Data Quality Rules

Data Quality Rules allows you to create a DQ (Data Quality) definition using data quality checks based on single column or multiple columns of a single base table. The defined Data Quality Rules can be logically grouped and executed together.

2.5.2.1 Data Check Definitions

Data Check definitions included the Data Quality Rules help in performing data quality check and correction.

You can include the following Data quality checks in the DQ Rule.

- **Single Column Check** - You can set the Check Type to Single Column Check during DQ Rule creation. This check will perform Data Quality Check on only one column selected during Rule creation. For more details about the various Single column Checks, refer to Single Column Data Check Definitions.
- **Multi Column Check** -You can set the Check Type to Multi Column Check during DQ Rule creation. This check will perform Data Quality Check on one or more columns of a single base table, selected during Rule creation. For more details about the various Multi-column Checks, refer to Multi Column Data Check Definitions.

2.5.2.1.1 Single Column Data Check Definitions

Single Column Data Checks help to perform data quality check on only one column selected during DQ Rule creation.

You can include the following Data Quality checks in the DQ Rule, if the check type is set to Single Column Check.

- **Range Check** - Range Check identifies if the base column data falls outside a specified range of Minimum and Maximum value. Range check can be enabled only if the base column has date or number value.
  - Select the check-box to enable the Range check.
  - Set the warning level to **Severity**, **Warning** or **Information**.
  - If the selected Base Column is of **Date** type, select Minimum and Maximum date range. If the selected base column is of **Number** type, enter the Range value. You can specify numeric, decimal, and negative values for number Data type.
  - Check the Inclusive check-box, to include the specified date/value during the data check.
  - Click **Edit** to add specific filter expressions, as additional conditions. For more information, refer to Creating Expressions.
  - Select the **Assignment** option. The Assignment option is enabled only if Warning/Information is selected as the Warning level.
    * Select the Assignment Type from the drop-down list. For more information, see Assignment Types.
    * Specify the **Assignment Value**.
    * Select the **Message Severity** as 1 or 2 from the drop-down list.
    * Select a pre-defined Message to be displayed from the drop-down list. To enter a specific message other than the listed pre-defined messages, select **Custom Message**, in the Message drop-box and enter the required **Custom Message**.

- **Null Value Check** -Null Value Check checks identifies if there is any null value in the selected column.
  - Select the check-box to enable the Null Value check.
  - Set the warning level to **Severity**, **Warning** or **Information**.
  - Click **Edit** to add specific filter expressions, as additional conditions.
  - Select the **Assignment** option. The Assignment option is enabled only if Warning/ Information is selected as the Warning level.
    - Select the Assignment Type from the drop-down list. For more information, see Assignment Types.
    - Specify the **Assignment Value**.
    - Select the **Message Severity** as 1 or 2 from the drop-down list.
    - Select a pre-defined Message to be displayed from the drop-down list. To enter a specific message other than the listed pre-defined messages, select **Custom Message**, in the Message drop-box and enter the required **Custom Message**.
- **Blank Value Check** -Null Value Check checks identifies if there is any entry in the selected column is blank.
  - Select the check-box to enable the Blank Value check.
  - Set the warning level to **Severity**, **Warning** or **Information**.
  - Click **Edit** to add specific filter expressions, as additional conditions.
  - Select the **Assignment** option. The Assignment option is enabled only if Warning/ Information is selected as the Warning level.
    - Select the Assignment Type from the drop-down list. For more information, see Assignment Types.
    - Specify the **Assignment Value**.
    - Select the **Message Severity** as 1 or 2 from the drop-down list.
    - Select a pre-defined Message to be displayed from the drop-down list. To enter a specific message other than the listed pre-defined messages, select **Custom Message**, in the Message drop-box and enter the required **Custom Message**.
- **Data Length Check** -Data Length Check checks for the length of the base column data using a minimum and maximum value and identifies if it falls outside the specified range.
  - Select the check-box to enable the Data Length check.
  - Set the warning level to **Severity**, **Warning** or **Information**.
  - Enter the Minimum and maximum values for validation.
  - Click **Edit** to add specific filter expressions, as additional conditions.
- **Duplicate Check** - Duplicate Check can be used when a combination of column is unique and identifies all the duplicate data of the base table in terms of the columns selected for the duplicate check.
  - Select the check-box to enable the Duplicate Check.
  - Set the warning level to **Severity**, **Warning** or **Information**.
  - Click **Edit** to add specific filter expressions, as additional conditions.

  - Click **Edit** and select the required column to be added to the **Column List**, for duplicate check validation.

- **Custom Check/Business Check**- Custom Check/Business Check is a valid SQL query to identify the data with the query specified as the Custom/business SQL. You can define the SQL, but the Select clause of the query has to follow the order as specified in the template of the Custom Check panel.
  Sample Template : `"SELECT 'N_COUNTRY_SKEY' PKNAMES, N_COUNTRY_SKEY PK1, null PK2, null PK3, null PK4, null PK5, null PK6, null PK7, null PK8, V_COUNTRY_DESC ERRORCOL FROM DIM_COUNTRY WHERE N_COUNTRY_SKEY >50"`
  - Select the check-box to enable the Custom Check.
  - Set the warning level to **Severity**, **Warning** or **Information**.
  - Enter the SQL Query to perform the custom check.
- **Column Reference/Specific Value Check** - Column Reference / Specific Value Check compares the base column data with another column of the base table or with a specified direct value using the list of pre-defined operators.
  - Select the check-box to enable the Column Reference check.
  - Set the warning level to **Severity**, **Warning** or **Information**. Column reference check can be enabled only if the base column has date or number value.
  - Select the **Mathematical Operator** from the drop-down list.
  - Select the **Filter Type** as one of the following:
    * Select **Specific Value** and specify the Value. You can specify numeric, decimal, and negative values for number Data type.
    * Select **Another Column** and select Column Name from the drop-down list.
  - Click **Edit** to add specific filter expressions, as additional conditions.
  - Select the **Assignment** option. The Assignment option is enabled only if Warning/Information is selected as the Warning level.
    * Select the Assignment Type from the drop-down list. For more information, see Assignment Types.
    * Specify the **Assignment Value**.
    * Select the **Message Severity** as 1 or 2 from the drop-down list.
    * Select a pre-defined Message to be displayed from the drop-down list. To enter a specific message other than the listed pre-defined messages, select **Custom Message**, in the Message drop-box and enter the required **Custom Message**.
- **List of Value** - List of Value Check verifies the values where a dimension / master table is not present. This check identifies if the base column data is not matching with any value or code specified in a list of values.
  - Select the check-box to enable the List of Value check.
  - Set the warning level to **Severity**, **Warning** or **Information**.
  - Select **Input Values** and specify the List of Values. You can specify numeric or String values.
  - Click **Edit** to add specific filter expressions, as additional conditions.

  - Select the **Assignment** option. The Assignment option is enabled only if Warning/ Information is selected as the Warning level.
    * Select the Assignment Type from the drop-down list. For more information, see Assignment Types.
    * Specify the **Assignment Value**.
    * Select the **Message Severity** as 1 or 2 from the drop-down list.
    * Select a pre-defined Message to be displayed from the drop-down list.
      To enter a specific message other than the listed pre-defined messages, select **Custom Message**, in the Message drop-box and enter the required **Custom Message**.

- **Referential Integrity Check** - Referential Integrity Check identifies all base column data which has not been referenced by the selected column of the referenced table. Here, the reference table and columns are user specified.
  - Select the check-box to enable the Referential Integrity Check.
  - Set the warning level to **Severity**, **Warning** or **Information**. Column reference check can be enabled only if the base column has date or number value.
  - Select the **Table** (Referential Integrity Check dimension table) from the drop-down list. The base table selected under the Select grid is excluded from the drop-down list.
  - Select the Column from the drop-down list. The list displays those columns that have the same Data Type as that of the Base Column selected under Select grid.
  - Select the **Is Composite Key** check-box if the base column is part of a Composite Key.
  - Click **Edit** to add specific filter expressions, as additional conditions.

2.5.2.1.2 Multi Column Data Check Definitions

Multi Column Data Check definitions help in data quality checks and correction of one or more columns of a single table, selected during Rule creation.

2.5.2.1.3 Assignment Types

To populate the Assignment Type details, select any of the below Assignment Type option from the dropdown list and do the following:

- **No Assignment** - This assignment is selected by default and does not have any target column update, but the message details are pushed.
- **Direct Value** - Enter the **Assigned Value**. You can specify number, date or string values, as required.
- **Another Column** - Select the required Column as **Assigned Value** from the drop-down list.
- **Expression** - Specify the required expression in the Specify Expression Page. For more information, refer to Creating Expressions.

2.5.2.2 Creating Expressions

You can define an expression in the Expression Builder to combine two selected tables.

The expression builder includes the following sections:

- **Entities** - consists of the Entities folder with the list of tables that you selected from the Entity Groups folder. Double-click the Entities folder to view the selected dimension tables (Product and Segment tables).
- **Functions** – The 2 types of functions are,
  - **Database Functions** - consists of functions that are specific to databases.
  - **User Defined Functions** - use these functions along with Operators to specify the join condition.
- **Operators** - Consists of the function operators categorized into folders. The various types of operators are,
  - **Arithmetic** - +, -, %, * and /
  - **Comparison** - '=', '!=', '< >', '>', '<', >=, <=,'IN', 'NOT IN', 'ANY', 'BETWEEN', 'LIKE', 'IS NULL', and 'IS NOT NULL'.
  - **Logical** - 'NOT', 'AND' and 'OR'
  - **Set** - UNION, UNION ALL, INTERSECT and MINUS
  - **Other** - The Other operators are 'PRIOR', '(+)', '(' and ')'.

To specify the join condition:

1. Select the **Entity** of the fact table to which you want join the dimension entities.
2. Select a **Function** depending on the database type.
3. Select the **Operator** you want to use for the join condition.
4. Select the **Second Entity** from the Entities pane that you want to join with the first entity. You can also select more than one table and link to the fact table.

   The defined expression is displayed in the Expression pane. Click **Reset** to reset the values.
5. Click **OK**.

   The defined expression is validated as per the selected table and entity definition and on successful validation, it is added to the DQ Rule.

2.5.2.3 DQ Rules Summary

The Data Quality Rule Summary page contains the list of user-defined Data Quality Rules with details such as Name, Status, Folder, Is Executed, Version, Is Grouped, Check Type and Base table.

Refer to the following procedure to view DQ Rules Summary and the relevant details:

- Click **Data Quality Rules**, to access the Data Quality Rules Summary.

  The Data Quality Rules Summary page with the following details is displayed.
  - **Name** - The Unique Identifier Name of the Data Quality Rule.

- **Status** - The Approval status of the specific rule.
  - **Approval** - The Rule is approved and ready for execution. The approved rules can be grouped further for execution.
  - **Pending for Approval** - The rule requires approval and can be executed only after approval.
  - **Draft** - A defined rule is set to**Draft** status until it is submitted for approval by the creator.
  - **Rejected** - The rejected rules are sent back to the creator with the Approver comments.
- **Folder** - The folder associated with the rule.
- **Version** - The current active version of the rule.
  When a new definition is created, it will be saved as version 1 and once it is authorized, it will be in Active status. After you modify any DQ Rule and save, it will be saved with version as highest available version +1. For example, if you modify a DQ Rule of version 2 and the highest version available is 4, after you save the definition, its version becomes 5. Only the latest version will be in Active status.
- **Check Type** - Select one of the following check types:
  - **Single Column Check** - define conditions based on individual checks on a single column. For more information, refer to Single Column Data Check Definitions.
  - **Multi Column Check** - define conditions based on multiple columns of a single base table. These checks are not pre-defined and can be specified (user-defined) as required. For more information, refer to Multi Column Data Check Definitions.
- **Base Table** - The base table within the environment, associated with the rule.
- **Created By** - The login name of the user who created the rule.
- **Created Date** - The rule creation date.
- **Action** - Click **Action**, to view, approve, reject edit, or delete the rule.

To search for a particular rule, enter the first few letters of the rule name in the Search column.

You can also sort the rule summary based on the Status, Folder name, check type, record status, Rule name and Select table.

To sort the Summary based on the Status, click **Status** in the Search bar, and select the required status.

2.5.2.4 Creating DQ Rule

You can create a Data Quality Rule Definition by specifying the DQ Definition details along with the entity details and the type of data quality check to be performed on the selected base table. You can also define the required search conditions to query and correct the transformed data.

1. To create a DQ Rule, click **Add Rule** on the DQ Rules Summary.

   The Data Quality Rules page with DQ Group Details and DQ Rules Mapping tab is displayed.
2. Click **Start**, to enter the following basic details for the new DQ Rule.

- **Name** - The unique identifier name for the rule.
  The name should start with alphabet and should not be more than 50 characters.

  Blank space ( ), **Underscore (_)** and **Hyphen (-)** are allowed as special characters.
- **Description** - The description/details for the rule.
  The description should start with alphabet and should not be more than 250 characters.
- **Folder** - Select the folder present in the current environment, to be associated with the rule.
- **Check Type** - Select one of the following check types for the rule.
  - **Single Column** - Select Single column to perform data quality check only on one column. For more information, refer to Single Column Data Check Definitions.
  - **Multi-Column** - Select Multi-Column to perform data quality check on more than one column in a single table. For more information, refer to Multi Column Data Check Definitions.
- **Access-type** - Select one of the following Access types.
  - **Read-only** - only the creator can edit the rule. Other users can only view the rule.
  - **Read-Write** - all users can view, modify any fields (including Access Type), and also delete the DQ Rule.
- Check **Auto DQ Group Required** option, to create a new DQ group, for this Rule.
  The new group will be associated only with the created DQ rule. The group name will be set as <DQ_Rule_Name_group>, and this group will have only Read-only access.
- Check **Auto Assignment**, to execute the rule, and also perform the assignment.

  > **Note:**
  >
  > The Auto Assignment is applicable only to the Auto DQ Group.
- Click **Continue** to proceed with the Entity Selection page.

3. Enter/select the following entities:
   - **Table** - Select the basic table on which the rule is executed.
   - If the rule is a single-column rule, select the **Base Column**, to be included for the rule execution. Base column will not be present for Multi-Column rule.
   - Select the **Identifier Columns** required to execute the rule.
     - To select multiple columns, click **Edit**.
     - Select the required columns from the **Available Members** pane and move them to **Selected Members** pane.
   - Click **Edit**, to include the filter expression.

The **Specify Expression** page is displayed. For more information refer to Creating Expressions.

- Select the entities to be included in the filter expression and click **OK**.

4. Click **Continue**, to proceed with the **Data Check Definitions**.
5. Select the required Data Check Definitions, to validate the data.

   Enter/select the required information for each Data Check Definition. For more information about each Data check type, refer to Data Check Definitions.
6. Click **Submit**, to submit the new DQ Rule for approval.

   The DQ Rule is saved with the status **Pending for Approval**, in the Rules Summary and a confirmation message is displayed.

   While creating the DQ Rule, you can also click **Save As Draft**, to save the new incomplete DQ Rule at any point of time and resume the process at a later point. A confirmation message is displayed, after the draft is saved successfully.

   The new Rule added to the DQ Rules Summary, and is set to **Draft** Status in the DQ Rules Summary.

> **Note:**
>
> If the user has **DQAUTOAUTH** Role assigned, the Rule will be auto-approved.

2.5.2.5 Editing DQ Rules

You can update all the definition details except for the Definition Name, Check Type, Table, and the Base Column selected.

You can only edit the DQ rules that are set to **Draft, Approved** and **Rejected** status. You cannot edit the rules that are set to **Pending for Approval** status.

To edit the required Data Quality Rule definition details:

1. Click **Action** adjacent to the DQ Rule to be modified.
2. Click **Edit**, to modify the DQ Rule.
3. Click **Start** to edit the **DQ Rule Details**.
4. Modify the description and click **Continue** to proceed with editing the Entity Selection details.

   You can also click **Save as Draft**, to save the changes and proceed with Submission later.
5. Modify the Filter expression and click **Continue** to proceed to **Data Check Definitions** page.
6. Add/remove the data checks required during rule execution and click **Submit**, to submit the modified rule for approval.

   The rule is updated and added to the DQ Rules Summary. A confirmation message is displayed.
   The Rule is set to **Pending for Approval** state.

> **Note:**
>
> If the user has **DQAUTOAUTH** Role assigned, the Rule will be auto-approved.

2.5.2.6 Approving/Rejecting a Data Quality Rule

An authorizer can approve a user-defined Data Quality Rule definition or reject an inappropriate DQ Definition listed within the Data Quality Rule Summary.

You should be mapped to DQ Authorizer function role to approve or reject a DQ Definition.

> **Note:**
>
> You can only approve those DQ Rules that are set to **Pending for Approval** status.
> If the user has **DQAUTOAUTH** Role assigned, the DQ rule will be auto-approved.

To view a Data Quality rule, and approve/ reject Data Quality rule:

1. Click **Action** adjacent to the DQ Rule to be approved/rejected.
2. Click **Preview**, to view the DQ Rule.

   All the details pertaining to the selected rule is displayed.
3. Click **Approve/Reject**, after reviewing the rule.
4. Enter valid reason for approval or rejection.
5. Click **Approve/Reject**.

   The DQ Rule is approved/rejected and a confirmation message is displayed.

2.5.2.6.1 Bulk Approving/Rejecting Data Quality Rules

An authorizer can approve multiple user-defined Data Quality Rule definitions or reject an inappropriate DQ Definition listed within the Data Quality Rule Summary.

You should be mapped to DQ Authorizer function role to approve or reject a DQ Definition.

> **Note:**
>
> You can only approve those DQ Rules that are set to **Pending for Approval** status.
> If the user has **DQAUTOAUTH** Role assigned, the DQ rule will be auto-approved.

> **Note:**
>
> When you initiate bulk approval/rejection, all the selected rules are approved/ rejected based on the user input. If you want to stop the approval/rejection of one specific rule, cancel the whole process and restart again.

To view several Data Quality rules, and approve/ reject them:

1. Filter Rule Summary, to view only the rules with **Pending For Approval** Status.

   All the rules that need be approved/rejected are displayed.

2. Select the rules for approval/rejection.

   You can select all the rules displayed in a page, by clicking the check box next to the **Name** header. To select all the rules in the Summary, with **Pending** Status, select **Click All Rules in Summary** link.

3. Click **View Details**, to view the Rule details of all the selected rules.

   All the rule details, and base table for the selected rules are displayed. Review the details and add appropriate comments and click **OK**.

   You can also **Proceed without Viewing** the details.

4. Click **Approve/Reject**.

   The selected DQ Rules are approved/rejected and a confirmation message is displayed.

2.5.2.7 Deleting a Data Quality Rule

You can remove the Data Quality Rule definition(s) that are not grouped in the Data Quality Framework. A grouped and non-executed Data Quality Rule definition can still be deleted by unmapping the same from all the associated group(s).

To delete a DQ Rule:

1. Click **Action** adjacent to the DQ Rule to be approved/rejected.
2. Click **Delete**, to delete the DQ Rule.

   The selected rule is set to **Pending for Approval** status and is deleted after approval.

> **Note:**
>
> If the user has **DQAUTOAUTH** Role assigned, the Rule will be auto-deleted.

2.5.2.8 Purging a Data Quality Rule

You can delete a Data Quality Rule definition permanently from the setup.

You can purge only those DQ Rules that are deleted after approval.

To delete a DQ Rule:

1. Click **Action** adjacent to the deleted DQ Rule.
2. Click **Purge**, to delete the DQ Rule from the setup.

   The selected rule is is deleted permanently after confirmation.

2.5.3 Data Quality Groups

Data Quality Groups facilitates you to logically group the defined DQ Definitions .

DQ Group Definitions can be executed through Scheduler Services. For more information, refer to Adding a DQ Check Task .

2.5.3.1 DQ Groups Summary

The Data Quality Groups Summary displays the list of user-defined Data Quality Groups with the other details such as Name, Folder, Creation Date, Created By, Last Modification Date, Last Modified By, Last Run Date, and Last Run Status. .

You can create and execute DQ Group definitions and view, modify, copy, refresh, or delete DQ Group definitions within the Data Quality Groups Summary.

- Click **Data Quality Groups**, to access the Data Quality Groups Summary.

  The Data Quality Rules Summary with the following details is displayed.

  - **Name** - The Unique Identifier Name of the Data Quality Group.
  - **Status** - The Approval status of the specific group.
    - **Approval** - The group is approved and ready for execution.
    - **Pending for Approval** - The group requires approval and can be executed only after approval.
    - **Draft** - A defined group is set to **Draft** status until it is submitted for approval by the creator.
    - **Rejected** - The rejected rules are sent back to the user with the Approver comments.
  - **Version** - The current active version of the group.
    When a new definition is created, it will be saved as version 1 and once it is authorized, it will be in Active status. After you modify any DQ Group and save, it will be saved with version as highest available version +1. For example, if you modify a DQ Group of version 2 and the highest version available is 4, after you save the definition, its version becomes 5. Only the latest version will be in **Active** status.
  - **Folder** - The folder associated with the group.
  - **Created Date** - The group creation date.
  - **Created By** - The login name of the user who created the Group.
  - **Last Run Date** - The last date on which the DQ Group was executed.
  - **Last Run Status** - The last execution state if the specific DQ Group.
    - **Success** - The last execution of the selected DQ Group was completed successfully.
    - **Failed** - The last execution did not complete.
    - **NA** - The DQ Group was not executed.
  - **Action** - Click **Action**, to view, approve, reject edit, or delete the group.

To search for a particular group, enter the first few letters of the group name in the Search column.

You can also sort the groups summary based on the Status, Folder name, record status and group name.

2.5.3.2 Creating DQ Groups

You can create a DQ Group definition by defining the DQ Definition details and mapping the required DQ Rules which are authorized and approved within the system.

The DQ Group definition is flexible and purpose driven. Groups can be created for different subject areas such as Credit and Market or it can be application specific like Basel II, Economic capital.

1. To create a DQ Group, click **Add Group** in the DQ Group Summary.

   The Data Quality Group page with DQ group Details and DQ Rules Mapping tab is displayed.

2. Click **Start**, to enter the following basic details for the new DQ Group.

   - **Name** - The unique identifier name for the groups.
     The name should start with alphabet and should not be more than 50 characters.

     Blank space ( ), **Underscore (_)** and **Hyphen (-)** are allowed as special characters.
   - **Folder** - Select the folder present in the current environment, to be associated with the group.
   - **Description** - The description/details for the group.
     The description should start with alphabet and should not be more than 250 characters.
   - Check **Auto Assignment**, to execute the group, and also perform the assignment.

3. Click **Continue** to proceed with the Data Rules Mapping page.

   The list of available rules are displayed in the Data Rules Mapping page.

4. Select the Rules to be added to the new DQ Group.

5. Click **Submit**, to submit the new DQ Group for approval.

   The DQ Groups is saved with the status **Pending for Approval**,in the Group Summary and a confirmation message is displayed.

   While creating the DQ Group, you can also click **Save As Draft**, to save the new incomplete DQ Group at any point of time and resume the process at a later point. A confirmation message is displayed, after the draft is saved successfully.

   The new Group added to the DQ Groups Summary, and is set to **Draft** Status in the DQ Groups Summary.

> **Note:**
>
> If the user has **DQAUTOAUTH** Role assigned, they can save and approve the DQ Group, immediatly after creating it.

2.5.3.3 Editing DQ Groups

You can modify all the details of a saved Data Quality Group Definition, except the Group name.

To edit the required Data Quality Group Definition details:

1. Click **Action** adjacent to the DQ Group to be modified.
2. Click **Edit**, to modify the DQ Group.
3. Click **Start** to edit the **DQ Group Details**.
4. (Optional). Modify the description and click **Continue** to proceed with adding/ deleting the rules associated with the DQ Group.
5. Add/remove the DQ Rules associated with the DQ Groups and click **Submit**, to submit the modified group for approval.

   The group is updated and added to the DQ Groups Summary. A confirmation message is displayed.
   The Group is set to **Pending for Approval** state.

> **Note:**
>
> If the user has **DQAUTOAUTH** Role assigned, they can save and approve the DQ Group, immediatly after creating it.

2.5.3.4 Approving/Rejecting a Data Quality Group

An authorizer can approve a user-defined Data Quality Group definition for further execution or reject an inappropriate DQ Definition listed within the Data Quality Rule Summary.

You should be mapped to DQ Authorizer function role to approve or reject a DQ Definition.

> **Note:**
>
> You can only approve those DQ Rules that are set to **Pending for Approval** status.
> If the user has **DQAUTOAUTH** Role assigned, they can save and approve the DQ Group, immediatly after creating it.

To view a Data Quality Group, and approve/ reject it:

1. Click **Action** adjacent to the DQ Groups to be approved/rejected.
2. Click **Preview**, to view the DQ Groups.

   All the details pertaining to the selected rule is displayed.
3. Click **Approve/Reject**, after reviewing the groups.
4. Enter valid reason for approval or rejection.

5. Click **Approve/Reject**.
6. The DQ Group is approved/rejected and a confirmation message is displayed.

2.5.3.4.1 Bulk Approving/Rejecting Data Quality Groups

An authorizer can approve multiple user-defined Data Quality Groups or reject an inappropriate DQ Groups listed within the Data Quality Group Summary.

You should be mapped to DQ Authorizer function role to approve or reject a DQ Definition.

> **Note:**
>
> You can only approve those DQ Groups that are set to **Pending for Approval** status.
> If the user has **DQAUTOAUTH** Role assigned, the DQ group will be auto-approved.

> **Note:**
>
> When you initiate bulk approval/rejection, all the selected groups are approved/ rejected based on the user input. If you want to stop the approval/rejection of one specific group, cancel the whole process and restart again.

To view several Data Quality groups, and approve/ reject them:

1. Filter Group Summary, to view only the groups with **Pending For Approval** Status.

   All the groups that need be approved/rejected are displayed.
2. Select the groups for approval/rejection.

   You can select all the groups displayed in a page, by clicking the check box next to the **Name** header. To select all the groups in the Summary, with **Pending** Status, select **Click All Groups in Summary** link.
3. Click **View Details**, to view the Group details of all the selected Groups.

   All the group details, and base table for the selected groups are displayed. Review the details and add appropriate comments and click **OK**.

   You can also **Proceed without Viewing** the details.
4. Click **Approve/Reject**.

   The selected DQ groups are approved/rejected and a confirmation message is displayed.

2.5.3.5 Deleting a Data Quality Group

You can remove the Data Quality Group definition(s) that are not grouped in the Data Quality Framework. A grouped and non-executed Data Quality Rule definition can still be deleted by unmapping the same from all the associated group(s).

To delete a DQ Group:

1. Click **Action** adjacent to the DQ Group.
2. Click **Delete**, to delete the DQ Group.

The selected group is deleted after confirmation.

> **Note:**
>
> If the user has **DQAUTOAUTH** Role assigned, the Group will be auto-deleted.

2.5.3.6 Purging a Data Quality Group

You can delete a Data Quality Group definition permanently from the setup.

To delete a DQ Group:

1. Click **Action** adjacent to the deleted DQ Group.
2. Click **Purge**, to delete the DQ Group from the setup.

   The selected Group is is deleted permanently after confirmation.

2.5.4 Adding a DQ Check Task

You can add a new DQ check Task in the Scheduler Services and add the task to a Batch Definition, for execution.

For more information about adding a task to the Batch and about Scheduler Services, refer to Scheduler Services Documentation.

To add new task using the Define Tasks page in Scheduler Services, perform the following steps:

1. Click **Define Tasks** from the Header panel.
2. Select the **Batch**, to add new task.
3. Click **Add**, to add a new DQ task in the **Create Task** page.
   - Complete all the generic details in the Create Task Page. For more information refer to Create Task Using Scheduler Services.
   - Select the **Task Type** as DQ Task.
   - Select the **Group** to perform the DQ check.
   - Enter the **Threshold** percentage for the maximum number of errors permissible during the DQ check. By default this value is set to 100.
   - Set **Fail If Threshold Breaches** to **TRUE**, to abort the job and not include the failure records in the DQ table, when the DQ check errors are more than the set threshold value.

     If the **Fail If Threshold Breaches** is set to **FALSE**, the job will proceed further and the failure records will be inserted in the DQ Result tables.
   - Enter the **Additional Parameters** required for the Run DQ Rule filtering criteria for execution in the pattern: Key#Data type#Value; Key#Data type#Value; and so on.
4. Click **Save** to add the new DQ task to the selected Batch.

2.5.5 Execution Summary

The Execution Summary provides the consolidated list of executed DQ batches, for the last 30 days .

You can also view the consolidated details related to the total number of records analysed, total number of passed records and the pass percentage and total number of error records and their percentage.The number of error records categorized based on the Data checks is also displayed as a pie chart.

To view the Execution Summary Details:

- Click **Execution Summary**, to access the consolidated Execution Summary.

  The Execution Summary page with the following details is displayed.

  - **Batch ID** - The Unique Identifier Name of the particular Batch in which the DQ group is added for Data Quality Check.
  - **Process Instance ID** - The unique identifier of the execution process.
  - **DQ Group** - The DQ group associated with the Batch for Data Quality check.
  - **DQ Group Desc** - The DQ group description.
  - **FICMIS Date** - FICMIS Date refers to the date with which the data for the execution would be filtered. In case the specified MIS date is not present in the target table, execution completes with the message **No Records found**.
  - **Execution Date** - The last execution date of the Batch.
  - **Scanned Records** - The total number of records scanned for Data Quality check.
  - **Erroneous Records** - The total number of records that failed the Data Quality check.
  - **Execution Status** - The DQ Batch execution status.
  - **Assignment Status** - The current Assignment status of the DQ Batch.
  - **Action** - Click **Action**, to view the Run Details of the DQ Batch.

  To search for a particular Batch, enter the first few letters of the Batch name in the Search column.

  You can also sort the Execution summary based on the Execution Date, FICMIS Date, Execution status and Group Name, Assignment Status, Batch Id and Process Instance ID.

2.5.5.1 Viewing Run Details

Execution Details page provides the information related to the Data Quality Rule and the Data Quality Check executed during a Batch Execution.

You can also view the consolidated details related to the total number of records analysed, total number of passed records and the pass percentage and total number of erro records and their percentage.
The number of error records categorized based on the Data checks is also displayed as a pie chart.

1. Click **Action** adjacent to the specific Batch.
2. Click **View Run Details**, to access the Run details of the particular Batch execution.

The Run details of the selected Batch is displayed with the following information.

- **Rule** - The Rule name of the executed DQ Rule.
- **Entity** - The Table entity associated with the Rule.
- **Column** - The column associated for Data Quality check
- **Check Type** - The type of check performed on the Data.
- **Consolidated Records Scanned** - The total number of records scanned.
- **Error Records** - The total number of erroneous records.
- **Assignment Type** - The assignment type set during the DQ rule creation.

3. Generate and download the report, and perform assignment action based on the report.

> **Note:**
>
> To perform assignment, you must have the **DQ_EXE_ASSIGN** role assigned.

After the assignment process is completed, the Assignment status of the particular DQ Batch is set to **Success**.

2.6 Configure Cash Flow Edits Rule

The Cash Flow Edits Configuration Window allows you to configure a new Cash Flow Edits Rule. Later, this rule configuration can be used and executed using Cash Flow Edits Process UI. 125 rules are seeded as part of OFSA Cloud Service.

For more information, see the Cash Flow Edits Process Section.

Topics:

- Cash Flow Edits Summary Page
- Search Cash Flow Edits Rule
- Create Cash Flow Edits Rule
- View and Edit Cash Flow Edits Rule
- Copy Cash Flow Edits Rule
- Delete Cash Flow Edits Rule

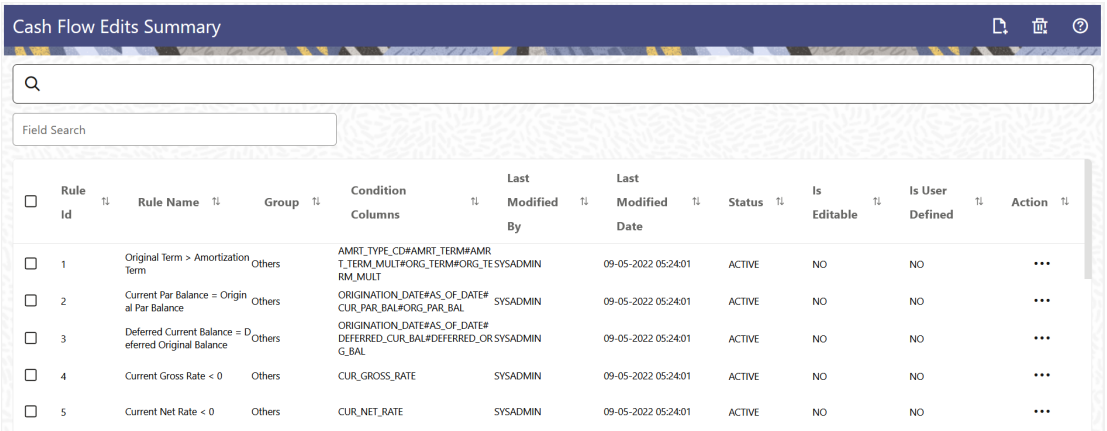
2.6.1 Cash Flow Edits Summary Page

This page is the gateway to all Cash Flow Edits Rules and related functionality. You can navigate to other pages relating to Cash Flow Edits Rules from this point. The Cash Flow Edits Summary Page displays the following columns.

Table 2-19 Cash Flow Edits Rule – Fields and Descriptions

Field	Description
Rule Id	Displays the code of Cash Flow Edits Rule.
Rule Name	Displays the Cash Flow Edits Rule's short name.
Group	Displays the Group of Cash Flow Edits Rule.
Condition Columns	Displays the Columns on which of Cash Flow Edits Rule is made.
Last Modified By	Displays the Name of the user who last modified the Cash Flow Edits Rule.
Last Modified Date	Displays the Date and Time when Cash Flow Edits Rule was modified last.
Status	Displays the Status of Cash Flow Edits Rule.
Is Editable	Displays the editable status of Cash Flow Edits Rule.
Is User Defined	Displays the user defined status of Cash Flow Edits Rule.
Action	Displays the list of actions that can be performed on the Cash Flow Edits Rule. For more information, see Cash Flow Edits Rule – Icons and Descriptions.

Figure 2-21 Cash Flow Edits Summary Page



The **Action** column on the **Cash Flow Edits Summary** Page offers several actions that allow you to perform different functions. The following actions are available for the Cash Flow Edits Rule:

Table 2-20 Cash Flow Edits Rule – Icons and Descriptions

Field	Description
Add	Click Add icon to build a new Cash Flow Edits Rule.

Table 2-20 (Cont.) Cash Flow Edits Rule – Icons and Descriptions

Field	Description
Multiple Delete	Select one or more rules in the table and then click the (-) icon at the top right of the summary page to delete more than one rule at the same time.
Help	Click Help icon to view the Cash Flow Edits Rule help.
View/Edit	Click on the **Action** icon against the Cash Flow Edits Rule and select View/Edit to view or Edit the contents of a Cash Flow Edits Rule in read/write format. Depending on user privileges the rule will open in either View or Edit mode.
Save As	Click on the **Action** icon against the Cash Flow Edits Rule and select Save As to create a copy of an existing Cash Flow Edits Rule.
Delete	Click on the **Action** icon against the Cash Flow Edits Rule and select Delete to delete an existing Cash Flow Edits Rule.

2.6.2 Search Cash Flow Edits Rule

Search for a Cash Flow Edits Rule to perform any of the following tasks:

- View
- Edits
- Copy (Save As)
- Delete

Prerequisites

Predefined Cash Flow Edits Rules

Procedure

To search the Cash Flow Edits Rule, follow these steps:

1. Navigate to the **Cash Flow Edits Summary** Page.
2. Enter the **Rule Id, Rule Name, Rule Group, Condition Column**, or **Is User Defined** status in Search Criteria.
3. Click **Search** .

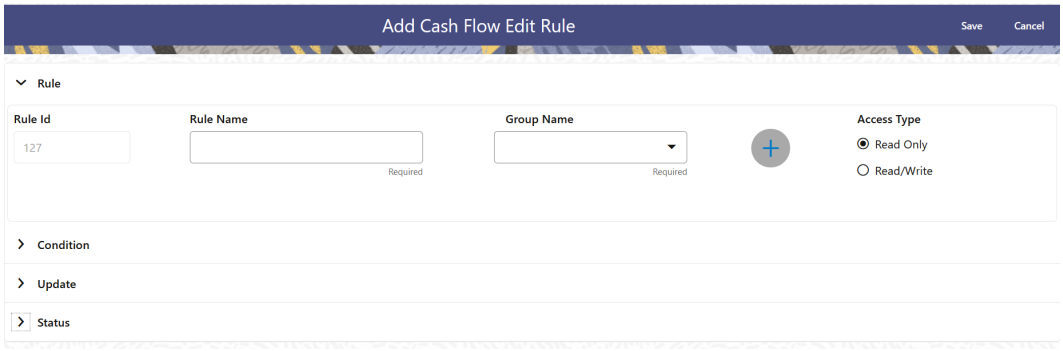
Only Cash Flow Edits Rules that match the search criteria are displayed.

2.6.3 Create Cash Flow Edits Rule

To add a new Cash Flow Edits Rule, follow these steps:

1. Navigate to **Cash Flow Edits Summary** Page.
2. Click the **Add** icon. The **Add Cash Flow Edits Rule** Window is displayed.

Figure 2-22 Add Cash Flow Edits Rule



3. Enter the following details:

Table 2-21 List of fields used for Creating Cash Flow Edits Process

Field	Description
Rule ID	Shows the ID of the Cash Flow Edits Rule. This is an auto generated numeric field. You cannot modify this.
Rule Name	Enter the name of the Cash Flow Edits Rule. This is an alphanumeric field. The maximum length of this field is 1000 characters.
Group Name	Select the Group Name from Group Name drop-down list. For example, Cash Flow. You can add new a Sub Group using Add icon. Adding a Sub Group To add a Sub Group, follow these steps: a. Click Add. The Add Group Window is displayed. b. Enter the following details: • **Group Name:** Name of new Group • **Parent Group:** Select Parent Group • **Group Id** is auto populated. These added Group/Sub Group Names will be populated in Cash Flow Edits Details section of Cash Flow Edits Process window.
Access Type	Select the Access Type as Read-Only or Read/Write.
Condition ID	This field shows the Condition ID. This is an auto generated numeric field. You cannot modify this.
Condition Columns	Select the Columns using which you want to define the error condition expression.
Condition Statement	This field allows you to define the expression of a rule. You can define condition expression for selected Condition Columns (using the Condition Columns field). When you click the Condition Statement Field, the Expression Window is displayed. Define the condition and click Save.

Table 2-21 (Cont.) List of fields used for Creating Cash Flow Edits Process

Field	Description
Condition Message	Select the Condition message. You can add a new condition message using Add icon. For more information on Cash Flow Edits messages, see the Cash Flow Edits Execution section. To add a Condition Message, follow these steps: a. Click **Add** icon. The Add Message Window is displayed. Enter the following details: • **Message Type:** Select as Error, Warning, or Information • **Message Description:** Enter the Message details. • **Message ID** is auto populated. b. Click **Save**.
Update Columns	Select the columns which you want to update if error condition is met
Default Value Column	Select the columns from which you want to update columns selected in Update Columns.
Default Value	Enter the values that you want to update the columns selected in Update Columns.
Update Order	If the same column is getting updated by more than one rule then the order in which each rule applies must be selected here.
Status	Set the status of the rule as Active or Inactive.
User Defined	This field shows the User Defined status as Yes or No. You cannot modify this.
Editable	Set the Editable status of rule as Yes or No.

4. Click **Save**.

2.6.4 View and Edit Cash Flow Edits Rule

You can view the existing Cash Flow Edits Rule, and you can edit existing Cash Flow Edits Rules, provided you have Read/Write privileges.

To view and edits a Cash Flow Edits Rule, follow these steps:

1. Navigate to the **Cash Flow Edits Config Summary** Page.
2. Search for a Rule. For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the Cash Flow Edits Rule and select **View/Edit** to open the rule you want to update.
4. Update the rule details.
5. Click **Apply** or **Save**, depending on the rule type.

You cannot edit out-of-box seeded rules.

2.6.5 Copy Cash Flow Edits Rule

You can copy Cash Flow Edits Rules to avoid entering data multiple times. This saves time and effort and also reduces mistakes.

To copy a Cash Flow Edits Rule, follow these steps:

1. Navigate to the **Cash Flow Summary** page.
2. Search for a Rule.
   For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Cash Flow Edits Rule and select **Save As** to duplicate the rule.
4. Select a folder where you want to save the rule copy.
5. Enter a unique name for the new rule.
6. (Optional) Enter a brief description of the rule.
7. Select the access type.
8. Click the **Save** button.

2.6.6 Delete Cash Flow Edits Rule

You can delete Cash Flow Edits Rules that are no longer required.

> **Note:**
>
> A Cash Flow Edits Rule cannot be retrieved after deletion.
>
> Restrictions on deleting Cash Flow Edits Rules are:
>
> - You cannot delete Cash Flow Edits Rules if you have only Read privileges. Only users with read/write privileges and Cash Flow Edits Rule owners can delete Cash Flow Edits Rules.
> - You cannot delete a Cash Flow Edits Rule that has a dependency.
> - You cannot delete out-of-box seeded rules.

To delete a Cash Flow Edits Rule, follow these steps:

1. Navigate to the **Cash Flow Edits Summary** page.
2. Search for a Rule. For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Cash Flow Edits Rule and select **Delete**.

2.6.7 Cash Flow Edits Process Errors

> **Note:**
>
> - Error: Engine does not process, however sometimes default value can get used for calculations.
> - Warning: Engine may use the default value or given wrong data for calculation, results may be incorrect.
> - Info: Does not impact any processing but results may not be as expected.

Table 2-22 List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
1	(AMRT_TYPE_CD <> 700 OR (amrt_type_cd = 700 AND amrt_term <> 0)) AND (CASE amrt_term_mult WHEN 'Y' THEN amrt_term * 365 WHEN 'M' THEN amrt_term * 30.41667 ELSE amrt_term END) < (CASE org_term_mult WHEN 'Y' THEN org_term * 365 WHEN 'M' THEN org_term * 30.41667 ELSE org_term END) THEN 'P' ELSE 'F' END	Amortization term can only be equal to zero on Non-Amortizing instruments	AMRT_TERM = ORG_TERM and AMRT_TERM_MULT = ORG_TERM_MULT	Original Term > Amortization Term	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
2	(ORIGINATION_DATE < AS_OF_DATE and CUR_PAR_BAL is not NULL and ORG_PAR_BAL is not NULL and CUR_PAR_BAL = ORG_PAR_BAL)	Instrument has originated in past but Current Par Balance and Original Par Balance are equal		Current Par Balance = Original Par Balance	Warning	
3	(ORIGINATION_DATE < AS_OF_DATE and DEFERRED_CUR_BAL is not NULL and DEFERRED_ORG_BAL is not NULL and DEFERRED_CUR_BAL = DEFERRED_ORG_BAL)	Instrument has originated in past but Deferred Current Balance and Deferred Original Balance are equal		Deferred Current Balance = Deferred Original Balance	Warning	
4	(CUR_GROSS_RATE is NULL or CUR_GROSS_RATE < 0)	Current gross rate is negative		Current Gross Rate < 0	Info	
5	(CUR_NET_RATE is NULL or CUR_NET_RATE < 0)	Current net rate is negative		Current Net Rate < 0	Info	
6	(ACCRUAL_BASIS_CD is NULL or ACCRUAL_BASIS_CD <1 or ACCRUAL_BASIS_CD >7)	Accrual basis code must be between 1 and 7 inclusively	ACCRUAL_BASIS_CD = 3	Invalid Accrual Basis	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
7	(AMRT_TYPE_CD is NULL or AMRT_TYPE_CD not in (100, 400, 600, 700, 710, 800, 801, 802, 820, 840, 850, 10, 20))	Amortization type must be a valid OFSAA code	AMRT_TYPE_CD = 700	Invalid Amortization Type	Warning	
8	(AMRT_TYPE_CD = 20 and (PMT_PATTERN_CD is null or PMT_PATTERN_CD <= 0))	Amortization type is Payment Pattern but Payment Pattern Code is invalid	AMRT_TYPE_CD = 700	Invalid Payment Pattern	Warning	
9	(AMRT_TYPE_CD = 20 and PMT_PATTERN_CD is not null and PMT_PATTERN_CD > 0 and PMT_PATTERN_CD not in (select AMRT_TYPE_CD from fsi_payment_pattern))	Amortization type is Payment Pattern but Payment Pattern definition does not exist	AMRT_TYPE_CD = 700	Invalid Payment Pattern	Warning	
10	(AMRT_TYPE_CD = 10 and (BEHAVIOUR_PATTERN_CD is null or BEHAVIOUR_PATTERN_CD <= 0))	Amortization type is Behaviour Pattern but Behaviour Pattern Code is invalid	AMRT_TYPE_CD = 700	Invalid Behaviour Pattern	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
11	(AMRT_TYPE_CD = 10 and BEHAVIOUR_PATTERN_CD is not NULL and BEHAVIOUR_PATTERN_CD > 0 and BEHAVIOUR_PATTERN_CD not in (select PATTERN_CD from fsi_behaviour_pattern_master))	Amortization type is Behaviour Pattern but Behaviour Pattern definition does not exist	AMRT_TYPE_CD = 700	Invalid Behaviour Pattern	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
12	(AMRT_TYPE_CD in (800, 801, 802) and NOT EXISTS (select 1 from FSI_D_Payment_Schedule WHERE FSI_D_Payment_Schedule.ID_NUMBER=SOURCE_TABLE.ID_NUMBER AND FSI_D_Payment_Schedule.IDENTITY_CODE = SOURCE_TABLE.IDENTITY_CODE AND FSI_D_Payment_Schedule.INSTRUMENT_TYPE_CD = SOURCE_TABLE.INSTRUMENT_TYPE_CD))	Cannot find record with matching ID Number, Identity Code and Instrument Type Code in Payment Schedule table	AMRT_TYPE_CD = 700	Invalid Payment schedule data	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
13	(AMRT_TYPE_CD in (800, 801, 802) and ORIGINATION_DATE > (select max(PAYMENT_DATE) from FSI_D_Payment_Schedule WHERE FSI_D_Payment_Schedule.ID_NUMBER=SOURCE_TABLE.ID_NUMBER AND FSI_D_Payment_Schedule.IDENTITY_CODE = SOURCE_TABLE.IDENTITY_CODE AND FSI_D_Payment_Schedule.INSTRUMENT_TYPE_CD = SOURCE_TABLE.INSTRUMENT_TYPE_CD))	Origination Date is greater than highest date in Payment Schedule	AMRT_TYPE_CD = 700	Invalid Payment schedule data	Warning	
14	(AMRT_TERM_MULT is NULL or AMRT_TERM_MULT not in ('D', 'M', 'Y'))	Amortization term multiplier must be D, M, or Y	AMRT_TERM_MULT = M	Invalid Amortization Term Multiplier	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
15	(AMRT_TYPE_CD = 600 AND (NEG_AMRT_EQ_MULT is NULL or NEG_AMRT_EQ_MULT not in ('D', 'M', 'Y')))	Negative Amortization Equalization Frequency multiplier must be D, M, or Y	NEG_AMRT_EQ_MULT = M	Invalid Negative Amortization Equalization Frequency Multiplier	Warning	
16	(AMRT_TYPE_CD = 600 and (NEG_AMRT_LIMIT is NULL or NEG_AMRT_LIMIT >=200 or NEG_AMRT_LIMIT < 0))	Negative Amortization limit value does not fall in a valid range (0 to 200), Applicable to Negative amortization instruments only	NEG_AMRT_LIMIT = 0	Invalid Negative Amortization Limit	Warning	
17	(ORG_TERM_MULT is NULL or ORG_TERM_MULT not in ('D', 'M', 'Y'))	Original term multiplier must be D, M, or Y	ORG_TERM_MULT= M	Invalid Original Term Multiplier	Warning	
18	(AMRT_TYPE_CD = 600 and (NEG_AMRT_PMT_CHG_FREQ is NULL or NEG_AMRT_PMT_CHG_FREQ < 0))	Payment Change Frequency cannot be negative, Applicable to Negative amortization instruments only	NEG_AMRT_PMT_CHG_FREQ = 0	Invalid Negative Amortization Payment Change Frequency	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
19	(AMRT_TYPE_CD = 600 and (NEG_AMRT_PMT_CHG_FREQ_MULT is NULL or NEG_AMRT_PMT_CHG_FREQ_MULT not in ('D', 'M', 'Y')))	Negative Amortization Payment Change Frequency Multiplier must be D, M, or Y	NEG_AMRT_PMT_CHG_FREQ_MULT = M	Invalid Negative Amortization Payment Change Frequency Multiplier	Warning	
20	(INT_PMT_FREQ_MULT is NULL or INT_PMT_FREQ_MULT not in ('D', 'M', 'Y'))	Interest Payment frequency multiplier must be D, M, or Y	INT_PMT_FREQ_MULT = M	Invalid Interest Payment Frequency Multiplier	Warning	
21	(PRIN_PMT_FREQ_MULT is NULL or PRIN_PMT_FREQ_MULT not in ('D', 'M', 'Y'))	Principal Payment frequency multiplier must be D, M, or Y	PRIN_PMT_FREQ_MULT = M	Invalid Principal Payment Frequency Multiplier	Warning	
22	(RATE_CHG_RND_CD is NULL or RATE_CHG_RND_CD < 0 or RATE_CHG_RND_CD > 4)	Rate change round code must be between 0 and 4	RATE_CHG_RND_CD = 0	Invalid Rate Change Rounding Code	Warning	
23	(ADJUSTABLE_TYPE_CD > 0 and (RATE_SET_LAG_MULT is NULL or RATE_SET_LAG_MULT not in ('D', 'M', 'Y')))	Rate Set Lag Multiplier must be D, M, or Y	RATE_SET_LAG_MULT = M	Invalid Rate Set Lag Multiplier	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
24	(ADJUSTABLE_TYPE_CD > 0 and (REPRICE_FREQ_MULT is NULL or REPRICE_FREQ_MULT not in ('D', 'M', 'Y')))	Repricing Frequency Multiplier must be D, M, or Y	REPRICE_FREQ_MULT = M	Invalid Repricing Frequency Multiplier	Warning	
25	(RATE_CHG_RND_FAC is NULL or RATE_CHG_RND_FAC < 0 or RATE_CHG_RND_FAC > 1)	Rate change round factor must be between 0 and 1	RATE_CHG_RND_FAC = 0	Invalid Rate Change Rounding Factor	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
26	(MATURITY_DATE < NEXT_INT_PAYMENT_DATE)	Maturity date cannot be before the next interest payment date	MATURITY_DATE = (CASE PRIN_PMT_FREQ_MULT WHEN 'Y' THEN ADD_MONTHS(NEXT_PRIN_PAYMENT_DATE, ((REMAIN_NO_PMTS -1)* PRIN_PMT_FREQ * 12)) WHEN 'M' THEN ADD_MONTHS(NEXT_PRIN_PAYMENT_DATE, ((REMAIN_NO_PMTS -1)* PRIN_PMT_FREQ)) ELSE NEXT_PRIN_PAYMENT_DATE + ((REMAIN_NO_PMTS -1)* PRIN_PMT_FREQ) END)	Maturity Date < Next Interest Payment Date	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
27	(MATURITY_DATE < NEXT_PRIN_PAYMENT_DATE)	Maturity date cannot be before the next principal payment date	MATURITY_DATE = (CASE PRIN_PMT_FREQ_MULT WHEN 'Y' THEN ADD_MONTHS(NEXT_PRIN_PAYMENT_DATE, ((REMAIN_NO_PMTS -1)* PRIN_PMT_FREQ * 12)) WHEN 'M' THEN ADD_MONTHS(NEXT_PRIN_PAYMENT_DATE, ((REMAIN_NO_PMTS -1)* PRIN_PMT_FREQ)) ELSE NEXT_PRIN_PAYMENT_DATE + ((REMAIN_NO_PMTS -1)* PRIN_PMT_FREQ) END)	Maturity Date < Next Principal Payment Date	Warning	
28	(AMRT_TYPE_CD = 600 and (NEG_AMRT_EQ_FREQ is NULL or NEG_AMRT_EQ_FREQ < 0))	Negative amortization equalization frequency cannot be negative, Applicable to Negative amortization instruments only	NEG_AMRT_EQ_FREQ = 0	Negative Amortization Equalization Frequency < 0	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
29	(AMRT_TYPE_CD = 600 and NEG_AMRT_EQ_FREQ is not null and NEG_AMRT_EQ_FREQ > 0 and NEG_AMRT_EQ_DATE <= greatest(ORIGINATION_DATE, AS_OF_DATE))	Negative Amortization equalization date is less than origination date (future origination) or less than the as-of-date (past origination), Applicable to Negative Amortization instruments only	NEG_AMRT_EQ_DATE = NEXT_REPRICE_DATE	Negative Amortization Equalization Date < Origination Date or As of Date	Warning	
30	(AMRT_TYPE_CD = 600 and NEG_AMRT_EQ_FREQ is not NULL and NEG_AMRT_EQ_FREQ > 0 and NEG_AMRT_EQ_DATE > MATURITY_DATE)	Next interest payment date is less than as-of-date (past origination case), As of Date cannot be greater than the origination date and greater than the next payment date.	NEG_AMRT_EQ_DATE = NEXT_REPRICE_DATE	Negative Amortization Equalization Date > Maturity Date	Warning	
31	(AS_OF_DATE > ORIGINATION_DATE and AS_OF_DATE >= NEXT_INT_PAYMENT_DATE)	Negative Amortization equalization date is after Maturity Date, Applicable to Negative Amortization instruments only	NEXT_INT_PAYMENT_DATE = AS_OF_DATE + 1	Next Interest Payment Date < As of Date	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
32	(AS_OF_DATE > ORIGINATION_DATE and AS_OF_DATE >= NEXT_PRIN_PAYMENT_DATE)	Next principal payment date is less than as-of-date (past origination case), As of Date cannot be greater than the origination date and greater than the next payment date.	NEXT_PRIN_PAYMENT_DATE= AS_OF_DATE + 1	Next Principal Payment Date < As of Date	Warning	
33	(ORIGINATION_DATE >= AS_OF_DATE and ORIGINATION_DATE >= NEXT_INT_PAYMENT_DATE)	Next interest payment date is less than origination date (future origination case)	NEXT_INT_PAYMENT_DATE = ORIGINATION_DATE + 1	Next Interest Payment Date < Origination Date	Warning	
34	(ORIGINATION_DATE >= AS_OF_DATE and ORIGINATION_DATE >= NEXT_PRIN_PAYMENT_DATE)	Next principal payment date is less than origination date (future origination case)	NEXT_PRIN_PAYMENT_DATE= ORIGINATION_DATE + 1	Next Principal Payment Date < Origination Date	Warning	
35	(ORIGINATION_DATE <= AS_OF_DATE and NEXT_REPRICE_DATE <= AS_OF_DATE and REPRICE_FREQ > 0)	Next repricing date is less than as-of-date (past origination case)	NEXT_REPRICE_DATE = AS_OF_DATE + 1	Next Reprice Date < As of Date	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
36	(ORIGINATION_DATE > AS_OF_DATE and NEXT_REPRICE_DATE < ORIGINATION_DATE and REPRICE_FREQ > 0)	Next repricing date is less than the origination date (future origination case)	NEXT_REPRICE_DATE = ORIGINATION_DATE + 1	Next Reprice Date < Origination Date	Warning	
37	(AMRT_TYPE_CD = 600 and (ORG_PAYMENT_AMT is NULL or ORG_PAYMENT_AMT = 0) and NEG_AMRT_PMT_DECR_LIFE > 0)	Payment decrease life is expressed as a percent of a original payment, Applicable to negative amortization instruments only	NEG_AMRT_PMT_DECR_LIFE = 0	Original Payment Amount = 0 and Negative Amortization Payment Decrease Limit (Life) <> 0	Warning	
38	(AMRT_TYPE_CD = 600 and (ORG_PAYMENT_AMT is NULL or ORG_PAYMENT_AMT = 0) and NEG_AMRT_PMT_INCR_LIFE > 0)	Payment increase life is expressed as a percent of a original payment, Applicable to negative amortization instruments only	NEG_AMRT_PMT_INCR_LIFE = 0	Original Payment Amount = 0 and Negative Amortization Payment Increase Limit (Life) <> 0	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
39	(ORG_TERM = 0 OR ORG_TERM <> (CASE ORG_TERM_MULT WHEN 'Y' THEN MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)* 12 WHEN 'M' THEN MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE) ELSE (MATURITY_DATE - ORIGINATION_DATE) END))	Original term should equal the time between the origination date and the maturity date	ORG_TERM#ORG_TERM_MULT = MONTHS_BETWEEN(MATURITY_DATE, RIGINATION_DATE)#	Original Term <> Maturity Date - Orgination Date	Warning	
40	(ORIGINATION_DATE is NULL or ORIGINATION_DATE < '1-Aug-1950' or ORIGINATION_DATE > '1-Aug-2099')	Origination date must be acceptable	ORIGINATION_DATE = 1-Jan-50	Origination date < 01/01/1950	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
41	(INT_PMT_FREQ > (CASE INT_PMT_FREQ_MULT WHEN 'Y' THEN MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)* 12 WHEN 'M' THEN MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE) ELSE (MATURITY_DATE - ORIGINATION_DATE) END))	Interest Payment frequency cannot be greater than original term	INT_PMT_FREQ#INT_PMT_FREQ_MULT = MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)#	Interest Payment Freq > Original Term	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
42	(PRIN_PMT_FREQ >(CASE PRIN_PMT_FREQ_MULT WHEN 'Y' THEN MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)* 12 WHEN 'M' THEN MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE) ELSE (MATURITY_DATE - ORIGINATION_DATE) END))	Principal Payment frequency cannot be greater than original term	PRIN_PMT_FREQ#PRIN_PMT_FREQ_MULT = MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)#	Principal Payment Freq > Original Term	Warning	
43	((CUR_PAYMENT is NULL or CUR_PAYMENT < 0 and CUR_PAR_BAL > 0) or (CUR_PAYMENT > 0 and CUR_PAR_BAL < 0))	Current payment and current par balance cannot have opposite signs	CUR_PAYMENT = 0	Current Payment and Current Par Balance have opposite signs	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
44	(AMRT_TYPE_CD = 600 and NEG_AMRT_PMT_CHG_FREQ > 0 and AS_OF_DATE > NEG_AMRT_PMT_ADJUST_DATE)	Negative Amortization Payment Adjustment Date is less than the as-of-date (past origination), Applicable to negative amortization instruments only	NEG_AMRT_PMT_ADJUST_DATE =NEXT_REPRICE_DATE	Negative Amortization Payment Adjustment Date < As of Date	Warning	
45	(AMRT_TYPE_CD = 600 and NEG_AMRT_PMT_CHG_FREQ > 0 and AS_OF_DATE < NEG_AMRT_PMT_ADJUST_DATE and NEG_AMRT_PMT_ADJUST_DATE < ORIGINATION_DATE)	Negative Amortization Payment adjustment date is less than origination date (future origination), Applicable to negative amortization instruments only	NEG_AMRT_PMT_ADJUST_DATE =NEXT_REPRICE_DATE	Negative Amortization Payment Adjustment Date < Origination Date	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
46	((INT_PMT_FREQ is NULL or INT_PMT_FREQ <= 0) and ((ORIGINATION_DATE <= AS_OF_DATE and MATURITY_DATE > AS_OF_DATE) or (ORIGINATION_DATE > AS_OF_DATE and MATURITY_DATE > ORIGINATION_DATE)))	Interest Payment frequency is less than or equal to zero, and both maturity date and origination date are valid dates and can be used to calculate payment frequency.	NEXT_INT_PAYMENT_DATE#ORG_TERM#ORG_TERM_MULT#INT_PMT_FREQ#INT_PMT_FREQ_MULT#REMAIN_NO_PMTS=MATURITY_DATE#MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)##MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)##	Interest Payment Frequency <= 0	Warning	
47	((PRIN_PMT_FREQ is NULL or PRIN_PMT_FREQ <= 0) and ((ORIGINATION_DATE <= AS_OF_DATE and MATURITY_DATE > AS_OF_DATE) or (ORIGINATION_DATE > AS_OF_DATE and MATURITY_DATE > ORIGINATION_DATE)))	Principal Payment frequency is less than or equal to zero, and both maturity date and origination date are valid dates and can be used to calculate payment frequency.	NEXT_PRIN_PAYMENT_DATE#ORG_TERM#ORG_TERM_MULT#PRIN_PMT_FREQ#PRIN_PMT_FREQ_MULT#REMAIN_NO_PMTS=MATURITY_DATE#MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)##MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)##	Principal Payment Frequency <= 0	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
48	((INT_PMT_FREQ is NULL or INT_PMT_FREQ <= 0) and ((ORIGINATION_DATE <= AS_OF_DATE and MATURITY_DATE <= AS_OF_DATE and NEXT_INT_PAYMENT_DATE > AS_OF_DATE) or (ORIGINATION_DATE > AS_OF_DATE AND MATURITY_DATE < ORIGINATION_DATE and NEXT_INT_PAYMENT_DATE > ORIGINATION_DATE)))	Interest payment frequency is less than or equal to zero and maturity date is invalid, but next interest payment date can be used to calculate a valid payment frequency	MATURITY_DATE#ORG_TERM#ORG_TERM_MULT#INT_PMT_FREQ#INT_PMT_FREQ_MULT#REMAIN_NO_PMTS=NEXT_INT_PAYMENT_DATE#MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)##MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)##	Interest Payment Frequency <= 0	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
49	((PRIN_PMT_FREQ is NULL or PRIN_PMT_FREQ <= 0) and ((ORIGINATION_DATE <= AS_OF_DATE and MATURITY_DATE <= AS_OF_DATE and NEXT_PRIN_PAYMENT_DATE > AS_OF_DATE) or (ORIGINATION_DATE > AS_OF_DATE AND MATURITY_DATE < ORIGINATION_DATE and NEXT_PRIN_PAYMENT_DATE > ORIGINATION_DATE)))	Principal payment frequency is less than or equal to zero and maturity date is invalid, but next interest payment date can be used to calculate a valid payment frequency	MATURITY_DATE#ORG_TERM#ORG_TERM_MULT#PRIN_PMT_FREQ#PRIN_PMT_FREQ_MULT#REMAIN_NO_PMTS=NEXT_PRIN_PAYMENT_DATE#MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)##MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)##	Principal Payment Frequency <= 0	Warning		

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
50	((INT_PMT_FREQ is NULL or INT_PMT_FREQ <= 0) and ((ORIGINATION_DATE <= AS_OF_DATE and MATURITY_DATE <= AS_OF_DATE and NEXT_INT_PAYMENT_DATE <= AS_OF_DATE) or (ORIGINATION_DATE > AS_OF_DATE AND MATURITY_DATE < ORIGINATION_DATE and NEXT_INT_PAYMENT_DATE < ORIGINATION_DATE)))	Interest payment frequency is less than or equal to zero and all dates which can be used to calculate payment frequency are in the past	MATURITY_DATE#NEXT_INT_PAYMENT_DATE#ORG_TERM#ORG_TERM_MULT#INT_PMT_FREQ#INT_PMT_FREQ_MULT#REMAIN_NO_PMTS=AS_OF_DATE + 1#AS_OF_DATE + 1#MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)##MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)##	Interest Payment Frequency <= 0	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
51	((PRIN_PMT_FREQ is NULL or PRIN_PMT_FREQ <= 0) and ((ORIGINATION_DATE <= AS_OF_DATE and MATURITY_DATE <= AS_OF_DATE and NEXT_PRIN_PAYMENT_DATE <= AS_OF_DATE) or (ORIGINATION_DATE > AS_OF_DATE AND MATURITY_DATE < ORIGINATION_DATE and NEXT_PRIN_PAYMENT_DATE < ORIGINATION_DATE)))	Principal payment frequency is less than or equal to zero and all dates which can be used to calculate payment frequency are in the past	MATURITY_DATE#NEXT_PRIN_PAYMENT_DATE#ORG_TERM#ORG_TERM_MULT#PRIN_PMT_FREQ#PRIN_PMT_FREQ_MULT#REMAIN_NO_PMTS=AS_OF_DATE + 1#AS_OF_DATE + 1#MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)##MONTHS_BETWEEN(MATURITY_DATE, ORIGINATION_DATE)##	Principal Payment Frequency <= 0	Warning	
52	(AMRT_TYPE_CD = 600 and (NEG_AMRT_PMT_INCR_CYCLE is NULL or NEG_AMRT_PMT_INCR_CYCLE < 0))	Negative Amortization Payment increase limit (cycle) cannot be less than zero, Applicable to negative amortization instruments only	NEG_AMRT_PMT_INCR_CYCLE= 0	Negative Amortization Payment Increase Limit (Cycle) < 0	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
53	(RATE_CAP_LIFE < CUR_GROSS_RATE and RATE_CAP_LIFE <> 0 and CUR_GROSS_RATE <> 0 and TEASER_END_DATE < AS_OF_DATE)	Current gross rate is greater than the rate cap life	RATE_CAP_LIFE=CUR_GROSS_RATE	Rate Cap Life < Current Gross Interest Rate	Info	
54	(RATE_CAP_LIFE < CUR_NET_RATE and RATE_CAP_LIFE <> 0)	Current net rate is greater than the rate cap		Rate Cap Life < Current Net Interest Rate	Info	
55	(RATE_CHG_MIN is NULL or RATE_CHG_MIN < 0)	Minimum rate change cannot be negative	RATE_CHG_MIN=0	Rate Change Minimum < 0	Warning	
56	(RATE_DECR_CYCLE is NULL or RATE_DECR_CYCLE < 0)	Rate decrease limit (cycle) must not be negative	RATE_DECR_CYCLE=0	Rate Decrease Limit (Cycle) < 0	Warning	
57	(RATE_FLOOR_LIFE > CUR_GROSS_RATE and CUR_GROSS_RATE <> 0 and TEASER_END_DATE < AS_OF_DATE)	Current gross rate is less than the rate floor		Rate Floor Life > Currrent Gross Interest Rate	Info	
58	(RATE_FLOOR_LIFE > CUR_NET_RATE)	Rate floor life must not be greater than the current net rate	RATE_FLOOR_LIFE=CUR_GROSS_RATE	Rate Floor Life > Currrent Net Interest Rate	Info	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
59	(RATE_INCR_CYCLE is NULL or RATE_INCR_CYCLE < 0)	Rate increase limit (cycle) cannot be less than 0	RATE_INCR_CYCLE=0	Rate Increase Limit (Cycle) < 0	Warning	
60	(REMAIN_NO_PMTS is NULL or REMAIN_NO_PMTS < 1)	There has to be at least 1 payment left	REMAIN_NO_PMTS=1	Remaining Number of Payments < 1	Warning	
61	(ADJUSTABLE_TYPE_CD > 0 and (RATE_SET_LAG is NULL or RATE_SET_LAG < 0))	Rate set lag cannot be negative	RATE_SET_LAG=0	Rate Set Lag < 0	Warning	
62	(TEASER_END_DATE < ORIGINATION_DATE)	Teaser End Date cannot be before Origination Date	TEASER_END_DATE=ORIGINATION_DATE	Teaser End Date < Origination Date	Warning	
63	(TEASER_END_DATE > MATURITY_DATE)	Teaser End Date cannot be after Maturity Date	TEASER_END_DATE=MATURITY_DATE	Teaser End Date > Maturity Date	Warning	
64	(AMRT_TYPE_CD = 710 and ORG_PAR_BAL < CUR_PAR_BAL)	Original balance on Rule of 78's instruments should be greater than current balance		Orginal Par Balance < Current Par Balance	Info	
65	(AMRT_TYPE_CD = 600 and (REPRICE_FREQ is NULL or REPRICE_FREQ = 0))	Reprice Frequency cannot be zero for Adjustable Negative Amortization instrument		Adjustable Negative Amortization instrument has Reprice Frequency = 0	Info	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
66	(REPRICE_FREQ <> 0 and LAST_REPRICE_DATE > NEXT_REPRICE_DATE)	Last repricing date is greater than next repricing date	LAST_REPRICE_DATE =(CASE REPRICE_FREQ_MULT WHEN 'Y' THEN ADD_MONTHS(NEXT_REPRICE_DATE, -REPRICE_FREQ*12) WHEN 'M' THEN ADD_MONTHS(NEXT_REPRICE_DATE, -REPRICE_FREQ) ELSE NEXT_REPRICE_DATE - REPRICE_FREQ END)	Last Reprice Date > Next Reprice Date	Warning	
67	(ADJUSTABLE_TYPE_CD in (50, 250) and (INTEREST_RATE_CD is NULL or INTEREST_RATE_CD <= 0))	Interest rate code must be valid for adjustable rate instruments	ADJUSTABLE_TYPE_CD=0	Adjustable Rate instrument has invalid Interest Rate Code	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
68	(ADJUSTABLE_TYPE_CD > 0 and INTEREST_RATE_CD > 0 and exists (select 1 from fsi_ircs where fsi_ircs.interest_rate_cd = SOURCE_TABLE.interest_rate_cd and fsi_ircs.volatility_curve_flg > 0))	Interest rate code of instrument is not an yield curve. Repricing attributes will be ignored and processed as fixed interest rate;	ADJUSTABLE_TYPE_CD=0	Invalid Interest Rate Code. Curve Type is not Interest Rate Curve	Warning	
69	(NET_MARGIN_CD is NULL or NET_MARGIN_CD not in (0, 1))	Valid net margin codes are 0 or 1.	NET_MARGIN_CD=0	Invalid Net Margin Code	Warning	
70	(AMRT_TYPE_CD = 600 and (NEG_AMRT_PMT_DECR_CYCLE is NULL or NEG_AMRT_PMT_DECR_CYCLE < 0))	Payment Decrease Limit (Cycle) cannot be less than zero. Applicable to negative amortization instruments only	NEG_AMRT_PMT_DECR_CYCLE=0	Negative Amortization Payment Decrease Limit (Cycle) = 0	Warning	
71	(AMRT_TYPE_CD = 600 and (NEG_AMRT_PMT_DECR_LIFE is NULL or NEG_AMRT_PMT_DECR_LIFE < 0))	Payment Decrease Limit (Life) cannot be less than zero. Applicable to negative amortization instruments only	NEG_AMRT_PMT_DECR_LIFE=0	Negative Amortization Payment Decrease Limit (Life) = 0	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
72	(AMRT_TYPE_CD = 600 and NEG_AMRT_PMT_DECR_LIFE <> 0 and CUR_PAYMENT < ORG_PAYMENT_AMT * (1 - NEG_AMRT_PMT_DECR_LIFE/100))	Current payment is less than the minimum payment amount. Applicable to negative amortization instruments only		Current Payment is less than Life Pay Floor	Info	
73	(AMRT_TYPE_CD = 600 and (NEG_AMRT_PMT_INCR_LIFE is NULL or NEG_AMRT_PMT_INCR_LIFE < 0))	Payment Increase Limit (Life) cannot be less than zero. Applicable to negative amortization instruments only	NEG_AMRT_PMT_INCR_LIFE=0	Negative Amortization Payment Increase Limit (Life) = 0	Warning	
74	(AMRT_TYPE_CD = 600 and NEG_AMRT_PMT_INCR_LIFE <> 0 and CUR_PAYMENT > ORG_PAYMENT_AMT * (1 + NEG_AMRT_PMT_INCR_LIFE/100))	Current payment is greater than the maximum payment amount. Applicable to negative amortization instruments only		Current Payment is greater than Life Pay Cap	Info	
75	(ISSUE_DATE > ORIGINATION_DATE)	Issue date cannot be greater than origination date	ISSUE_DATE=ORIGINATION_DATE	Issue Date > Origination Date	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
76	(REPRICE_FREQ is NULL or REPRICE_FREQ < 0)	Repricing frequency must not be negative	REPRICE_FREQ=0	Reprice Frequency < 0	Warning	
77	(AMRT_TYPE_CD = 710 and REPRICE_FREQ <> 0)	Rule of 78's instruments are implicitly fixed rate.	REPRICE_FREQ=0	Amortization type is Rule of 78's but Reprice Frequency is not 0	Warning	
78	(ORG_PAR_BAL = 0 and (REPRICE_FREQ is NULL or REPRICE_FREQ = 0))	For transfer pricing of fixed rate instruments, the original balance should be populated.		Original Par Balance is 0 for a fixed rate instrument	Info	
79	(REPRICE_FREQ <> 0 and TEASER_END_DATE > ORIGINATION_DATE and TEASER_END_DATE > AS_OF_DATE and NEXT_REPRICE_DATE > TEASER_END_DATE)	Next repricing date is greater than teaser end date.	NEXT_REPRICE_DATE =TEASER_END_DATE	Next Reprice Date > Teaser End Date	Warning	
80	(ADJUSTABLE_TYPE_CD <> 0 and (LRD_BALANCE is NULL or LRD_BALANCE = 0))	The balance as of the last repricing date cannot be equal to 0	LRD_BALANCE=CUR_PAR_BAL	Balance on Last Reprice Date = 0	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
81	(ADJUSTABLE_TYPE_CD <> 0 and (LAST_REPRICE_DATE < ISSUE_DATE or LAST_REPRICE_DATE < ORIGINATION_DATE))	Transfer pricing will not occur when the last repricing date is less than the issue date and origination date	LAST_REPRICE_DATE =ORIGINATION_DATE	Last Reprice Date < Issue/ Origination Date	Info	
82	(ADJUSTABLE_TYPE_CD = 0 and REPRICE_FREQ > 0)	Repricing frequency and adjustable type code are inconsistent	REPRICE_FREQ=0	Reprice Frequency > 0 for fixed rate instrument	Info	
83	(ADJUSTABLE_TYPE_CD <> 0 and (REPRICE_FREQ is NULL or REPRICE_FREQ = 0))	Repricing frequency and adjustable type code are inconsistent		Adjustable Type is not fixed but Reprice Frequency is 0	Info	
84	(AMRT_TYPE_CD = 710 and ADJUSTABLE_TYPE_CD <> 0)	Rule of 78's instrument should only have a Fixed adjustable type code.	ADJUSTABLE_TYPE_CD=0	Amortization type is Rule of 78's but Adjustable Type is not fixed	Warning	
85	(AMRT_TYPE_CD = 600 and ADJUSTABLE_TYPE_CD = 0)	Negative amortization instruments cannot have fixed adjustable type code	AMRT_TYPE_CD=100	Adjustable Type is fixed rate for Negative amortization instrument	Info	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
86	(LAST_INT_PAYMENT_DATE > NEXT_INT_PAYMENT_DATE and INT_PMT_FREQ > 0)	Last interest payment date is greater than next interest payment date and can be calculated using interest payment frequency	LAST_INT_PAYMENT_DATE=(CASE INT_PMT_FREQ_MULT WHEN 'Y' THEN ADD_MONTHS(NEXT_INT_PAYMENT_DATE, -INT_PMT_FREQ*12) WHEN 'M' THEN ADD_MONTHS(NEXT_INT_PAYMENT_DATE, -INT_PMT_FREQ) ELSE NEXT_INT_PAYMENT_DATE - INT_PMT_FREQ END)		Warning	
87	(LAST_INT_PAYMENT_DATE > NEXT_INT_PAYMENT_DATE and (INT_PMT_FREQ is NULL or INT_PMT_FREQ <= 0))	Last interest payment date is greater than next interest payment date, but cannot be calculated using interest payment frequency.	LAST_INT_PAYMENT_DATE=ORIGINATION_DATE		Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
88	(LAST_PRIN_PAYMENT_DATE > NEXT_PRIN_PAYMENT_DATE and PRIN_PMT_FREQ > 0)	Last principal payment date is greater than next principal payment date and can be calculated using principal payment frequency	LAST_PRIN_PAYMENT_DATE=(CASE PRIN_PMT_FREQ_MULT WHEN 'Y' THEN ADD_MONTHS(NEXT_PRIN_PAYMENT_DATE, -PRIN_PMT_FREQ*12) WHEN 'M' THEN ADD_MONTHS(NEXT_PRIN_PAYMENT_DATE, -PRIN_PMT_FREQ) ELSE NEXT_PRIN_PAYMENT_DATE - PRIN_PMT_FREQ END)		Warning	
89	(LAST_PRIN_PAYMENT_DATE > NEXT_PRIN_PAYMENT_DATE and (PRIN_PMT_FREQ is NULL or PRIN_PMT_FREQ <= 0))	Last principal payment date is greater than next principal payment date, but cannot be calculated using principal payment frequency.	LAST_PRIN_PAYMENT_DATE=ORIGINATION_DATE	Last principal payment date > Next principal payment date	Warning	
90	(LAST_INT_PAYMENT_DATE < ORIGINATION_DATE)	Last interest payment date cannot be less than the origination date	LAST_INT_PAYMENT_DATE=ORIGINATION_DATE	Last Interest Payment Date < Origination Date	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
91	(LAST_PRIN_PAYMENT_DATE < ORIGINATION_DATE)	Last principal payment date cannot be less than the origination date	LAST_PRIN_PAYMENT_DATE=ORIGINATION_DATE	Last Principal Payment Date < Origination Date	Warning	
92	(LAST_INT_PAYMENT_DATE > AS_OF_DATE and ORIGINATION_DATE <= AS_OF_DATE)	Last interest payment date cannot be greater than the as-of-date if the instrument originated in the past.	LAST_INT_PAYMENT_DATE=AS_OF_DATE	Last interest payment date > As of Date	Warning	
93	(LAST_PRIN_PAYMENT_DATE > AS_OF_DATE and ORIGINATION_DATE <= AS_OF_DATE)	Last principal payment date cannot be greater than the as-of-date if the instrument originated in the past.	LAST_PRIN_PAYMENT_DATE=AS_OF_DATE	Last principal payment date > As of Date	Warning	
94	(INTEREST_TIMING_TYPE_CD = 2 and AMRT_TYPE_CD in (100, 400, 600, 710, 800, 840, 850))	Interest type can only be arrears for conventionally amortizing instruments.	INTEREST_TIMING_TYPE_CD=1	Amortization Type is conventional but interest timing is Advance	Warning	
95	(INTEREST_TIMING_TYPE_CD is NULL or INTEREST_TIMING_TYPE_CD not in (1, 2, 3))	Interest type must be a valid OFSAA code.	INTEREST_TIMING_TYPE_CD=1	Invalid interest timing type	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
96	(COMPOUND_BASIS_CD is NULL or COMPOUND_BASIS_CD not in (110, 120, 130, 140, 150, 160, 170))	Compounding basis code must be a valid OFSAA code	COMPOUND_BASIS_CD=160	Invalid Compounding Basis Code	Warning	
97	(ACCRUAL_BASIS_CD IN (1, 4, 5) and (INT_PMT_FREQ_MULT = 'D' or AMRT_TYPE_CD in (800,801, 802)))	Accrual basis code cannot have a 30 day month assumption on instruments defined by a payment schedule	ACCRUAL_BASIS_CD=3	Amortization Type / Accrual Basis Error	Warning	
98	(ACCRUAL_BASIS_CD = 7 and (HOLIDAY_CALENDAR_CODE is NULL or HOLIDAY_CALENDAR_CODE <=0 or HOLIDAY_CALC_OPTION_CD is NULL or HOLIDAY_CALC_OPTION_CD not in (1, 2) or HOLIDAY_ROLLING_CONVENTION_CD is NULL or HOLIDAY_ROLLING_CONVENTION_CD not in (2,3,4,5)))	Holiday calendar must be give when using Business/252 accrual basis		Holiday calendar not given for B/252 accrual basis	Info	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
99	(AMRT_TYPE_CD = 10 and BEHAVIOUR_TYPE_CD is NULL)	Behaviour Type Code is Null, defaulted to 1 (Non-Maturity)	BEHAVIOUR_TYPE_CD=1	Behaviour Type Code is Null	Warning	
100	(AMRT_TYPE_CD = 10 and BEHAVIOUR_TYPE_CD not in (1,2,3))	Behaviour Type Code is invalid, defaulted to 1 (Non-Maturity)	BEHAVIOUR_TYPE_CD=1	Invalid Behaviour Type Code	Warning	
101	(AMRT_TYPE_CD = 10 and BEHAVIOUR_TYPE_CD = 2 and (BEHAVIOUR_SUB_TYPE_CD is NULL or BEHAVIOUR_SUB_TYPE_CD not in (201, 202, 203)))	Behaviour Sub Type should be 201 or 202 or 203 when Behaviour Type is Non-Performing	BEHAVIOUR_SUB_TYPE_CD=201	Invalid Behavior Sub Type Code	Warning	
102	(AMRT_TYPE_CD = 10 and BEHAVIOUR_TYPE_CD = 3 and (BEHAVIOUR_SUB_TYPE_CD is NULL or BEHAVIOUR_SUB_TYPE_CD not in (305, 306)))	Behaviour Sub Type should be 305 or 306 when Behaviour Type is Devolvement and Recovery	BEHAVIOUR_SUB_TYPE_CD=305	Invalid Behavior Sub Type Code	Warning	
103	(AMRT_TYPE_CD = 840 and RESIDUAL_AMOUNT < 0)	Residual Amount cannot be less than 0 for Lease instrument	RESIDUAL_AMOUNT=0	Invalid Residual Amount for Lease instrument	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
104	(AMRT_TYPE_CD = 840 and RESIDUAL_AMOUNT > CUR_PAR_BAL)	Residual Amount cannot be higher than Current Par Balance for Lease instrument	RESIDUAL_AMOUNT=0	Invalid Residual Amount for Lease instrument	Warning	
105	(AMRT_TYPE_CD = 850 and MATURITY_AMOUNT > 0 and ADJUSTABLE_TYPE_CD > 0)	Annuity instrument with maturity amount must have fixed interest rate	ADJUSTABLE_TYPE_CD=0	Invalid Adjustable Type for Annuity with Maturity Amount	Warning	
106	(MOA_EXPECTED_BAL > 0 and (MOA_OFFSET_PERCENT is NULL or MOA_OFFSET_PERCENT < 0))	Expected balance is greater than 0 but offset percentage is less than 0	MOA_OFFSET_PERCENT=0	Invalid offset percent	Warning	
107	((MOA_EXPECTED_BAL * MOA_OFFSET_PERCENT/100) > CUR_PAR_BAL)	Calculated Offset Balance is higher than Current Par Balance		Calculated Offset Balance > Current Par Balance	Info	
108	(ADJUSTABLE_TYPE_CD = 10 and (REPRICE_PATTERN_CD is NULL or REPRICE_PATTERN_CD <= 0))	Invalid reprice pattern code given for instrument	ADJUSTABLE_TYPE_CD=0	Invalid reprice pattern code	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
109	(ADJUSTABLE_TYPE_CD = 10 and REPRICE_PATTERN_CD > 0 and REPRICE_PATTERN_CD not in (select ADJUSTABLE_TYPE_CD from fsi_reprice_pattern))	Invalid reprice pattern code given for instrument	ADJUSTABLE_TYPE_CD=0	Invalid reprice pattern code	Warning	
110	(ADJUSTABLE_TYPE_CD = 0 and (ORG_PAYMENT_AMT is NULL or ORG_PAYMENT_AMT <= 0))	Original payment amount is required for fixed-rate instruments	ORG_PAYMENT_AMT=CUR_PAYMENT	Invalid Original Payment Amount	Warning	
111	(PERCENT_SOLD < 0 or PERCENT_SOLD > 99)	Percent Sold must be greater than or equal to zero and less than 100	PERCENT_SOLD=0	Invalid Percent Sold	Warning	
112	(CUR_PAR_BAL is NULL or CUR_PAR_BAL = 0)	Instruments with Current Par Balance zero are not processed.		Current Par Balance = 0	Warning	
113	(EMBEDDED_OPTIONS_FLG = 1 and AMRT_TYPE_CD <> 700)	Embedded option is supported only for non-amortizing instrument	EMBEDDED_OPTIONS_FLG=0	Invalid embedded options flag	Warning	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
114	(ADJUSTABLE_TYPE_CD = 0 and TP_EFFECTIVE_DATE > ORIGINATION_DATE)	TP Effective Date must not be after Origination Date for fixed rate instrument		Invalid TP Effective Date	Info	
115	(ADJUSTABLE_TYPE_CD = 0 and TP_EFFECTIVE_DATE < ORIGINATION_DATE)	TP Effective Date must not be before Origination Date for fixed rate instrument		Invalid TP Effective Date	Info	
116	(ADJUSTABLE_TYPE_CD > 0 and TP_EFFECTIVE_DATE > LAST_REPRICE_DATE)	TP Effective Date must not be after Last Reprice Date for non-fixed rate instrument		Invalid TP Effective Date	Info	
117	(ADJUSTABLE_TYPE_CD > 0 and TP_EFFECTIVE_DATE <= NEXT_REPRICE_DATE)	TP Effective Date must not equal to Next Reprice Date for non-fixed rate instrument		Invalid TP Effective Date	Info	
118	(TP_EFFECTIVE_DATE is not NULL and TP_EFFECTIVE_DATE < '01-JAN-1970')	TP Effective Date is before '01-JAN-1970'	TP_EFFECTIVE_DATE =ORIGINATION_DATE	Invalid TP Effective Date	Info	
119	(TP_EFFECTIVE_DATE > MATURITY_DATE)	TP Effective Date is after maturity date	TP_EFFECTIVE_DATE =ORIGINATION_DATE	Invalid TP Effective Date	Info	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
120	(ADJUSTABLE_TYPE_CD = 0 and ADJ_EFFECTIVE_DATE > ORIGINATION_DATE)	Adjustment Effective Date must not be after Origination Date for fixed rate instrument		Invalid Adjustment Effective Date	Info	
121	(ADJUSTABLE_TYPE_CD = 0 and ADJ_EFFECTIVE_DATE < ORIGINATION_DATE)	Adjustment Effective Date must not be before Origination Date for fixed rate instrument		Invalid Adjustment Effective Date	Info	
122	(ADJUSTABLE_TYPE_CD > 0 and ADJ_EFFECTIVE_DATE > LAST_REPRICE_DATE)	Adjustment Effective Date must not be after Last Reprice Date for non-fixed rate instrument		Invalid Adjustment Effective Date	Info	
123	(ADJUSTABLE_TYPE_CD > 0 and ADJ_EFFECTIVE_DATE <= NEXT_REPRICE_DATE)	Adjustment Effective Date must not equal to Next Reprice Date for non-fixed rate instrument		Invalid Adjustment Effective Date	Info	
124	(ADJ_EFFECTIVE_DATE is not NULL and ADJ_EFFECTIVE_DATE < '01-JAN-1970')	Adjustment Effective Date is before '01-JAN-1970'	ADJ_EFFECTIVE_DATE=ORIGINATION_DATE	Invalid Adjustment Effective Date	Info	
125	(ADJ_EFFECTIVE_DATE > MATURITY_DATE)	Adjustment Effective Date is after maturity date	ADJ_EFFECTIVE_DATE=ORIGINATION_DATE	Invalid Adjustment Effective Date	Info	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
10001	(OPTION_RFR_IRC_CD > 0 and exists (select 1 from fsi_ircs where fsi_ircs.RISK_FREE_RATE_FLG is null or fsi_ircs.RISK_FREE_RATE_FLG = 0 and fsi_ircs.INTEREST_RATE_CD=SOURCE_TABLE.OPTION_RFR_IRC_CD))	Risk Free Interest Rate Curve is not defined as Risk-Free.		Invalid Risk Free Interest Rate Curve	Error	
10002	(OPTION_RFR_IRC_CD > 0 and exists (select 1 from fsi_ircs where fsi_ircs.ISO_CURRENCY_CD != SOURCE_TABLE.ISO_CURRENCY_CD and fsi_ircs.INTEREST_RATE_CD=SOURCE_TABLE.OPTION_RFR_IRC_CD))	Currency of risk free Interest Rate Curve is different from currency of instrument record.		Invalid Risk Free Interest Rate Curve	Error	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
10003	(OPTION_VOL_IRC_CD > 0 and exists (select 1 from FSI_VOL_SURFACE_MASTER where FSI_VOL_SURFACE_MASTER.ISO_CURRENCY_CD != SOURCE_TABLE.ISO_CURRENCY_CD and FSI_VOL_SURFACE_MASTER.VOL_SURFACE_SYS_ID= SOURCE_TABLE.OPTION_VOL_IRC_CD))	Currency of Volatility Surface is different from currency of instrument record.		Invalid Volatility Surface	Error	
10004	(EMBEDDED_OPTIONS_FLG = 1 and STRIKE_TYPE_CD not in (1,2))	Strike Type must be Rate or Price for instruments with embedded options.		Invalid Strike Type for Embedded Option	Error	
10005	(EMBEDDED_OPTIONS_FLG = 1 and EXERCISE_TYPE_CD not in (1,2,3))	Exercise type for instrument with embedded options must be American, Bermudan or European.		Invalid Exercise Type for Embedded Option	Error	

Table 2-22 (Cont.) List of Error Codes for Cash Flow Edits

Rule ID	Error Condition	Error Description	Assignment	Warning	Error Level	Edits Priority
10006	(EMBEDDED_OPTIONS_FLG = 1 and EXERCISE_TYPE_CD = 1 and OPTION_START_DATE <= AS_OF_DATE)	Option Start Date for an American option must be after As of Date.		Invalid Option Start Date for American Option	Info	
10007	(EMBEDDED_OPTIONS_FLG = 1 and OPTION_TYPE_CD not in (1,2))	Option Type must be Call or Put for instrument with Embedded Option.		Invalid Option Type for Embedded Option	Error	
10008	(EMBEDDED_OPTIONS_FLG = 1 and STRIKE_TYPE_CD = 2 and nvl(STRIKE_IRC_CD,0) < 1)	Strike type is Rate for instrument with Embedded Option but Strike Interest Rate Curve is not available.		Invalid Strike Interest Rate Curve for Embedded Option	Error	
10009	(EMBEDDED_OPTIONS_FLG = 1 and STRIKE_TYPE_CD = 2 and nvl(RATE_LOOKUP_CD,0) not in (1,2,3,4))	Strike type is Rate for instrument with Embedded Option but Rate Lookup Code is not available.		Invalid Rate Lookup Code for Embedded Option	Error	

2.7 Cash Flow Edits Process

This module discusses the procedure for validating and cleansing your Instrument Table Data before you process it to generate Cash Flow-based results. The Cash Flow Edits Process allows you to verify the accuracy and check the completeness of your Instrument Table Data.

Topics

- Cash Flow Edits Process Summary Page
- Search Cash Flow Edits Process
- Create Cash Flow Edits Process
- Execute Cash Flow Edits Process
- View Cash Flow Edits Process Execution Details

2.7.1 Cash Flow Edits Process Summary Page

This page is the gateway to all Cash Flow Edits Processes and related functionality. You can navigate to other pages relating to Cash Flow Edits Process from this point.

The **Cash Flow Edits Process Summary** Page displays the following column:

Table 2-23 Cash Flow Edits Process – Fields and Descriptions

Field	Description
Process ID	Displays the Process ID of Cash Flow Edits Process.
Name	Displays the Cash Flow Edits Process's short name.
Folder	Displays the Folder name where Cash Flow Edits Process is saved.
Access Type	Displays the access type of Process. It can be Read-Only or Read/Write.
Status	Displays the status of the Process.
Last Run By	Displays the Name of the user who last runs the Cash Flow Edits Process.
Last Run Date	Displays the Date and Time when Cash Flow Edits Process was run last.
Action	Displays the list of actions that can be performed on the Cash Flow Edits Process. For more information, see Cash Flow Edits Process – Icons and Descriptions.

The **Action** column on **Cash Flow Edits Process Summary** Page offers several actions that allow you to perform different functions. The following actions are available for the Cash Flow Edits Process Rule.

Table 2-24 Cash Flow Edits Process – Icons and Descriptions

Field	Description
Add	Click Add icon to build a new Cash Flow Edits Process.
View/Edits	Click on the **Action** icon against the Cash Flow Edits Process Name and select View/ Edits to view or Edits the contents of a Cash Flow Edits Process in read/write format.
Save As	Click on the **Action** icon against the Cash Flow Edits Process Name and select Save As to create a copy of an existing Cash Flow Edits Process

Table 2-24 (Cont.) Cash Flow Edits Process – Icons and Descriptions

Field	Description
Delete	Click on the **Action** icon against the Cash Flow Edits Process Name and select Delete to delete an existing Cash Flow Edits.
Execute	Click on the **Action** icon against the Cash Flow Edits Process Name and select Execute to execute an existing Cash Flow Edits Process. After clicking Execute, the Run Parameter Execution Window is displayed. Select As of Date (Execution Date) and Legal Entity, and then click Run. For more information, see Executing Cash Flow Edits Processes section.
Execution Details	Click on the **Action** icon against the Cash Flow Edits Process Name and select Execute Details to view execution details of the Cash Flow Edits Process.

You must create and run Cash Flow Edits processes on your Instrument Table Data before you submit Cash Flow Engine based rules for processing.

2.7.2 Search Cash Flow Edits Process

Search for a Cash Flow Edits Process to perform any of the following tasks:

- View
- Edits
- Copy
- Delete
- Refresh

Prerequisites

Predefined Cash Flow Edits Process

Procedure

To search for a new Cash Flow Edits Process, follow these steps:

1. Navigate to the **Cash Flow Edits Process Summary** Page.
2. Enter the **Code, Name, Description, Dimension, Hierarchy**, or **Folder** of the **Cash Flow Edits Process** and click **Search** . Only Cash Flow Edits Process that match the search criteria are displayed.

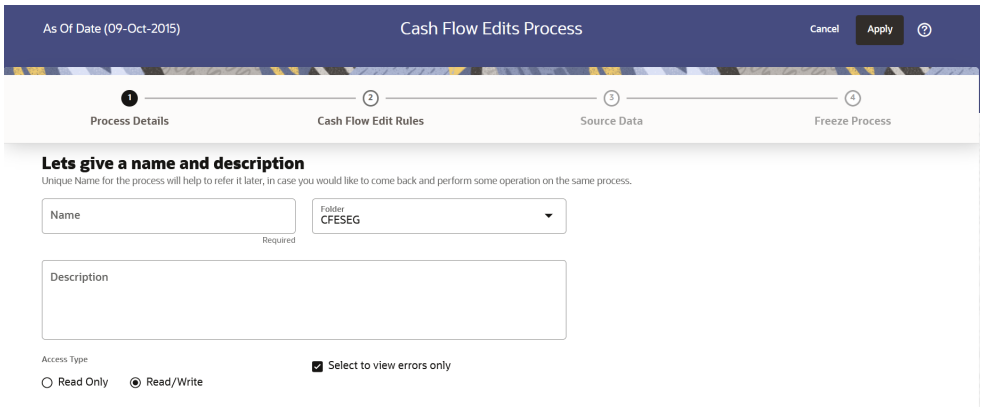
2.7.3 Create Cash Flow Edits Process

Creating a Cash Flow Edits Process is a one-step process. You define both the attributes that uniquely describe a particular Cash Flow Edits Process and the data to be validated or cleansed by that process on the Create Cash Flow Edits Process Page.

1. Navigate to the **Cash Flow Edits Process Summary** Page.

2. Click the **Add** icon. The **Create Cash Flow Edits Process** Page is displayed.

Figure 2-23 Process Details



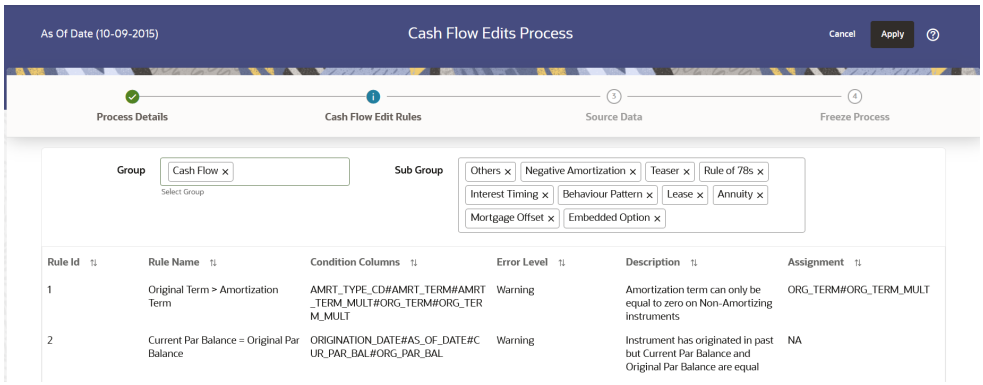
3. Enter the process details as shown in the following table:

Table 2-25 List of Process details used for Creating Cash Flow Edits Process

Field	Description
Name	Enter the name of the Cash Flow Edits Process.
Description	Enter the description of the Cash Flow Edits Process.
Select to view errors only	Selecting this parameter allows you to view the results of running a Cash Flow Edits Process before the system updates the underlying records in the Instrument tables. The default value of this parameter is checked.
Folder	Enter the Folder details where Cash Flow Edits Process needs to be saved.
Access Type	Select the Access Type as Read-Only or Read/Write.

4. Click **Apply** to navigate to the **Cash Flow Edits Rules** section.

Figure 2-24 Cash Flow Edits Rules



5. Enter the Cash Flow Edits Rules details shown in the following table:

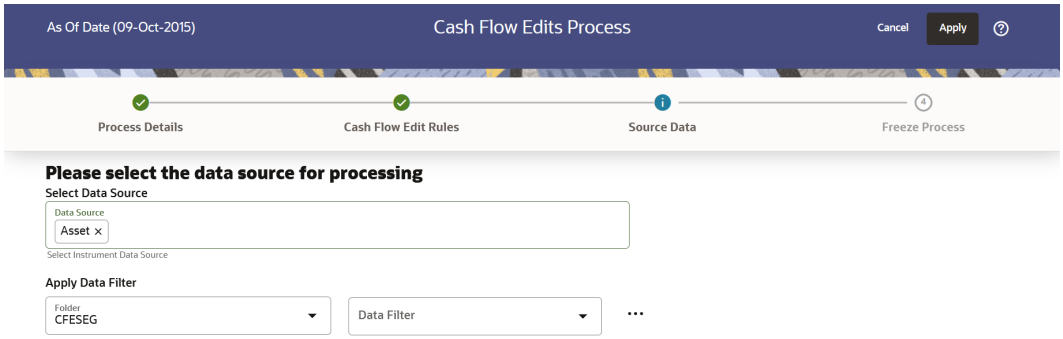
Table 2-26 List of Cash Flow Edits Rules details used for Creating Cash Flow Edits Process

Field	Description
Group	Select the group of Cash Flow Edits Rules that you want to include in the process. For example, Cash Flow
Sub Group	Select the sub group of Cash Flow Edits Rules that you want to include in the process. The value of this field varies based on the selected Group. The list of Rules with conditions is displayed.

The details of the process for the selected group and sub-group are listed on the screen for reference.

6. Click **Apply** to navigate to the **Source Data** section.

Figure 2-25 Source Data



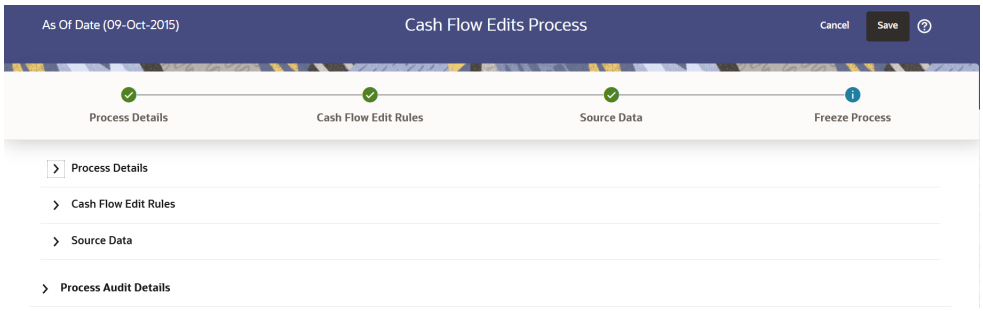
7. Enter the Source Data details as shown in the following table:

Table 2-27 List of Source Data details used for Creating Cash Flow Edits Process

Field	Description
Data Source	This field allows you to select the Instrument tables that must be included in a Cash Flow Edits Process.
Data Filter Folder	Select the Folder from which you want to apply Data Filter.
Data Filter	This field allows you to select a subset of data for processing by selecting a filter that was previously created. Click Action button next to Data Filter to add, edit or view the Data Filter.

8. Click **Apply** to navigate to the **Freeze Process** section.

Figure 2-26 Freeze Process



9. Click **Save** on the **Freeze Process** Window after verifying all the details.
10. The Cash Flow Edits Process is saved and the Summary Page is displayed.

2.7.4 Executing Cash Flow Edits Process

Execute a Cash Flow Edits Process to check the accuracy and the completeness of your Instrument Table Data. When run in Preview Mode, you can view the results of running a Cash Flow Edits Process by querying the FSI_O_CFE_EDITS_MESSAGES_HIST table for generated errors before the system updates the underlying records in the Instrument tables.

You can execute Cash Flow Edits Process using following methods:

- Cash Flow Edits Process UI
- Scheduler Service

2.7.4.1 Using Cash Flow Edits UI

To execute the Cash Flow Edits Process, follow these steps:

1. Navigate to the **Cash Flow Edits Process Summary** Page.
2. Search for a process.
3. Click on the **Action** icon against the Cash Flow Edits Process Name and select Execute to execute an existing Cash Flow Edits Process. The **Run Parameter Execution** Window is displayed.
4. Select the **As of Date (Execution Date)** and **Legal Entity**, and then click **Run**.
5. The **Cash Flow Edits Run Confirmation** Page is displayed. The status of the process is displayed in the **Status** Column. After completion of the process, you can navigate to the Execution Details Page by selecting the **Execution Details** option under the **Action** Column.

> **Note:**
>
> You can view the results of running a Cash Flow Edits Process before the system updates the underlying records in the Instrument tables, provided you selected Preview Mode while defining it. If the Process runs in Preview Mode, query the FSI_O_CFE_EDITS_MESSAGES_HIST table for any generated errors

2.7.4.2 Using Scheduler Service

A batch with following details gets automatically created when Cash Flow Edits Process is saved:

- **Code:** Process Id of Cash Flow Edits Process
- **Name:** Name of Cash Flow Edits Process
- **Description:** Description of Cash Flow Edits Process

To execute the batch, navigate to Operations and Processes , select Scheduler, and then select Schedule Batch.

You can also define new batch to execute any Cash Flow Edits Process by following these steps:

1. Navigate to **Operations and Processes**, select **Scheduler**, and then select **Define Batch**.
2. Define a new batch.
3. Enter the Batch Name and Description, and then Save the batch.
4. To add a task, navigate to **Define Task**.
5. Select the Batch from the **Batch** drop-down list on the **Define Task** Window.
6. Click the **Add** button.
7. Define the task with below details:
    - **Task Code:** Must be same as the Process Id of Cash Flow Edits Process
    - **Task Name:** This can be same a name of the Cash Flow Edits Process or something else
    - **Task Description:** This can be same a name of the Cash Flow Edits Process or something else
    - **Task Type:** REST
    - **Component:** Cash Flow Edits
    - **Process Name:** Select one value from the list
    - **Legal Entity Hierarchy:** Select one value from the list
    - **Legal Entity:** Select one value from the list
8. **Save** and **Execute** the batch with Batch ID and MIS Date.

For more information, see the Scheduler Service.

2.7.5 Viewing Execution Details of Cash Flow Edits Process

To view the execution details of the Cash Flow Edits Process, follow these steps:

1. Navigate to the **Cash Flow Edits Process Summary** Page.
2. Search for a Process.
3. Click on the **Action** icon against the Cash Flow Edits Process Name and select **Execution Details**. The **Execution Details** window is displayed.

4. Click any **Execution ID** to view the log details. The **Log Viewer** Window shows the complete details of process along with Batch Run ID Information.
5. Click **Download** to export the details of cash flow edits in **csv** format. This will help you to understand errors found in instrument data.
6. If process is executed in '**Non-preview**' mode, then records which are modified by Cash Flow Edits Process can be identified by looking at columns `CF_EDITS_BATCH_RUN_ID` and `UPDATED_BY_CF_EDITS` in instrument processing table.

3
Business Rules Administration

This section covers the following topics:

1. Currency module supports the definitions and maintenance of currencies. For more information, see Currencies.
2. Dimension Management facilitates you to categorize data into a single object as a Member; define levels and aggregate data to form the Hierarchies, and distinguish each member by defining the required Attributes. For more information, see Dimension Management.
    - Dimension Members refer to the individual items that constitute a dimension when data is categorized into a single object such as Product, Organization, Time, and so on. For more information, see Members.
    - Attributes refers to the distinguished properties or qualifiers that describes a Dimension Member. For more information, see Attributes.
    - Hierarchies refer to Dimension Members that are arranged in levels, with each level representing the aggregated total of the data from the level below. One dimension type can have multiple hierarchies associated with it. For more information, see Hierarchies.
3. This section covers the procedures to set the Global Preference Settings and User Preference Settings. For more information, see Preferences.
4. Currency Rates module uses the currencies defined and activated in the Currency module to support the creation and maintenance of Historical Exchange Rates. For more information, see Currency Rates.
5. The Interest Rate Curve in PBSM Cloud Service allows you to define and manage complex Yield Curve definitions using multiple Rate Formats and other Rate Attributes to give you data storage capabilities appropriate to your market. The Interest Rate Curve supports the creation and maintenance of Historical Rate Data for each Yield Curve you define. For more information, see Interest Rate Curve.
6. An Economic Indicator is any economic statistic such as the Consumer Price Index (CPI), growth rate of the Gross Domestic Product (GDP), unemployment rate, Purchasing Managers Index, indices of consumer confidence, and so on. For more information, see Economic Indicator.
7. Currency Gain/Loss occurs when an entity buys/sells goods or services in a foreign currency, and that currency fluctuates relative to their Local currency, this can create differences in value of the monetary Assets and Liabilities. For more information, see Currency Gain/Loss
8. The Time Bucket module describes the procedure for working with and managing Time Bucket rules. The Time Bucket Rules allow users to create the time bucket definitions used for computing and outputting aggregated cash flows across time. The Time Bucket Rules determine the granularity of cash flow output and can be set at any frequency through a combination of daily, monthly, and yearly buckets. For more information, see Time Bucket

9. A Holiday is a day designated as having special significance for which individuals, a government, or some religious groups have deemed that observance is warranted and thus no business is carried on this day. For the procedure to create a Holiday Calendar and generate a list of the weekend and holiday dates, see Holiday Calendar.
10. User Defined Behavior Patterns allow you to define Principal Amortization Schedules for Non-Maturity Products in your portfolio. For more information, see Behavior Pattern.
11. User Defined Repricing Patterns provide a mechanism to capture Instrument Repricing Patterns that are too complex to be accommodated through the use of the Standard Account Table Fields. For more information, see Repricing Patterns.
12. User defined payment patterns allow you to define custom repayment patterns for products in your portfolio. For more information, see Payment Pattern.
13. The Multi-Dimensional Balance Sheet Structure or MDBSS is a comprehensive, user-defined, multi-dimensional hierarchy. It replaces the single dimension hierarchy for processing and reporting and allows you to incorporate one or more organizational hierarchies into a single concept. This new framework is designed to be a complete system that persists throughout the Application. For more information, see Multi-Dimensional Balance Sheet Structure
14. Product Characteristic Rules are used to define payment, pricing, and repricing characteristics for new business. These Product Characteristics are rules that are placed on MDBSS nodes to be used in Forecasting that instruct the Application on what key new business contractual and behavioral features are to be included, such as amortization, adjustable type, compounding, day count, and other key features. For more information, see Product Characteristic.
15. A Prepayment Rule contains methodologies to model the prepayment behavior of various amortizing instruments and quantify the associated Prepayment Risk. For more information, see Prepayment Rules.
16. Prepayment Models can be referenced by a Prepayment Rule to Model Prepayment Behavior of instruments based on a range of instrument level attributes. For more information, see Prepayment Models.
17. The Behavior Pattern Rule UI allows you to group Behavior Pattern codes (behavioral assumptions) together in a set at the Product/Currency level which then can be rotated to select a value on a combination. For more information, see Behavior Pattern Rules.
18. The Volatility Curve UI allows you to select the curve. The curve selected will contain volatility rates. If you select this option, all other curve attributes become disabled and the curve is used exclusively for managing volatility details. For more information, see Volatility Curve
19. The IRRBB Standardized Approach UI allosws you to view, edit, and delete currencies, shocks, or other parameters currently stored in the IRRBB Standardized Approach shocks table FSI_IRC_STDAPRCH_SHOCKS as well as the Standardized Approach Prepayment/Early Redemption scalars table FSI_IRC_STDAPRCH_CPRER. For more information, see IRRBB Standardized Approach
20. Forecast Rate scenario assumptions allow you to define future interest rates, future economic indicators, and future currency exchange rates. Use interest rate forecasts to project cash flows, including pricing new business, re-pricing existing business, calculating prepayments, and determining discount methods. Use Economic Indicator forecasts to include in behavioral modeling and scenario/

stress analysis. Use currency exchange rate forecasts to account for the effects of currency fluctuations on income.For more information, see Forecast Rates.

21. This module describes the procedure for working with and managing Discount Method Rules. Discount Method Rules allow users to define the method for discounting projected Cash Flows for market value and duration calculation purposes. For more information, see Discount Methods.
22. The Pricing Margin Rules allow users to define pricing margins (or spreads) for your products. Pricing margins are defined period by period based on your active Time Bucket definition, for each product and, potentially, each currency. Pricing margins work together with an underlying base interest rate curve to determine note rate pricing for new business volumes defined through Forecast Balance Rules. For more information, see Pricing Margin
23. The Forecast Balance rules module discusses modeling of new business activity through the Forecast Balance rules. Included are assumption setup and processing. Within a Forecast Balance rule, you specify the amount of new activity generated per modeling bucket on each MDBSS node within each active currency. To create a new business assumption, you select from following available forecasting methods. For more information, see Forecast Balance rules
24. Filters allow you to select data using the defined expressions. For more information, see Filters.
25. This module discusses the procedure for creating and executing a Static Deterministic Process (existing business only). When all the required assumptions are defined, The processing performs the Static Cashflow Calculations and generates an aggregated result set. For more information, see Static Deterministic Process.
26. Dynamic Deterministic processing generates output based on a set of user-defined forecast rate scenarios and includes new business assumption rules in the process flow. For more information, see Dynamic Deterministic Process

3.1 Currency

Financial institutions transact business in more than one currency. Transacting business in multiple currencies demands functional capabilities for multi-currency accounting and currency rate management.

Currency module supports the definitions and maintenance of currencies. Currency definitions are fundamental to the definition of both interest rate yield curves and currency exchange rates. A key attribute of every yield curve is the currency with which it is associated, and currency exchange rates can only be established between defined currencies. A comprehensive list of ISO-defined currencies is provided; you can also define and add your user-defined currencies.

Topics

- Currency Summary Page
- Search for Currency
- Add a Currency
- View and Edit Currency
- Delete Currency

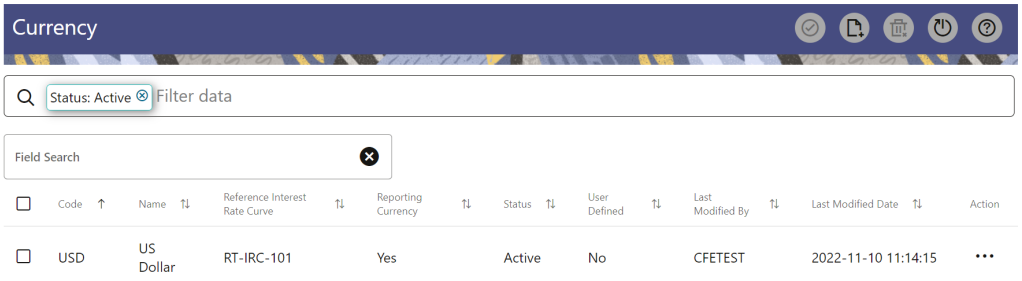
3.1.1 Currency Summary Page

This page is the gateway to all Currencies and related functionality. You can navigate to other pages relating to Currency from this point. The Currency Summary Page displays the following columns.

Table 3-1 Table: Currency – Fields and Descriptions

Column	Description
Code	Displays the 3-letter ISO code of Currency
Name	Displays the name of currency
Reference Interest Rate Curve	Displays the Reference Interest Rate Curve of Currency
Reporting Currency	Indicates whether currency is marked for use as Reporting Currency
Status	Displays the Active or Inactive status of Currency.
User Defined	Identifies any user-defined currency, that is, a currency not seeded by Cloud Service
Last Modified By	Displays the Name of the user who last modified the Currency
Last Modified Date	Displays the Date and Time when Currency was modified last
Action	Displays the list of actions that can be performed on the Currency. For more information, see Currency – Icons and Descriptions .

Figure 3-1 Currency Summary Page



The **Action** column on the **Currency Summary** page and icons on top right of the page offers several actions that allow you to perform different functions. The following actions are available for the Currency.

Table 3-2 Table: Currency– Icons and Descriptions

Fields	Description
Activate	Select one or more currency and click Activate icon to change status to active.

Table 3-2 (Cont.) Table: Currency– Icons and Descriptions

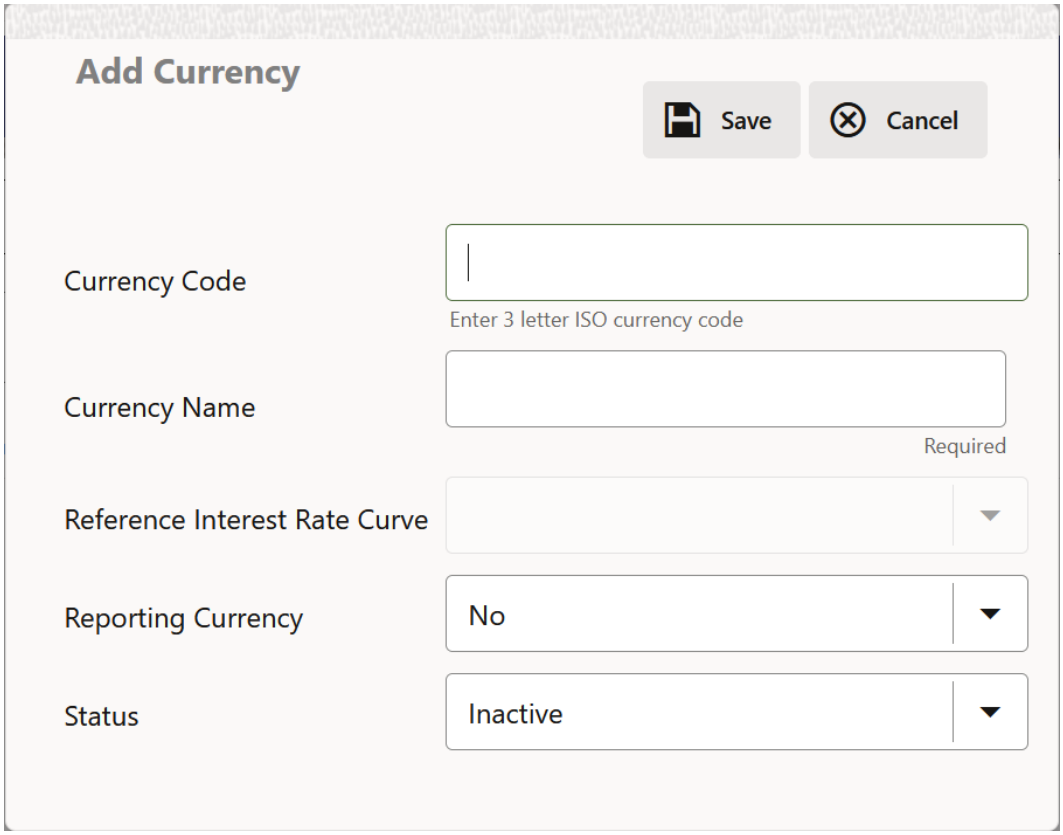
Fields	Description
Add	Click Add icon to create a new Currency.
Multiple Delete	Select one or more currencies in the table and then click the Delete icon at the top right of the summary page to delete more than one Currencies at the same time.
View/Edit	Click on the **Action** icon against the Currency Name and select View/Edit to view or edit the contents of a Currency in read/write format. Depending on user privileges the currency will open in either View or Edit mode.
Delete	Click on the **Action** icon against the Currency Name and select Delete to delete an existing Currency.

3.1.2 Add Currency

To add a Currency, follow these steps:

1. Navigate to **Reference Data** and select **Currency**.
2. Click **Add** icon on Currency summary page. The **Add Currency** page is displayed.

Figure 3-2 Add Currency Page



3. Enter the following details:

Table 3-3 Adding a Currency – Fields and Descriptions

Fields	Description
Currency Code	For seeded currencies, these are ISO Currency Codes. For user-defined currencies, these can be any pure character string (no numbers) up to a length of 3 characters.
Currency Name	For seeded currencies, these are ISO Currency Codes. For user-defined currencies, these can be any string up to a length of 40 characters.
Reference Interest Rate Curve	Reference Interest Rate Curve is the Interest Rate Curve with which currency is associated for exchange rate forecasting purposes. Define multiple yield curves each of which has the same Reference Currency, but a currency can only have one Reference Interest Rate Curve.
Reporting Currency	A reporting currency is an active currency to which balances in other currencies can be consolidated to facilitate reporting. Balances in reporting currencies can be, in turn, consolidated to the functional currency. For example, an American multinational bank might consolidate its holdings in Asian currencies to the Japanese yen (Reporting Currency) and its balances in European currencies to the Euro (Reporting Currency) after which it might consolidate these reporting currencies to the U.S. dollar (Functional Currency).
Status	The status of any currency can be either Active or Inactive. You must Activate a currency before doing the followings: a. Define that currency as a Reference Currency for an Interest Rate curve. b. Enter Exchange Rate data for a currency. c. Define Forecast Rates for that currency. d. Define any other business rule like Prepayment, Transfer Pricing for that currency.

> **Note:**
>
> - For the Oracle Financial Services Climate Change Analytics Cloud Service application, select *'Yes'* for the Reporting Currency. This supports the Exchange Rate Conversion in the Currency Rate feature.
> - The Reference Interest Rate Curve is not applicable for processing and analytical purposes in Oracle Financial Services Climate Change Analytics Cloud Service.

4. Click **Save**.

3.1.3 Search a Currency

Search for a Currency to perform any of the following tasks:

- Activate
- View
- Edit
- Delete

Prerequisites

Predefined Currencies

Procedure

To search the Currency, follow these steps:

1. Navigate to **Reference Data** and select **Currency** .
2. Enter the **Code, Name, Status, Reporting Currency**, or **User Defined** status of the Currency.
3. Click **Search**.

Only Currencies that match the search criteria are displayed.

3.1.4 View and Edit Currency

You can view existing Currency, and you can edit existing Currencies, provided you have read/write privileges.

To view and edit a Currency, follow these steps:

1. Navigate to **Currency Summary** Page.
2. Search for a Currency. For further information, see the Searching a Currency section.
3. Click on the **Action** icon against the Currency Name and select **View/Edit** to open the Currency you want to update.
4. Update the Currency details.
5. Click **Save**.

3.1.5 Delete a Currency

You can delete Currencies that are no longer required.

> **Note:**
>
> A Currency cannot be retrieved after deletion. Restrictions on deleting Currencies are:
>
> - You cannot delete Currencies if you have only Read privileges. Only users with read/write privileges and Currency owners can delete Currencies.
> - You cannot delete a Currency that has a dependency.

To delete a Currency, follow these steps:

1. Navigate to Currency Summary Page.
2. Search for a Currency and select it. For further information, see the Searching a Currency section.
3. Click on the **Action** icon against the Currency Name and select Delete.

3.2 Dimension Management

Dimension Management facilitates you to categorize data into a single object as a Member; define levels and aggregate data to form the Hierarchies, and distinguish each member by defining the required Attributes.

The roles mapped to Dimension Management are as follows:

- Dimension Advanced
- Dimension Authorization
- Dimension Read Only
- Dimension Write

3.2.1 Components of Dimension Management

You can create and manage the following Object Definitions using from Dimension Management:

- Members
- Attributes
- Hierachy

3.2.2 Object Security

Object security helps to secure data and also to decide what each user can access. You can apply ObObject security to various object definitions like Hierarchy definitions, Filters, Expressions and Migration definitions.

You can assign specific user roles and functions to user groups, to implement Object Security. To assign user roles and functions, Seeded User Groups and Seeded User Roles are mapped to the User Groups. If you are using the Seeded User Groups, the security to access objects depends on the associated User Groups.

Map your User Group to the folder in case of public or shared folder, for creating/editing/copying/removing an object in Dimension Management Module. You should also be the the owner of the folder in case of Private Folder. Additionally, the WRITE role should be mapped to your User Group.

To access the link and the Summary page, map your User Group to ACCESS Role. You can view all objects created in Public Folders - Shared Folders to which you are mapped and Private Folders for which you are the owner.

3.2.3 Members

Dimension Members refer to the individual items that constitute a dimension when data is categorized into a single object such as Product, Organization, Time, and so on. Members are available within Dimension Management Section.

3.2.3.1 Member Summary Page

The list of created member definitions are displayed in the Member Summary.

To access the Member Summary Page, complete the following procedure.

1. From the left menu, click **Common Object Maintenance.**
2. Select Dimension Management and select **Member**.
   The **Member Summary Page** containing the following details is displayed.
   - **Alphanumeric Code** - The Alphanumeric Code assigned to a Member.
   - **Numeric Code** - The Numeric Code assigned to a Member.
   - **Name** - The unique Member Name.
   - **Is Leaf** - The leaf node status of the member definition.
     - **Yes** - The member is set as a leaf node in any hierarchy and child cannot be added to this node.
     - **No** - The member is a not a leaf and can have Child Nodes.
   - **Action** - Click to View, Edit, Copy or Delete a Member Definition.

3.2.3.2 Creating Member Definitions

You can add new Member Definitions from the Member Summary page.

To create a Member Definition in the Members Page, complete the following steps.

1. To create a Member definition, click the **Add** in the Member Summary Page. The Add Member Definition Page is displayed.
2. Enter the following **Member Details** as described in the following table:
   - **Dimension** - Select the Dimension to be associated with the new Member.
   - **Alphanumeric Code** - The Alphanumeric Code to be assigned to the new Member Definition.
     You can enter up to 100 characters. We recommend using only Underscore (“_”) as a special character.
   - **Numeric Cod**e - The Numeric Code to be assigned to the new Member Definition. You can enter the value between 0 and 999,999,999 manually or click **Generate**, to auto-generate a unique code.
     If you enter the value manually, it is assigned after validation.
   - **Name** - The unique Member Definition Name.
     You can enter up to 100 characters. All characters are allowed except " & ' and " ' ".
   - **Description** - A brief description about the Member Definition.
     You can enter up to 100 characters. All characters are allowed except " & ' and " ' ".
   - **Is Leaf** - Check this option if the member is a leaf of another member. By default, it is set to **Yes**.
     - **Yes** - The member can be used as a Leaf Node in any hierarchy and Child cannot be added to this node.
     - **No** -The Member is not set as a Leaf and can have Child Nodes.

     > **Note:**
     >
     > If a Member is set as a Non-Leaf and is associated with Child Nodes, it cannot be set as a Leaf again.

   - **Enabled** - This field is set to **Yes** by default and can be edited only after the Member is created. To edit a Member, refer Editing Member Definition Details.

     > **Note:**
     >
     > You can change the option to **No** only when the particular member is not used in any hierarchy. The disabled members will not be displayed in Hierarchy Rules, or utilities which are based on Hierarchies, such as Hierarchy Filters and Hierarchical Assumption Browsers used in applications.

   - **Copy Attribute Assignment** - Attach an existing attribute to this new Member Definition.
3. Click **Copy Attribute Assignment** ().

   The **Attributes Page** associated with the selected Dimension is displayed. This field can be left blank so that the Member Attributes Panel can be filled in without considering the values already assigned.

Click **Search** to search for a specific Member based on Alphanumeric Code, Numeric Code, Name, Description, Enabled status, Is Leaf status, Attribute Name, or Attribute Value. You can also enter any of these parameters as Keywords in the Search field and click **Search**.

4. Locate the Attribute to be copied and click Move and select **Copy**, located under **Actions**.
5. Click **Save**.

3.2.3.3 Managing Member Definitions

You can View, Edit, Copy, and Delete the existing Member Definitions from the Member Summary Page.

In the Members Summary Page, highlight a specific Member Definition and click the **Action**. The following Options are displayed:

- **View** - View the **Member Details** for a specific Member Definition.
- **Edit** - Edit the **Member Details** for a specific Member Definition.
- **Copy** - Copy the Member Definition Details and create another Member Definition by changing Alphanumeric Code, Numeric Code and Name.
- **Delete** - Delete the Member Definition Details.

3.2.3.3.1 Viewing Member Definition Details

You can view the details of an individual Member Definition, from Member Summary page.

To view a Member Definition, the Read Only Role should be mapped to your User Group.

You can view the details of an individual Member Definition, using the following procedure:

1. Highlight the Member Definition and click the **Action**.
2. Click the **View** button.

   The Member Definition Page is displayed with the details Dimension, Alphanumeric Code, Numeric Code, Name, Is Leaf and Enabled status.

3.2.3.3.2 Editing Member Definition Details

To edit the existing Member Definition details, the Write Role should be mapped to your User Group.

You can edit individual Member Definition Details, using the following procedure:

1. Highlight the Member Definition and click the **Action**.
2. Click the **Edit** button.

   The Member Definition Page is displayed with the details Dimension, Alphanumeric Code, Numeric Code, Name, Is Leaf and Enabled status.

   Edit the required information and click **Save**.

3.2.3.3.3 Copying Member Definition Details

To copy the Member Definition Details, the Write Role should be mapped to your User Group.

You can copy individual Member Definition Details, to recreate another new Member Definition, using the following procedure:

1. Highlight the Member Definition and click the **Action**.
2. Click the **Copy** button.

   The **Member Definition Page** is displayed with the details Dimension, Alphanumeric Code, Numeric Code, Name, Is Leaf and Enabled status.

   Edit the unique information such as Name, Alphanumeric Code, Numeric Code and click **Save**.

3.2.3.3.4 Deleting Member Definition Details

To delete a Member Definition, the Write Role should be mapped to your User Group.

You can delete individual Member Definition Details, using the following procedure:

1. Highlight the Member Definition and click the **Action**.
2. Click the **Delete** button.

   The Member Definition is deleted after confirmation.

3.2.4 Attributes

Attributes refers to the distinguished properties or qualifiers that describes a Dimension Member. Attributes are applicable to key dimensions only.

3.2.4.1 Attribute Summary Page

The list of created attribute definitions are displayed in the Attribute Summary.

To access the Attribute Summary Page, complete the following procedure:

1. From the left menu, click **Common Object Maintenance.**
2. Select Dimension Management and select **Attribute**.

The **Attribute Summary Page** containing the following details is displayed.

The Attribute Summary Page provides the list of Member Definitions with the following details:

Field	Description
Code	The Numeric Code assigned to the Attribute Definition.
Name	The unique Attribute Definition Name.
Data Type	The Data Type associated with the Attribute. The Data Type is set to Date, Dimension, Number or String.

Field	Description
Required	• **Yes** – Attribute Value is mandatory for the Dimension Member. • **No** - The Attribute value is optional for the Dimension Member.
Seeded	• **Yes** - This Attribute is seeded by the service. • **No** - The Attribute is created by the user.
Action	Click to View, Edit, Copy or Delete an Attribute Definition.

3.2.4.1.1 Navigating Attribute Summary Page

To access records in a Summary Page, you can search, sort and navigate to multiple pages.

3.2.4.2 Creating Attribute Definition

To create a new Attribute for a dimension, complete the following steps:

1. Click the **Add** in the Attribute Summary Page.

   The **Add Attribute Definition** Page is displayed.

2. Enter the Attribute Details as described in the following table:

Field	Description
Attribute Details	
Dimension	Select the Dimension for which the new Attribute is getting created.
Numeric Code	The Numeric Code to be assigned to the new Attribute Definition. You can enter the value manually or click **Generate**, to auto-generate a unique code. If you enter the value manually, the system will verify if the value is unique and assigns it. You can enter any number between 0 and 999,999,999.
Name	The unique Attribute Definition Name. You can enter up to 100 characters. All characters are allowed except " & ' and " ' ".
Alphanumeric Field Value	The name of physical column name that will be used to store attribute value in the Report Dimension Table. You can enter up to 100 characters. We recommend using only Underscore (“_”) as a special character.
Description	A brief description about the Attribute Definition. You can enter up to 100 characters. All characters are allowed except " & ' + @ and ~.
Attribute Properties	

Field	Description
Data Type	Select the Data Type as Date, Dimension, Number, or String from the drop-down list. If Number is selected as the Data Type: Enter a Scale value >= 0. If it is left as 0, values for this attribute will be limited to Integers. If you wish to enable decimal entries for this attribute, the maximum Scale Value must be > 0 and <= the scale defined for NUMBER in the dimension's underlying attribute table. The maximum value of the NUMBER is set to 22.
Dimension	Select the Dimension to be associated with the new Attribute Definition. This field is enabled only if the Data Type is set to Dimension.
Default Value	The Default Value is set based on the selected Data Type. The Default Value is mandatory if this attribute is set as a Required Attribute. • If Dimension is set as the Data Type, select the Default Value from the drop-down list of members mapped to the selected Dimension. • If NUMBER is selected as the Data Type, enter a Numeric Value in the Default Value field, and it must be consistent with the Scale you have defined. • If DATE is selected as the Data Type: Click button to select a valid date as the Default Value from the calendar. • If STRING is selected as the Data Type: Enter the Alphanumeric Value in the Default Value field. The Maximum characters allowed in Default Value field for String Data Type is 1000.
Required Attribute	• **Yes** - This Attribute is mandatory for the associated Dimension Members. • **No** - This is an optional Attribute for the associated Dimension Members. This field is disabled in Add and Edit Modes if any members already exist for the Dimension on which this attribute is defined.
Seeded Value	• **Yes** – This is selected only when the attribute is seeded out of box by the Cloud Service. • **No** – Always select this when you are creating a new attribute.

3. Click **Save**.

3.2.4.3 Managing Attribute Definitions

You can view, edit, copy and delete the existing Attribute Definitions from the Summary Page.

In the Attribute Summary Page, highlight a specific Attribute Definition and click the **Action**. The following Options are displayed.

Field	Description
View	View the **details** for a selected Attribute.
Edit	Edit theselected Attribute.
Copy	Copy the Attribute Definition Details and create another Attribute Definition by changing the unique values like Alphanumeric Field Value, Numeric Code and Name.
Delete	Delete the selected Attribute.

3.2.4.3.1 Viewing Attribute Definition

You can view individual Attribute Definition Details at any given point. The Read Only Role should be mapped to your User Group.

To view the existing Attribute Definition details in the Attribute page:

1. Highlight the Attribute Definition and click **Action**.
2. Click **View** .

   The **Attribute Definition** Page is displayed with the details Code, Name, Data Type, Required and Seeded status.

3.2.4.3.2 Copying Attribute Definition

The Copy Attribute Definition facilitates you to quickly create a new Attribute Definition based on the existing attributes or by updating the values of the required attributes.

To copy an existing Attribute Definition, the Write Role should be mapped to your User Group.

Refer to the following steps, to copy an attribute definition.

1. Highlight the Attribute Definition and click **Action**.
2. Click **Copy**.

   The Attribute Definition Page is displayed with the details: Code, Name, Data Type, Required and Seeded status.

   Edit the unique information such as Name, Alphanumeric Field Value, Numeric Code and click **Save**.

3.2.4.3.3 Deleting Attribute Definition

You can remove the Attribute Definitions which are not required in the system by deleting from the Attributes summary.

To delete an attribute definition, he Write role should be mapped to your User Group.

1. Highlight the Attribute Definition and click the **Menu** button.
2. Click the **Delete** button.

   The Attribute Definition is deleted after confirmation.

> **Note:**
>
> You cannot delete a definition if any dependency like Attribute, Hierarchy or Filter is attached to it. Detach the dependency before deleting the definition.

3.2.5 Hierarchy

Hierarchies refer to Dimension Members that are arranged in levels, with each level representing the aggregated total of the data from the level below. One dimension type can have multiple hierarchies associated with it. Hierarchies are available within the Dimension Management Section.

A Default Hierarchy definition is required to support BI Users to perform multi dimensional analysis, in the BI reporting. The hierarchy name of a default hierarchy definitions are suffixed with the term **System Hierarchy**. You can only view the details of the default hierarchy, from the Hierarchy summary page. All orphan members under their corresponding default hierarchy, are automatically updated, when they are added/ deleted to/from the system.

3.2.5.1 Hierarchy Summary Page

The list of created Hierarchy definitions are displayed in the Hierarchy Summary.

To access the Hierarchy Summary Page, complete the following procedure.

1. From the left menu, click **Common Object Maintenance.**
2. Select Dimension Management and select **Hierarchy**.

The Hierarchy Summary Page provides the list of Member Definitions with the following details:

Field	Description
Name	The unique Hierarchy Name.
	> **Note:** > The name of a default hierarchy is always suffixed with the term **System Hierarchy**.
Description	The brief description about the Hierarchy.
Folder	The folder in which the Hierarchy is stored.
Dimension	The Dimension associated with the Hierarchy.
Tag	Tags are labels that help to simplify the data search and locate the required details.
Action	Click to View, Edit, Copy or Delete a Hierarchy Definition.

3.2.5.1.1 Navigating Hierarchy Summary Page

To access records in a Summary Page, you can search, sort and navigate to multiple pages.

3.2.5.2 Creating Hierarchy Definitions

To create a Hierarchy Definition in the Hierarchy Summary Page, complete the following steps.

1. To create a Hierarchy definition, click **Add** in the Hierarchy Summary Page.
   The **Add Hierarchy Definition** Page is displayed.

   Enter the **Hierarchy Details** as described in the following table:

Table 3-4 Field Description

Field	Description
Basic Details	
Name	The unique Hierarchy Definition Name. **Note:** You can enter up to 100 characters. All characters are allowed except " & ' and " ' ".
Description	A brief description about the Hierarchy Definition. **Note:** You can enter up to 100 characters. All characters are allowed except " & ' + @ and ~.
Hierarchy Sub Type	By default, the sub type is set to **Member based** and cannot be changed.
Folder	Select the Folder in which the Hierarchy is to be stored.
Based On	
Dimension	Select the Dimension to be associated with the new Hierarchy Definition.
Start Date	The date from which this Hierarchy will be activated. By default the Start Date is set to the current System Date.
Data Grid	

Table 3-4 (Cont.) Field Description

Field	Description
Hierarchy View	The Members associated with the selected Dimension are displayed. You can sort this list in Ascending/Descending order, expand or collapse the list to view in details and search for a specific Member. You can focus on a Member to view the Member Properties. You can add a Child or add a Sibling to an existing Member in the Data Grid.
Search Results	The search results based on the specific keyword entered to search a Member is populated.

To Add a Child to the Hierarchy:

a. Right-click in the **Hierarchy View** tab.

b. Select **Add Child** option and the **Add Member Page** are displayed.

c. Select the required Member and click **Move**, to move the Member to the Selected Members panel. To select multiple members, press CTRL and select the members.
The selected members are added to the **Selected Members** pane.

- Click **Move All** to move all Members listed in the Show Members pane, to the Selected Members pane. Click **Fetch from DB** to select all nodes/ members in the server.
- Select a member and Click **Remove** to deselect a Member. To remove multiple members, press CTRL and select the members.
- To remove all the members from the **Selected Members** pane, click **Remove all**.
- You can click **Search** button for the required member using Alphanumeric Code, Numeric Code, Name, Description, Attribute Name, or Attribute Value. Enter the search criteria and Click **Search**, in the Search Panel.
- You can also click **Search** button to toggle the display of Numeric Code left, right, or name and click button to display Alphanumeric Code left, right, or name.

d. Click **OK**. The selected Member is displayed as Child under **Data Grid** panel in the **Hierarchy View** tab.

2. **To add a Sibling to the Child in the Hierarchy Definition:**

a. Right-click on the Child and select the option **Add Sibling**.
The **Add Sibling** Page is displayed.

b. Select the required Members and **Move**, to move the Member to the Selected Members panel.
The Member is displayed in the **Selected Members** panel.

c. Click **OK**. The selected Member is added as **Sibling** below the **Parent** under Data Grid Panel in the **Hierarchy View** Tab.

3. **To add a Leaf under a Parent/Child or Sibling**:

a. Right-click the Parent or Child and select **Add Leaf**.
The Add Member Page is displayed.

b. Select the required Members and click **Move**, to move the Member to the Selected Members panel.
The Member is displayed in the **Selected Members** panel.

c. Click **OK**. The selected Member is displayed as Leaf below the Parent or Sibling under **Show Hierarchy** Panel in the Hierarchy View Tab.

4. **To define Level Properties:**

a. Right-click the Parent or Child and select **Level Properties**. The details are displayed in the Member Properties Panel.

b. Enter the valid **Name** and **Description** in the respective fields.

c. Click **OK** and the Levels defined are displayed in the drop-down in **Initial Level Display** field in **Data Grid** in **Hierarchy View** Tab.

5. **To cut and paste Child or Sibling:**

a. Right-click on any node and select **Cut**.

b. Right-click on any node and **Paste as Child** or **Paste as Sibling**.

6. **To Delete/Undelete**

a. Right-click on the node to be deleted and select **Delete Node**.
The node deleted is struck out.

b. Right-click and select **UnDelete** to cancel deletion of the node.

7. To view the Member Properties and Member Attributes of a node in the **Hierarchy View** Panel:

a. Click on a Member.
The properties such as Alphanumeric Code, Numeric Code, Name, Description, Enabled, Is Leaf, Created By, Creation Date, Last Modified By, Last Modification Date, Attribute, and Value of the selected Member are displayed in the Member Properties and Member Attributes Grids.

In the Hierarchies page you can also:

- Click **Collapse** or Expand, to collapse or expand a branch .
- Click **Focus** or **Unfocus**, to focus or unfocus a selected node except the Root Node.
- Click **Sort** to sort the list in ascending or descending order.

8. Click **Save**.
The new Hierarchy Definition is created successfully.

3.2.5.2.1 Audit Info

The Audit Info Section provides details such as Created By and Modified By Users, Creation and Modification Date, and Authorized By user Details. You can add Additional information as comments and Tags. Tags are labels that help to simplify the data search and locate the required details.

3.2.5.3 Managing Hierarchy Definitions

You can View, Edit, Copy, and Delete the existing Hierarchy Definitions from the Hierarchy Summary Page.

In the Hierarchy Summary Page, highlight a specific Hierarchy Definition and click **Action**. The following options are displayed.

Field	Description
View	View the **Hierarchy Details** for a specific Member Definition.
Edit	Edit the**Hierarchy Details** for a specific Member Definition.
Copy	Copy the Hierarchy Definition details and create another Hierarchy Definition by changing the unique values like Name, Description and so on.
Delete	Edit the Hierarchy Definition Details.

3.2.5.3.1 Viewing Hierarchy Definition Details

You can view the details of an individual Hierarchy Definition, using the following procedure:

1. Highlight the Hierarchy Definition and click **Action (three dots)** .
2. Click **View** .

   The Hierarchy Definition Page is displayed with the details Name, Description, Folder, Dimension, Start Date and Hierarchy View details.

3.2.5.3.2 Editing Hierarchy Definition Details

You can edit individual Hierarchy Definition Details at any given point.

To edit the existing Hierarchy Definition Details:

1. Highlight the Hierarchy Definition and click the **Action (three dots)**.
2. Click **Edit** .

   The Hierarchy Definition Page is displayed with the details Name, Description, Folder, Dimension, Start Date and Hierarchy View details.

   Edit the required information and click **Save**.

3.2.5.3.3 Copying Hierarchy Definition Details

You can copy individual Hierarchy Definition Details, to recreate another new Member Definition. To copy the Member Definition Details:

1. Highlight the Hierarchy Definition and click **Action**.
2. Click **Copy**.

   The Hierarchy Definition Page is displayed with the details Name, Description, Folder, Dimension, Start Date and Hierarchy View details.

Edit the unique information such as Name, Description, Folder, Dimension, Start Date and Hierarchy View details and click **Save**.

3.2.5.3.4 Deleting Hierarchy Definition Details

To delete a Hierarchy Definition:

1. Highlight the Hierarchy Definition and click **Action**.
2. Click **Delete** .

   The Hierarchy Definition is deleted after confirmation.

> **Note:**
>
> You cannot delete a definition if any dependency like Attribute, Hierarchy or Filter is attached to it. Detach the dependency before deleting the definition.

3.2.6 Viewing Data in a Summary Page

A Summary Page will contain a list of definitions associated with a specific Dimension Data, Filters, Batch or Schedules.

You can search, filter and customize the view to access the required data faster.

3.3 Setup Preferences

This section discusses the procedure to define and maintain the ALM Application, User, and Global Preference Settings.

Topics:

- Select Preference For
- Configure Global Preference
- Configure Application Preference
- Configure User Preference

3.3.1 Select Preferences For

To setup the Preferences, follow these steps:

1. Navigate to **Maintenance** and select **Preferences**.

Figure 3-3 Select Preferences For section



2. Select the user from **Show Preferences** For drop-down list. This has following options:
   - **All User:** If you have Administrator Privileges, you can define preferences for the All User Group and their individual account, which may be the same or different from the All User settings. The Administrator can also designate the All User preferences as Editable or Non-editable on a row by row basis. If the individual preference is

selected as is Editable, then End Users can update or override the Administrator's default value for their own individual account. If the Is Editable box is deselected, then End Users cannot change the default for their individual account.

- **End-User:** If you do not have Administrator Privileges, then certain preference items are pre-set by the Administrator, and you may not be allowed to change the value. All Application Preference Settings are displayed, regardless of the access privilege.

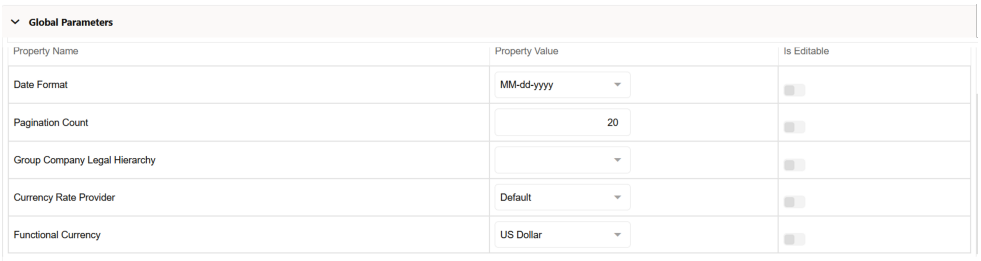
3.3.2 Global Preference

Global Preferences items are used to configure your User Interface (UI).

To update the Global Preferences, follow these steps:

1. Navigate to **Maintenance** and select **Preferences**.
2. Select **Global Parameters**.

Figure 3-4 Global Preference



3. Enter following values as described in table:

Table 3-5 Global Preference

Fields	Description
Date Format	Select one value from available list. dd-MMM-yy yyyy/MM/dd MM/dd/yyyy dd.MM.yyyy MM-dd-yyyy yyyy.MM.dd yyyy/MMM/dd dd-MMM-yyyy dd/MMM/yyyy yyyy.MMM.dd dd/MM/yyyy MM.dd.yyyy dd-MM-yyyy yyyy-MM-dd dd.MMM.yyyy yyyy-MMM-dd
Pagination Count	Pagination Records determine how many rows are displayed on summary and other screens. If you select Pagination Records to be 25 records, then any screen displaying results in a tabular format displays a maximum of 25 records.
Group Company Legal Hierarchy	This displays list of Legal Entity Hierarchies that have been configured in Dimension Management. Select one hierarchy that must be used to identify internal (part of same financial group) customers of the institutions.
Currency Rate Provider	This displays list of providers of Currency Exchange Rate. Value “Default” is seeded and selected as default. If you load exchange rates from more than one source like Reuters and Bloomberg then select one which you want the engine to use during processing. Members of Dimension Rate Data Source are displayed in the drop-down list.
Functional Currency	A common functional currency is required which can be set here. This is required to consolidate the accounts' balances or charges at multiple hierarchy levels. This is used in Ledger Reconciliation module.

4. **Is Editable status** cannot be turned on since individual users are not expected to modify these parameters.
5. Click **Save** to confirm the changes.

Reset to Default option enables the factory settings to default.

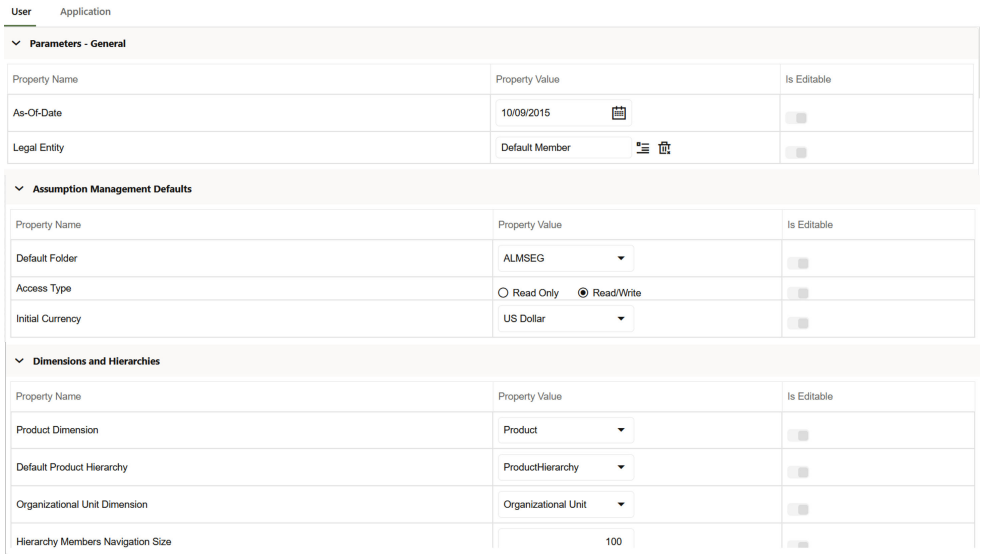
3.3.3 User Preference

User Preferences items are used to configure the User Settings.

To update the Asset Liability Management User Preferences, follow these steps:

1. Navigate to the **Maintenance** and select **Preferences**.
2. Click **User** tab.

Figure 3-5 User Preference Section



3. Enter following values in as described in table.

Table 3-6 User Preference

Fields	Description
Parameters – General	
As of Date	All processes reference this date at Runtime to determine the data to include in the process. The As-of-Date value you set in Application Preferences applies to interactive job execution (that is, when you choose to execute a rule directly from a Summary window). For batch processing, the As-of-Date is derived from the Information Date. As-of-Date is also referenced by some assumptions UI's to display relevant information therein.

Table 3-6 (Cont.) User Preference

Fields	Description
Legal Entity	Similar to As-of-Date, all processes reference Legal Entity at Runtime to determine the data to include in the process. The value of the Legal Entity you set in Application Preferences applies to interactive job execution (that is, when you choose to execute a process directly from a Summary window) and Batch Processing. NOTE: Legal Entity is designed to support implementations that require multi-entity or multi-tenant functionality. If your implementation does not require this functionality, you may utilize the Default Legal Entity in all your processes. Default implies -1 code. The default value for the Legal Entity Dimension Column in the instrument data is -1
Assumption Management Defaults	
Default Folder	This parameter allows you to define the default folder selection. The folder selection for all rule types is defaulted to this selection within the summary page search window and when creating a new rule. This selection acts as the starting value for convenience only and users can change to any other available value at their discretion.
Access Type	This parameter allows you to set the default access type. Selections include Read / Write and Read Only. This selection acts as the starting value for convenience only and users can change at their discretion.
Initial Currency	This parameter allows you to select the starting currency to be displayed within all Business Rules. This selection is made for convenience and can be changed within all business rules at the users' discretion.
Dimensions and Hierarchies	
Product Dimension	Oracle CFE requires users to declare one of the “Product Type” dimensions as the ALM Product Dimension. The model is seeded with the possible selections as follows: • Product • Common Chart of Accounts • General Ledger Account

Table 3-6 (Cont.) User Preference

Fields	Description
Default Product Hierarchy	The list of values for Default Product Hierarchy is based on the Default Product Dimension Selection. The hierarchy selected here is a default hierarchy selection in all business rules that support node-level assumptions. This selection acts as the starting value for convenience only and users can change at their discretion within each business rule.
Organizational Unit Dimension	Org Unit ID is the standard organizational dimension in the OFSAA relational data model and is intended to equate to the organizational dimension found in the General Ledger (e.g., Cost Center, Responsibility Center, Department, etc). Unless Users have defined additional Organizational dimensions, the Organizational Unit Dimension is set by default to Org Unit ID. If Users have defined additional Organizational dimensions, then they may select any Org type dimension to serve as their Organizational Unit Dimension.
Hierarchy Members Navigation Size	This parameter allows you to specify the maximum number of members that a parent node within a Hierarchy or Assumption Browser can show at a given time. When you expand a branch in a Hierarchy or Assumption Browser and the number of members in that branch exceeds the specified Navigation Size, it provides "More" and "Previous" options to enable you to navigate through the member list. Recommended values for Navigation Size are 50 to 100. Higher value settings could impact screen refresh performance. The UI allows you to enter a value up to 10000.

4. Click **Save** to confirm the changes.

3.3.4 Application Preference

Application Preferences UI allow Administrators and End Users to establish default values, manage other Core Application Parameters that affect the way Business Rules are created and the way Cash Flow Processes are run.

To update the Cash Flow Engine Application Preferences, follow these steps:

1. Navigate to **Maintenance** and select **Preferences**.
2. Click **Application tab**.
3. Enter the following values in Application tab as described in table:

Figure 3-6 Processing-ALM General section of Application Preference

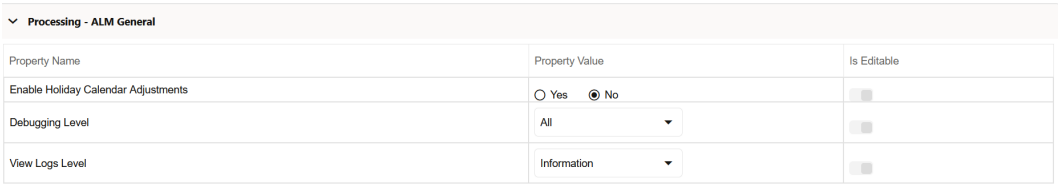


Table 3-7 Processing-ALM General section of Application Preference

Fields	Description
Enable Holiday Calendar Adjustments	Select this option to enable the Holiday Calendar Adjustment capability for the ALM Application. If this option is not selected, the Cash Flow Engine will ignore all Holiday Calendar information, including instrument level inputs and assumption rule level inputs. If Enable Holiday Calendar Adjustments is selected as Yes, then the ALM will handle Holiday Calendar assumptions based on the Account Level values first.
Debugging Level	The debugging output level determines the amount of SQL that will be written to the processing log. There are eight levels available: **a.** Trace: Designates finer-grained informational events than the DEBUG. **b.** All: All levels including custom levels. **c.** Error: Designates error events that might still allow the application to continue running. **d.** Information: Designates informational messages that highlight the progress of the application at coarse-grained level. **e.** Debug: Designates fine-grained informational events that are most useful to debug an application. **f.** Fatal: Designates very severe error events that will presumably lead the application to abort. **g.** Warning: Designates informational messages that highlight the progress of the application at coarse-grained level. **h.** Off: The highest possible rank and is intended to turn off logging. **Note:** A log request of level p in a logger with level q is enabled if p >= q. This rule is at the heart of log4j. It assumes that levels are ordered. For the standard levels, we have ALL < DEBUG < INFO < WARN < ERROR < FATAL < OFF.

Table 3-7 (Cont.) Processing-ALM General section of Application Preference

Fields	Description
View Logs Level	This shows the severity of the information telling you how important a given log message is. This shows the View level of the Log. a. Trace: Designates finer-grained informational events than the DEBUG. b. All: All levels including custom levels. c. Error: Designates error events that might still allow the application to continue running. d. Information: Designates informational messages that highlight the progress of the application at coarse-grained level. e. Debug: Designates fine-grained informational events that are most useful to debug an application. f. Fatal: Designates very severe error events that will presumably lead the application to abort. g. Warning: Designates informational messages that highlight the progress of the application at coarse-grained level. h. Off: The highest possible rank and is intended to turn off logging.

Figure 3-7 Processing-ALM Process section of Application Preference

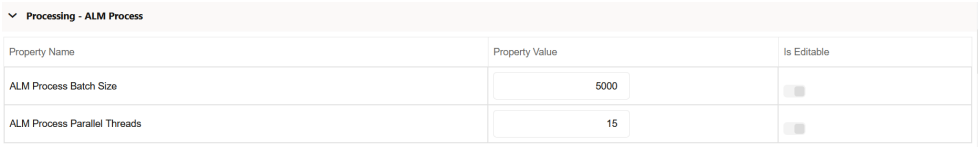


Table 3-8 Processing- ALM Process section of Application Preference

Fields	Description
ALM Process Batch Size	Number of Account or Instruments that must be processed in a single batch. Default Value of 5000 is seeded by the service, and you can modify it as needed

Table 3-8 (Cont.) Processing- ALM Process section of Application Preference

Fields	Description
ALM Process Parallel Threads	Number of threads created by the executor for each batch. This is a performance tuning parameter for ALM Cloud Service. This defines how much memory can be used by the different components of the process such as the stack, data and text segments. Default Value of 15 is seeded by the service, and you can modify it as needed

Figure 3-8 Processing-Cash Flow General section of Application Preference

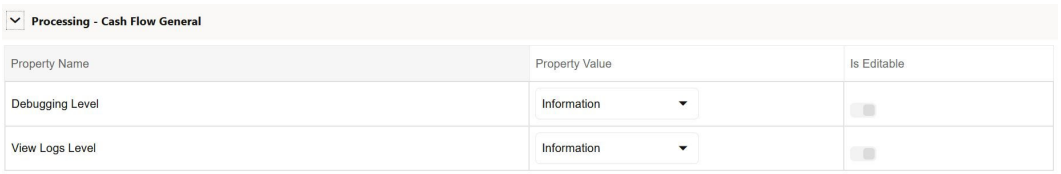


Table 3-9 Processing-Cash Flow General section of Application Preference

Fields	Description
Debugging Level	The debugging output level determines the amount of SQL that will be written to the processing log. There are eight levels available: a. Trace: Designates finer-grained informational events than the DEBUG. b. All: All levels including custom levels. c. Error: Designates error events that might still allow the application to continue running. d. Information: Designates informational messages that highlight the progress of the application at coarse-grained level. e. Debug: Designates fine-grained informational events that are most useful to debug an application. f. Fatal: Designates very severe error events that will presumably lead the application to abort. g. Warning: Designates informational messages that highlight the progress of the application at coarse-grained level. h. Off: The highest possible rank and is intended to turn off logging. **Note:** A log request of level p in a logger with level q is enabled if p >= q. This rule is at the heart of log4j. It assumes that levels are ordered. For the standard levels, we have ALL < DEBUG < INFO < WARN < ERROR < FATAL < OFF.
View Logs Level	This shows the severity of the information telling you how important a given log message is. This shows the View level of the Log. There are three levels available: a. Information: Designates informational messages that highlight the progress of the application at coarse-grained level. b. Debug: Designates fine-grained informational events that are most useful to debug an application. c. Off: The highest possible rank and is intended to turn off logging.

Figure 3-9 Processing-Cash Flow Process section of Application Preference

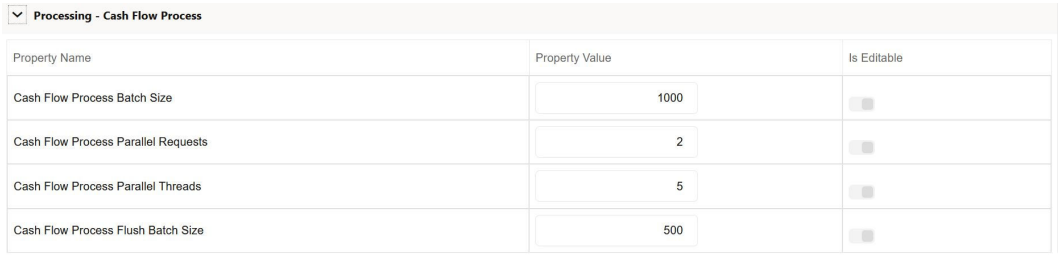


Table 3-10 Processing-Cash Flow Process section of Application Preference

Fields	Description
Cash Flow Process Batch Size	Number of Account or Instruments that must be processed in a single batch. This is used by Cash Flow Engine for performance tuning. Default Value of 1000 is seeded by the service, and you can modify it as needed
Cash Flow Process Parallel Requests	Number of Parallel batches executed by each executor. This is a performance tuning parameter for Cash Flow Engine Cloud Service. Default Value of 2 is seeded by the service, and you can modify it as needed
Cash Flow Process Parallel Threads	Number of threads created by the executor for each batch. This is a performance tuning parameter for Cash Flow Engine Cloud Service. This defines how much memory can be used by the different components of the process such as the stack, data and text segments. Default Value of 5 is seeded by the service, and you can modify it as needed
Cash Flow Process Flush Batch Size	Number of records that gets saved or updated in a batch during Cash Flow Process execution. This is used by Cash Flow Engine for performance tuning. Default Value of 500 is seeded by the service, and you can modify it as needed

Figure 3-10 Processing-Cash Flow Edits section of Application Preference



Table 3-11 Processing-Cash Flow Edits section of Application Preference

Fields	Description
Cash Flow Edits Batch Size	Number of Account or Instruments that must be processed in a single batch. This is used by Cash Flow Edits Engine for performance tuning. Default Value of 1000 is seeded by the service, and you can modify it as needed
Cash Flow Edits Flush Batch Size	Number of records that gets saved or updated in a batch during Cash Flow Process execution. This is used by Cash Flow Engine for performance tuning. Default Value of 500 is seeded by the service, and you can modify it as needed

4. **Turn-on** the Is Editable status.
5. Click **Save** to confirm the changes.

3.4 Currency Rates

Currency Rates Module uses the currencies defined and activated in the Currency Module to support the creation and maintenance of Historical Exchange Rates. In the Currency Rate Window, you can manage historical Exchange Rates between currencies.

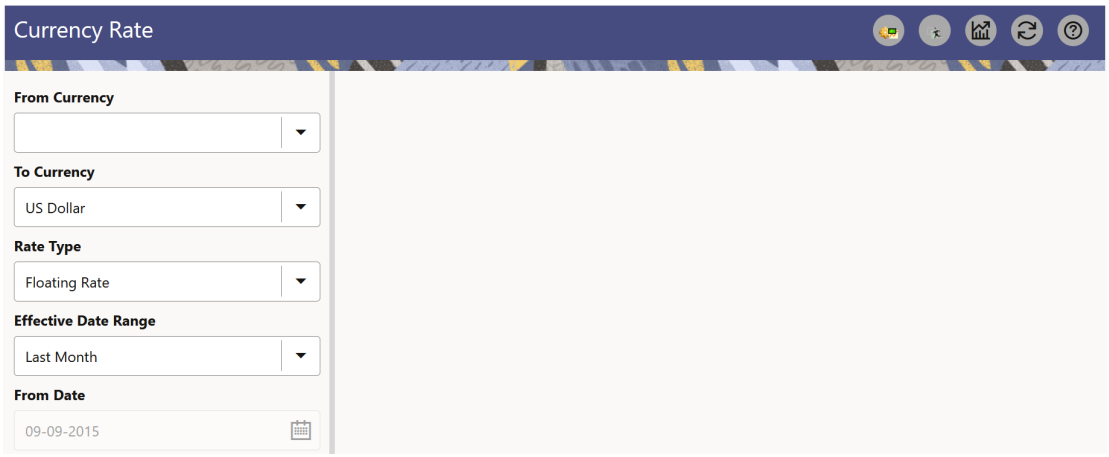
To Currency defaults to the Initial Currency selection from the Assumption Management defaults in the Active Preferences Window. You can select another To Currency from the drop-down list that displays all Active Currencies.

3.4.1 Adding Exchange Rate Data

Based on the Rate Types, you can add the following Exchange Rate Data:

- **Floating Rates**
  Floating Exchange Rates, such as those between the US Dollar (USD), the Pound Sterling (GBP), the Japanese Yen (JPY), and the Euro (EUR), are market-driven and can change from day-to-day, hour-to-hour, or minute-to-minute.
- **Fixed Rates**
  Some countries, especially smaller countries or countries that have experienced significant inflation in the recent past, can wish to “peg” their currency to a larger, more stable currency such as the US Dollar, Japanese Yen, or Euro.

Figure 3-11 Currency Rates



Adding Floating Rate Data

To add the Exchange Rate Data, follow these steps:

1. Select a **From Currency**.
2. Select a **To Currency**.
3. Select **Rate Type** as **Floating Rate** (default selection is Floating Rate).
4. The RHS pane is displayed as Floating Currency Rates.
5. Select **Effective Date Range** to enter the values in From Date and To Date fields.
6. Select the **Rate Provider**.
7. Currency Rate Pane initially displays a single blank row followed by the most recent month's Exchange Rate data (if any such Exchange Rate Data already exists). To enter a single new Exchange Rate Data Point, enter data into the blank row.

Table 3-12 Floating Currency Rates

Fields	Description
Effective Date	Directly enter a date or select the Calendar icon to choose an effective date for your new Exchange Rate data point. Rate Management Stores the Historical Exchange Rate Data. You cannot enter Exchange Rate data for dates greater than the current date.
Exchange Rate	This must be entered as 1 unit of From Currency are converted to n unit of To Currency.
Status	Status is a read-only display that is updated after the Currency Rates Validation has been run.
Data Origin	The Data Origin is displayed read-only and indicates whether the rates were input through the UI or the Data Loader.

8. Click **Save**.

9. Click **Add** to add additional blank rows to enter the additional Effective Dates and Exchange Rates. After adding the multiple new Exchange Rates, click **Save**.

Adding Fixed Rate Data

To add the Exchange Rate Data, follow these steps:

1. Select a **From Currency**.
2. Select a **To Currency**.
3. Select **Rate Type** as **Fixed Rate**.
4. After selecting a **To Currency** value, the RHS pane is displayed as Fixed Currency Rates.
5. Select **Effective Date Range** to enter the values in From Date and To Date fields.
6. Select the **Rate Provider**.
7. Currency Rate Pane initially displays a single blank row followed by the most recent month's Exchange Rate Data (if any such Exchange Rate Data already exists). To enter a single new Exchange Rate Data Point, enter data into the blank row.

Table 3-13 Fixed Currency Rates

Fields	Description
Effective From Date	Directly enter a date or select the Calendar icon to choose a starting effective date for your new Exchange Rate Data Point.
Effective To Date	Directly enter a date or select the Calendar icon to choose a ending effective date for your new Exchange Rate Data Point.
Currency Exchange Rate	This must be entered as 1 unit of From Currency are converted to n unit of To Currency.
Status	Status is a read-only display that is updated after the Currency Rates Validation has been run.
Data Origin	The Data Origin is displayed read-only and indicates whether the rates were input through the UI or the Data Loader.

8. Click **Save**.
9. Click **Add** to add additional blank rows to enter the additional Effective Start and End Dates and Exchange Rates. After adding the multiple new Exchange Rates, click **Save**.

3.4.2 Viewing Exchange Rate Data

By default, both the Floating Currency Rates Pane and the Fixed Currency Rates Pane display the most recent month of historical Exchange Rate Data. You can control the amount of data displayed by selecting a different value from the **Effective Date Range** drop-down list in the **Currency Selection** Window.

From Date and **To Date** can also be modified to view relevant Currency Rates.

3.4.3 Editing Exchange Rate Data

Select the check box on the left-hand side of any row to enable the **Edit** icon. After clicking Edit, the row becomes active to edit the **Effective Date** and (or) the **Exchange Rate**. Click **Save** to save the changes.

3.4.4 Deleting Exchange Rate Data

Select one or more check boxes on the left-hand side of any row to enable the **Delete** icon. After clicking Delete, a confirmation message is displayed. Click **Ok**.

3.4.5 Currency Exchange Rate Validation

Exchange Rate Validation has the following features:

- Movement of historical Exchange Rates to the Currency Direct Access Table.
- Calculation of inverse Exchange Rates for Reporting Currencies.
- Calculation of triangulated Exchange Rates where possible.

Features of Exchange Rate Validation

The goal of Exchange Rate Validation is to ensure that Exchange Rates from all active currencies to all reporting currencies are available for processing. Some of these rates can come from the validated direct input, others are calculated based on relationships with other rates. To support triangulation, all fixed Exchange Rates are available for all currencies that make up an exchange that needs to be triangulated. Also, a direct Exchange Rate between each Child Currency and each reporting currency is calculated and supplied to support quick access to Exchange Rates. If a Child currency is a Reporting Currency, then Exchange Rates are calculated for all currencies having an exchange relationship with the Parent Currency.

Validating Exchange Rate Relationships

You must run the Exchange Rate Validation Process after adding or modifying Exchange Rate Data. Run the process immediately or schedule one or more to be run in the future.

Each Exchange Rate has one of the following statuses:

Table 3-14 Details of Exchange Rates

Fields	Description
Not Yet Validated	The Exchange Rate has been input or loaded but not yet validated.
Valid	The Exchange Rate has been validated.
Invalid	The Exchange Rate has violated one or more acceptance rules.

Only Exchange Rates in valid status are available for processing and they are not subject to future validation unless you edit them. The Rate Validation Status is displayed in the Currency Rates Window of the Rate Management.

Exchange Rate Validation Criteria

In the Rate Validation Process, all Exchange Rate relationships in the database are examined for compliance with the following criteria. Error messages and warnings are displayed if one or more criteria are not met.

- If a currency is defined as a Child in a fixed exchange relationship then it must not be in any floating (standard) Exchange Rate Relationship at the same time. Consequently, all floating Exchange Rates to or from the Child Currency must be defined through the Parent Currency. If this criterion is not met then the following message is displayed: Invalid fixed relationship—Child Currency exists in a standard Exchange Rate within the same time period.
- A Child Currency within a fixed relationship must not be a Child Currency in any other Fixed Relationship during the same time period. If this criterion is not met then the following message is displayed: Invalid fixed relationship—Child Currency already exists in a fixed relationship for the same time period.
- A Circular Relationship must not exist. In other words, a Child Currency cannot link back to its Parent in any other FixedRate Relationship within the same time period. If it does, then the following message is displayed: Invalid fixed relationship creates a circular relationship with other fixed Exchange Rates.
- Regarding new Floating (standard) Exchange Rates, from and To currencies must not exist as Child Currencies within any Fixed Exchange Rate Relationships. If this criterion is not met then the following message is displayed: From/To/Both currency(ies) in the new Exchange Rate already exist in a fixed relationship for the same time period.
- If any Exchange Rate is equal to 0, then a warning message is displayed. Generally speaking, 0 is a valid value. You can use it, for example, to designate an Exchange Rate with a currency of a country that no longer exists.

If two Exchange Rate Relationships fail to meet these criteria then both of them will be labeled Invalid. (Exception, if one of the relationships is already in Valid status, then the other one will be labeled Invalid.) For example, if a currency is defined as a Child in a Fixed Rate Relationship and is also defined as being in a Floating Relationship at the same time, then both Fixed and Floating Rates for that currency will be labeled Invalid.

If there are both direct and Inverse Floating Exchange Rates defined for any two currencies (in other words, one currency is both a To and a From Currency in relation to the other), then both relationships will be marked valid.

Running an Exchange Rate Validation

You can run a validation immediately or schedule one or more for later. The Validation Status is displayed in the **Currency Rates** Window.

You can execute the Exchange Rate validation using the **Currency Rates Validation** option.

To execute the Exchange Rate Validation, follow these steps:

1. Click **Currency Rates** Validation.
2. To execute Exchange Rate validation from the **Currency Rates** Window, the following two options are available:
    - **Specify Dates:** After selecting this option, a Select Dates Pane is displayed to enter or verify the Start Date and End parameters. These dates will be passed to the batch for execution.

- **Start Date:** This defaults to the date of last rate validation.
- **End Date:** This defaults to the current date.
- **Validate For All Dates:** Select this option to validate all the rates irrespective of dates.

> **Note:**
>
> This option will replace all of the validated Exchange Rate History and can be a time-consuming process depending on the amount of history available to be processed.

3.4.6 Download

The Download functionality is used to download the Historical Exchange Rates.

3.4.7 Importing Currency Rates

To import the Currency Rate, follow these steps:

1. Navigate to the **Currency Rate** page.
2. Select **Upload Data**.
3. Select the type of Rate as **Floating** or **Fixed**.
4. Click the **Drag and Drop** option to select the file.

> **Note:**
>
> The excel file, you are uploading should be in a specific format. You can download the template using the Download Template option. The Templates for Fixed and Floating Rate Types.
> Currency rates UI bulk upload supports only **YYYY-MM-DD** date format

5. Click **Upload**.

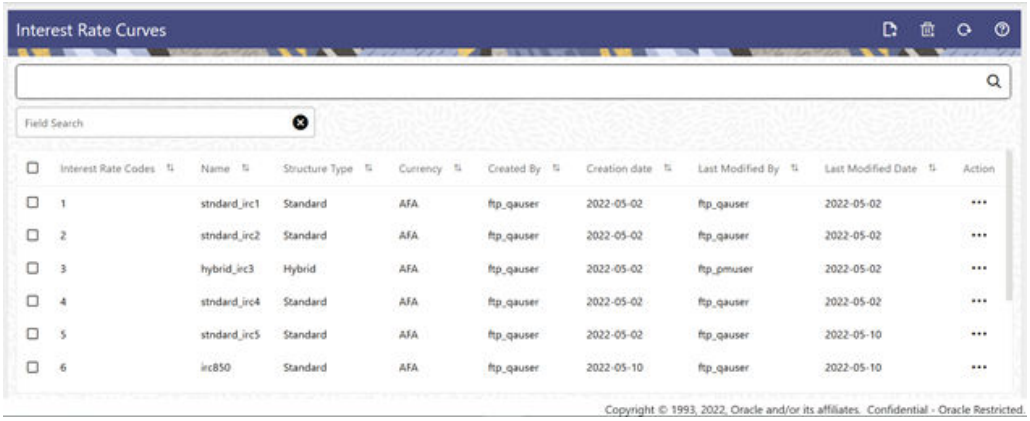
3.5 Interest Rate Curve

The quality and availability of Interest Rate information vary throughout the world. In many markets, gathering comprehensive rate information is a challenge because of insufficient security types, inconsistent quoting conventions, and lack of liquidity. The Interest Rate Curve in Cloud Service allows you to define and manage complex Yield Curve definitions using multiple Rate Formats and other Rate Attributes to give you data storage capabilities appropriate to your market. The Interest Rate Curve supports the creation and maintenance of Historical Rate Data for each Yield Curve you define.

Historical Interest Rate Data is utilized in the Cloud Service to generate the Transfer Rates, add-On Rates, Discount rates for market value calculations, Option Costs, and Forecasted Interest Rate Scenarios.

Navigate to **Reference Data**, and then select **Interest Rates** to display the **Interest Rate Curves Summary** Page.

Figure 3-12 Interest Rate Curves Summary Page



3.5.1 Searching for Interest Rate Curve

There are two Search panes provided to search for Interest Rate Curves, which are explained.

To search the Interest Rate, perform the following steps:

1. Click the **Search** icon on the Search Pane to collapse (display) the **Search Criteria** Window.
2. Enter the Search Criteria by entering one or more of the **Interest Rate Code**, **Name**, **Currency**, **Rate Format**, and **Structure Type**.
3. Click **Reset** to remove the filter criteria on the Search Window and refresh the window.
4. Click **Search** after entering the search criteria.
   The search results are displayed in a Table containing all the Interest Rate Curves that meet the Search Criteria with the following details:
   - **Interest Rate Code**: Displays the Interest Rate Curve's Code. The code is a unique number in the range of 1 to 9999999. Hover on a row in the pane to display the Interest Rate Curve's detailed description.
   - **Name**: Displays the Interest Rate Curve's short name.
   - **Structure Type**: Displays the Structure Type (Standard, Hybrid) of the Interest Rate Curve.
   - **Currency**: Displays the Currency (Reference Currency) for which Interest rate curve is defined.
   - **Created By**: Displays the Name of the user who created the Interest Rate Curve.
   - **Creation Date**: Displays the Date and Time when Interest Rate Curve was created.
   - **Last Modified By**: Displays the Name of the user who last modified the Interest Rate Curve.

- **Last Modified Date**: Displays the Date and Time when Interest Rate Curve was last modified.

5. Click on the **Action** icon against the Interest Rate Code to do further actions View, Edit, Delete, and **Save As** on the selected Interest Rate Code.

The **Interest Rate Curve Summary** Page offers several icons that allow you to perform different functions when an Interest Rate Curve is selected.

The other method to search an Interest Rate Code or Codes is using the **Field Search** Pane. You can enter any one of the details of an Interest Rate curve, displayed on summary UI and press the **Enter** key to display list of filtered Interest Rate Curves.

The top bar displays the Title of the screen and the following icons:

- **Add**: This allows you to add a new Interest Rate Code.
- **Delete**: This allows you select one or multiple Interest Rate Codes from the Summary Table and delete them.
- **Refresh**: Clears the search criteria definitions and refreshes the Screen.
- **Help**: Opens the help page of the Interest Rate Curves Screen.

3.5.2 Creating an Interest Rate Curve

To create an Interest Rate Curve, perform the following steps:

1. Click **Add** from the **Interest Rate Curve Summary** Page to display the **Interest Rate Curve** Page.
2. Enter the following information in the **Interest Rate Curve Details** Window.
   - **Interest Rate Code**: When constructing a new Yield Curve, you must specify an Interest Rate Code between 1 and 9999999. Interest Rate Codes are used internally to uniquely identify Yield Curves. When working with Cloud service, you reference Yield Curves by Name, not by Interest Rate Codes. Interest Rate Codes are embedded within your instrument data (for example, the INTEREST_RATE_CD columns within the Instrument Data are populated with Interest Rate Codes). After you have saved a Yield Curve, you cannot modify its Interest Rate Code.
   - **Name**: Provide a unique Name for the Interest Rate Curve.
   - **Description**: You can enter a description for the Interest Rate Curve. You can modify this description at any time using the Edit action.
   - **Display for All Currencies**: This flag allows you to designate certain Interest Rate Curves to make them available for assumption mapping to any currency. Assumption Rules filter the list of Interest Rate Codes based on the currency when defining assumptions for a specific Product/Currency combination. When this option is enabled, the Interest Rate Curve appears in assumption rules for all currencies.
   - **Reference Currency**: Select a Reference Currency for your Interest Rate Curve. You can change the Reference Currency for previously saved Interest Rate Curves though such changes are unlikely. An Interest Rate Curve's Reference Currency is the currency for which your market rates are valid. For example, the Reference Currency for a Prime Rate Yield Curve would be US Dollars. The Reference Currencies drop-down list displays only Active currencies. For more information on Active and Inactive currencies, see the Currency Documentation.
   - **Date Based Term Points**: This toggle switch is applicable only for Standard Structure Type. If you select Structure Type as Hybrid, the toggle switch is disabled.

When you select the Date Based Term Points, and add a Term Point, the Historical Rates Tab allows you to define a Custom Date and Rate for each Term Point. By default, the Date is inserted based on the Term that you define. You can change the Date to a custom Date and define the Rate.

- **Risk-Free**: (Optional) This flag is for tagging the Interest Rate Curve as risk-free. That is Edit Table in new and Edit Modes. It is available for Non-Hybrid Curves and Hybrid Curves.
- **Structure Type**: This attribute is required for each Yield Curve. Structure Type supports both Standard and Hybrid Yield Curve Definitions. Hybrid Yield Curves are re-expressions of one or more pre-existing Standard Yield Curves. For more information, see Hybrid Term Structure Tab under Interest Rate Code Tabs. After you have saved the Yield Curve, you cannot change the selected Structure Type.

3.5.2.1 Interest Rate Curve Tabs

Interest Rate Curve Tabs are used to define the Yield Curve and to add, edit, or delete Historical Interest Rate Data. The Interest Rate Curve Tabs are:

- Terms & Attributes
- Historical Rates
- Hybrid Term Structure

For new Yield Curves, you must begin with the Terms & Attributes Tab. After you have selected the term structure and attributes for a Yield Curve, you cannot edit them. After assigning the attributes, navigate to the Terms Tab to define a term structure for your Yield Curve, for example, an overnight rate, a one-month rate, a three-month rate, and so on. Click Apply after defining the term structure and attributes to the Interest Rate Curve.

> **Note:**
>
> You must specify an Interest Rate Code and Name in the Interest Rate Curve Details Window before navigating to the Terms & Attributes Tab.

The first time you navigate to the Terms & Attributes Tab, an initial 1-month term point is provided, but even if this is the only term point you want for the curve, you must click **Apply** to finish term structure specification. In future revisions to the Curve's Definition, navigate directly to the **Historical Rates** Tab, but if you modify the term structure, you must always click **Apply** on the **Terms & Attributes** Tab before navigating to the **Historical Rates** Tab.

The **Historical Rates** Tab is used to input historical interest rate data. This Tab is used for maintaining the Interest Rates Database. To navigate to the Historical Rates Tab, either click **Apply** on the **Terms & Attributes** Tab or select the **Historical Rates** Tab if you have already defined your term structure.

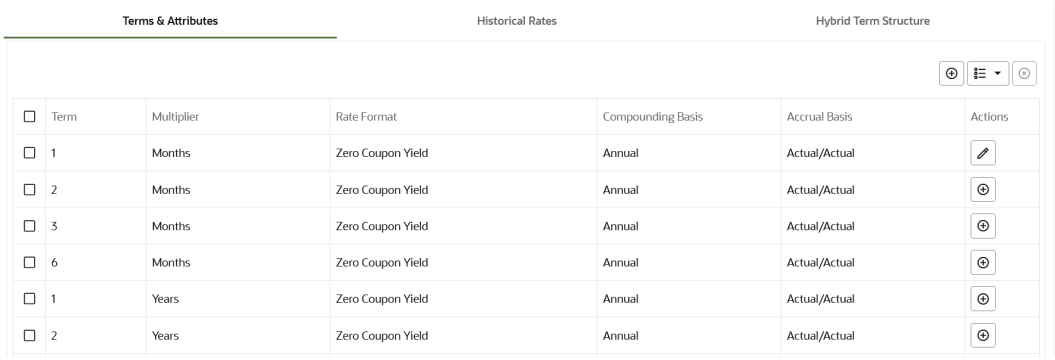
> **Note:**
>
> You must specify the following before navigating to the **Historical Rates** Tab:
>
> - An Interest Rate Code, Name, and Reference Currency in the Interest Rate Code Details Window.
> - A term structure in the **Terms & Attributes** Tab.

3.5.2.1.1 Terms & Attributes Tab

The Terms & Attributes Tab displays the following fields:

- **Adding New Term Points**: Click **Add** to add a new row. (New term points by entering a Term value and selecting a Multiplier (such as 7 days, 2 months, 5 years, and so on). Rate Format, Compounding Basis, and Accrual Basis can be selected for the term point. Zero Coupon Yield, Annual, Actual/Actual are the pre-selected values in UI which you can modify.
  One Yield Curve can have two combinations of attributes. For example, first 3 term points have Zero Coupon Yield, Annual, Actual/Actual attributes and remaining term points are Yield to Maturity, Annual and 30/360.

Figure 3-13 Terms and Attributes Tab



  Click “+” at the term point where you want to modify attributes. Rate Format, Compounding Basis, and Accrual Basis fields are enabled for modification.

- **Rate Format**: You should select either the Zero Coupon Yield or Yield to Maturity Rate Format. Rates entered in the Historical Rates Tab are always entered in the nominal form, such as 5.125% or 6.875%, not as discount factors.
- **Compounding Basis**: Select a Compounding Basis for the term point:
  - Daily
  - Monthly
  - Quarterly
  - Semiannual
  - Annual

  - Simple
  - Continuous
  - At Maturity
- **Accrual Basis**: Select an Accrual Basis for the Yield Curve.
  - 30/360
  - Actual/360
  - Actual/Actual
  - 30/365
  - 30/Actual
  - Actual/365
  - Business/252
- **Deleting Existing Term Points**: To delete an existing term, select the term point (or terms), and click **Delete**.

You can also click **Add Multiple Rows** to select the number of multiple rows that you want to add.

You can construct the Yield Curve's Term Structure. You can specify as many Yield Curve Terms from the 1 day to 100 years range. However, the UI allows only two combinations of Rate Format, Compounding Basis, and Accrual Basis per one Interest Rate Curve Definition.

The Interest Rate Curve Definition Module automatically selects the combination of Rate Format, Compounding Basis, and Accrual Basis when a new Term Point is greater than the already defined Term Points. For example, if you define two Term Points with 15 Days, one Month Multipliers, and another Term Point with 2 Years Multiplier. When you define a new Term Point with 45 Days Multiplier, the Interest Rate Curve Definition Module automatically selects the combination of Rate Format, Compounding Basis, and Accrual Basis that is selected for the first two Term Points. Similarly, if you define a Term Point, which is greater than the 2 Years Multiplier, then the module selects the combination of Rate Format, Compounding Basis, and Accrual Basis that is selected for the 2 Years Term Point.

3.5.2.1.2 Historical Rates Tab

Use the Historical Rates Tab to define, modify, or view Interest Rate Data. Enter data in simple percentages (such as 5.125, 4.875, and so on).

The **Rate Data Source** Column shows from where the rates are taken from, they are either entered through the User Interface, loaded through the Data Loader, or generated using the Generate Rates of Hybrid IRC.

You can perform the following tasks:

- Add Historical Rates
- Excel Import or Export
- Deletion of Historical Rates

3.5.2.1.2.1 Add Historical Rates

By default, the **Historical Rates** Tab displays Interest Rate Data for the past month (for example, for the 30 days leading up to the current date). Click the **Effective Date Range** drop-down list to expand your view to the last 3 months, 6 months, one year, 3 years, 6 years, or all rate data.

3.5.2.1.2.2 Deletion of Historical Rates

To delete Historical Rates entered, select one or more rows and then click **Delete**.

3.5.2.1.2.3 Excel Import or Export

To aid in data entry, use the Excel Import or Export functionality to add or edit rate data to Historical Rates. This is an optional step.

Excel Export:

To export the data, perform the following steps:

1. Click **Export** to export data for the chosen selected effective date range. Within the same block, select Export to Excel, which launches the Excel application and displays the Data Window including headers.

Excel Import:

The excel file exported above can be used as a template to import the Historical Rates.

> **Note:**
>
> Ensure that the date format is yyyy-MM-dd in the excel file. For example, 2022-06-13.

1. On the Interest Rates toolbar, click the **Import** icon. Select the file containing the Historical Rates.
2. Data from the file is displayed on the UI. If appending data that pre-existed for the same effective date, the import will overwrite existing data.
3. Add or edit data if required.
4. Click **Apply** to save.

3.5.2.1.3 Hybrid Term Structure Tab

Hybrid Term Structures allows you to specify the following types of Hybrid Yield Curves:

- Merge
- Spread
- Moving Average
- Custom Weighted Average

Hybrid Yield Curves are built up from either one or more Standard Yield Curves. When you add, modify, or delete any historical rate data from a Standard Yield Curve, the data associated with any related Hybrid Yield Curve must be updated. After defining, the Hybrid

Yield Curves can be used like any other Interest Rate Curve in the system. You can reference these curves within the Cloud Service Business Rules that allow the selection of an Interest Rate Code.

Hybrid Curve Type Spread: A Spread Hybrid Yield Curve is defined as the difference between two standard yield curves. The Spread type of hybrid yield curve is useful in establishing liquidity risk or basis risk yield curves.

- **Merge**: Merge hybrid yield curves represent a blending of two or more underlying yield curves. In constructing a Merge type of Hybrid Yield Curve, specify the percentage weighting applied to each of the underlying Standard Hybrid Yield Curves.
- **Spread**: A Spread hybrid yield curve is defined as the difference between two standard yield curves. The Spread type of Hybrid Yield Curve is useful in establishing liquidity risk or basis Risk Yield Curves.
- **Moving Average**: Moving average Hybrid Yield Curves represent moving average data of a single underlying Standard Yield Curve. These curves are used in Funds Transfer Pricing.
- **Custom Weighted Average**: Custom Weighted Average Rate is the sum of weighted rates as per the defined Custom Weights for the Historical Rates.

3.5.2.1.4 Define a Hybrid Curve

Defining a Hybrid Curve supports the following different definitions based on the Hybrid Curve Type:

- Hybrid Curve Type as Merge
- Hybrid Curve Type as Spread
- Hybrid Curve Type as Moving Average
- Hybrid Curve Type as Custom Weighted Average

3.5.2.1.4.1 Defining a Hybrid Curve with Hybrid Curve Type as Merge

To define a Hybrid Curve, perform the following steps:

1. Select the **Structure Type** as **Hybrid**, and then select the **Hybrid Curve Type** as **Merge**.
2. Select the **Interest Rate Curves** for the hybrid type and click **Apply**. You must select at least two Interest Rate Curve Definitions.

   The screen displays the Hybrid Term Structure Weights for the selected Interest Rate Curves and the Merge type Hybrid Curve.
3. By default, all the Term Points are selected and displayed. You can uncheck one or more Term Points.
4. You can click on the icon next to the Selected Term Structure to see the Term Points for the Interest Rate Curve. A box displays the Term and Multiplier for the select Interest Rate Curve.
5. Enter the Weights for the selected Terms.
6. Click **Apply** to save the Weights in the grid.

3.5.2.1.4.2 Defining a Hybrid Curve with Hybrid Curve Type as Spread

To define a Hybrid Curve, perform the following steps:

1. Select the **Structure Type** as **Hybrid**, and then select the **Hybrid Curve Type** as **Spread**.
2. Select the **Interest Rate Curves** for the hybrid type and click **Apply**. Only two Interest Rate Curves are allowed for selection.
3. Click the **Swap** icon to re-order the Interest Rate Curves.

   The screen displays the Hybrid Term Structure Weights for the selected Interest Rate Curves and the Merge type Hybrid Curve.
4. By default, all the Term Points are selected and displayed. You can uncheck one or more Term Points.
5. Click **Apply** to save the selected Terms.

3.5.2.1.4.3 Defining a Hybrid Curve with Hybrid Curve Type as Moving Average

To define a hybrid curve, perform the following steps:

1. Select the **Structure Type** as **Hybrid**, and then select the **Hybrid Curve Type** as **Moving Average**.
2. Select the **Interest Rate Curves** for the hybrid type and click **Apply**. Only one Interest Rate Curve Definition is allowed for selection.

   The screen displays the Hybrid Term Structure Weights for the selected Interest Rate Curves and the Merge type Hybrid Curve.
3. By default, all the Term Points are selected and displayed. You can uncheck one or more Term Points.
4. Enter the Terms and Multipliers for each of the selected Terms.

   OR Optionally, you can select the **Moving Average Term** toggle switch to define the Terms and Multipliers for the selected terms at once.
5. Click **Apply** to save the Terms in the grid.

3.5.2.1.4.4 Defining a Hybrid Curve with Hybrid Curve Type as Custom Weighted Average

To define a Hybrid Curve, perform the following steps:

1. Select the **Structure Type** as **Hybrid**, and then select the **Hybrid Curve Type** as **Custom Weighted Average**.
2. Select the **Interest Rate Curves** for the Hybrid Type and click **Apply**. Only one Interest Rate Curve Definition is allowed for selection.

   The screen displays the Hybrid Term Structure Weights for the selected Interest Rate Curves and the Merge type Hybrid Curve.
3. By default, all the Term Points are selected and displayed. You can uncheck one or more Term Points.
4. Enter the Terms and Multipliers for each of the selected Terms.

   OR Optionally, you can select the **Moving Average Term** toggle switch to define the Terms and Multipliers for the selected terms at once.

5. Enter the Weights for the each term and respective Historical Effective Dates. By default, all the Weights are zero. You can change the values as per your requirement.
6. Click **Apply** to save the Terms in the grid.

3.5.2.1.5 Generate Historical Rates

After a Hybrid Curve is defined, generate the Historical Rates as far back as the Rate Source Curves allow. The Generate Frequency determines the frequency of the historical rates populated with the Generate function. If you select the Generate Frequency as monthly, it generates month-end values only. If you select daily, it generates the maximum number of Historical Values. By default, the Interpolation is selected as Linear and you cannot change it.

To generate the rates, perform the following steps:

1. Select the **Generate Frequency** (Daily, Weekly, Bi-Weekly, or Monthly) and enter the **Specific Date Range** (From Date and To Date). For Custom Weighted Average Hybrid Curve Type, you need to select only the From Date.
2. Click **Generate**. The rates will be populated and you will be directed to the Historical Rates Tab to view the results.

3.6 Economic Indicators

An Economic Indicator is any economic statistic such as the Consumer Price Index (CPI), growth rate of the Gross Domestic Product (GDP), unemployment rate, Purchasing Managers Index, indices of consumer confidence, and so on. Such macroeconomic statistics tell us how well the economy has behaved in the past. Some economic indicators are referred to as lagging indicators while others are classified as leading indicators. Leading indicators can provide insights into the future direction of the economy.

Economic Indicators Module allows you to define and store such historical indicators. It provides baseline from which forecasts of future values can be generated that can affect cash flow calculation for Inflation Indexed Instruments, new business or other modeling assumptions.

To view the Economic Indicators, navigate to Maintenance and then select Economic Indicators, an empty window is displayed. After you have defined one or more Economic Indicators, the Economic Indicators Summary Page shows all the Economic Indicators that you have previously defined.

Topics:

- Economic Indicator Summary Page
- Search Economic Indicator Rule
- Add Economic Indicator Rule
- View and Edit Economic Indicator Rule
- Copy Economic Indicator Rule
- Delete Economic Indicator Rule

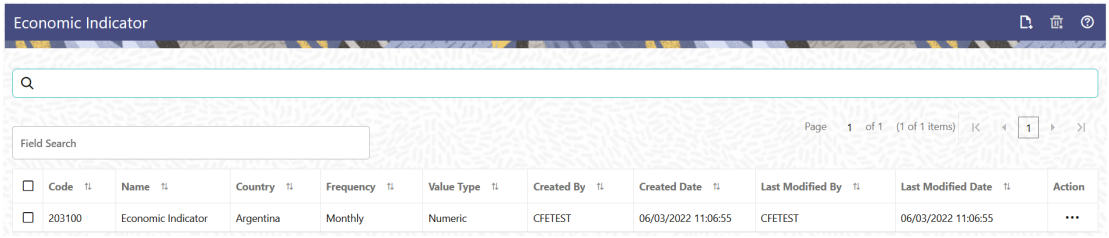
3.6.1 Economic Indicator Summary Page

The **Economic Indicator Summary** Page displays the following information.

Table 3-15 Economic Indicator Summary – Fields and Descriptions

Column	Description
Code	Displays the code of Economic Indicator
Name	Displays the Economic Indicator's Name
Country	Displays the Country of for which Economic Indicator has been defined
Frequency	Displays the Frequency at which value of Economic Indicator is expected to be updated
Value Type	Displays the Value Type of an Economic Indicator
Created By	Displays the Name of the user who created the Economic Indicator
Created Date	Displays the Date and Time at which the Economic Indicator was created
Last Modified By	Displays the Name of the user who last modified the Economic Indicator
Last Modified Date	Displays the Date and Time when Economic Indicator was modified last
Action	Displays the list of actions that can be performed on the Economic Indicator. For more information, see Economic Indicator – Icons and Descriptions

Figure 3-14 Economic Indicator Summary Page



The Action Column on **Economic Indicator Summary** Page offers several actions that allow you to perform different functions. The following options are available for the Economic Indicator Summary Page.

Table: Economic Indicator – Icons and Descriptions

Table 3-16 Economic Indicator – Icons and Descriptions

Fields	Description
Add	Click Add icon to build a new Economic Indicator.

Table 3-16 (Cont.) Economic Indicator – Icons and Descriptions

Fields	Description
Multiple Delete	Select one or more rules in the table and then click the Delete icon at the top right of the summary page to delete more than Economic Indicator Rules at the same time.
View/Edit	Click on the **Action** icon against the Economic Indicator Name and select View/Edit to view or edit the contents of an Economic Indicator rule in read/write format. Depending on user privileges the rule will open in either View or Edit Mode.
Save As	Click on the **Action** icon against the Economic Indicator Name and select Save As to create a copy of an existing Economic Indicator Rule.
Delete	Click on the **Action** icon against the Economic Indicator Name and select Delete to delete an existing Economic Indicator Rule.

3.6.2 Search Economic Indicator

Search for an Economic Indicator to perform any of the following tasks:

- View
- Edit
- Copy
- Delete

Prerequisites

Predefined Economic Indicator

Procedure

To search for an Economic Indicator Rule, follow these steps:

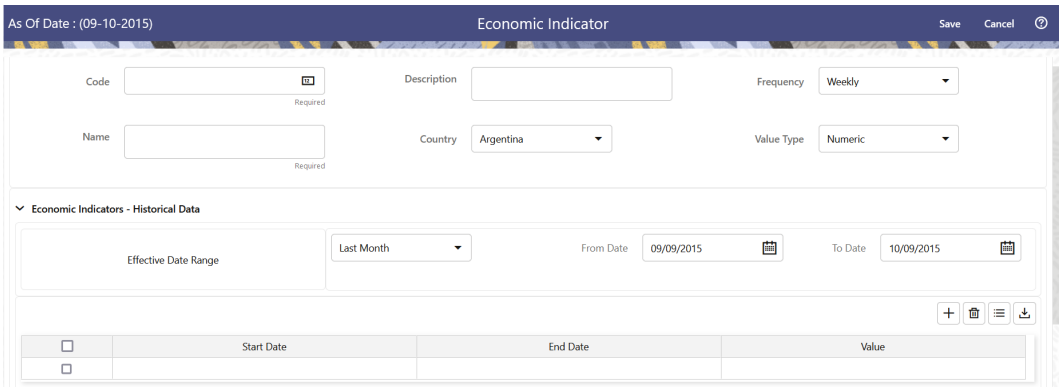
1. Navigate to the **Economic Indicator Summary** Page.
2. Enter the **Code, Name, Country**, and/or **Description** of the Economic Indicator and click **Search** .
3. Only Economic Indicator Rules that match the search criteria are displayed.

3.6.3 Add an Economic Indicator

To add an Economic Indicator, follow these steps:

1. Navigate to the **Economic Indicator Summary** Page.
2. Click **Add**.
   The **Economic Indicator** Page is displayed.

Figure 3-15 Economic Indicator Details Page



3. Enter the following information in the **Economic Indicator Details** section as tabulated.

Table 3-17 Economic Indicator Window – Fields and Descriptions

Fields	Description
Code	Enter the Code of Economic Indicator. You can click Generate Code Option in Code field to generate the code automatically.
Name	The name to your Economic Indicator is how you will subsequently refer to your rule within other the PBSM Services. You cannot rename existing Economic Indicators during Edit.
Description	Enter the Description of Economic Indicator. This field allows maximum 300 characters. Do not enter special characters ~, ‘, &, +, @.
Country	Select a country to which your Economic Indicator applies from the Country drop-down list. The value set of Countries is drawn from the seeded Country dimension. PBSM is seeded with over 70 country values, and you can add user-defined countries.
Frequency	The frequency of your Economic Indicator must match the frequency which with the indicator's data is made public. Unemployment statistics, for example, are generally released on a monthly frequency. Select a frequency from the Frequency drop-down list. Available frequencies are Weekly, Monthly, Quarterly, Semi-Annually, and Annually.
Value Type	Select a Value Type from the Value Type drop-down list. Available Value Types are Numeric, Percentage, and Amount. Numeric 0-999999 Percentage -100 to +100 Amount 0-999999

4. To build out your Historical Data, enter data within the **Economic Indicators – Historical Data** Section. The **Economic Indicators – Historical Data** Section displays a single blank row followed by the most recent period's data (if data has previously been stored in the database).

5. Enter the following information in the **Economic Indicators – Historical Data** Section as tabulated:

Table 3-18 Economic Indicator window – Fields and Descriptions

Fields	Description
Start Date and End Date	Select the Calendar icon immediately adjacent to the Start Date to choose a starting date for your Economic Indicator data point. The application will automatically populate the End Date based on the Economic Indicator's frequency. For example, if your Economic Indicator is an unemployment statistic that has a monthly frequency, select an start date that is the first day of the month that the unemployment rate describes. In this example, the application will automatically populate the End Date with the last day of the month you have selected.
Value	Enter the value for your Economic Indicator (such as the unemployment rate).
Adding a Data Points	Click Add to add a blank row into which you can enter additional Economic Indicator Data.
Adding Multiple Data Points	Click Add to add multiple blank rows into which you can enter additional Economic Indicator Data.
Deleting Data Points	Select one or more check boxes on the left-hand side of any row to enable the Delete icon. After clicking Delete, a confirmation message is displayed to delete the selected rows.
Download Excel	Excel export functionality is used to download the Economic Indicator information in xlsx format. Click Download Excel Option. After downloading, you can modify the value and paste back in the displayed data grid. Note: The date format in the Excel File should be same as provided in Global Preferences. For more information, see the Global Preference Section.

3.6.4 View and Edit Economic Indicator

You can view existing Economic Indicator, and you can edit existing Economic Indicator Rules, provided you have Read/Write privileges.

To view and edit an Economic Indicator, follow these steps:

1. Navigate to the **Reference Data** and select **Economic Indicator**.
2. Search for Economic Indicator. For further information, see the Searching for Rules section.

3. Click on the **Action** icon against the Economic Indicator Name and select **View/Edit** to open the rule you want to update.
4. Update the details, if required.
5. Click **Save**.

3.6.5 Copy Economic Indicator

You can copy Economic Indicator to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes.

To copy an Economic Indicator, follow these steps:

1. Navigate to the **Reference Data** and select **Economic Indicator**.
2. Search for an Economic Indicator.
   For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Economic Indicator Name and select **Save As** to duplicate the rule.
4. Enter a unique code.
5. Enter a unique name.
6. Enter a brief description.
7. Click the **Save** button.

3.6.6 Delete Economic Indicator

You can delete Economic Indicator Rules that are no longer required.

> **Note:**
>
> An Economic Indicator cannot be retrieved after deletion.
>
> Restrictions on deleting Economic Indicator Rules are:
>
> - You cannot delete Economic Indicator Rules if you have only Read privileges. Only users with Read/Write privileges and Economic Indicator owners can delete Economic Indicators.
> - You cannot delete an Economic Indicator that has a dependency.

To delete an Economic Indicator, follow these steps:

1. Navigate to the **Reference Data** and select **Economic Indicator**.
2. Search for Economic Indicator.
3. Click on the **Action** icon against the Economic Indicator Name and select **Delete**.

3.6.7 Dependency Check

You can check dependencies for rules to know where a particular Economic Indicator Rule has been used. This also prevents accidental deletion of rules having dependencies.

To check the dependency of a rule, follow these steps:

1. Navigate to the Reference Data and select Economic Indicator.
2. Search for a rule. For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Economic Indicator Name and select Dependency Check to the rule that you want to check for.

> **Note:**
>
> This is functionality will be released in future.

3.7 Currency Gain/Loss

Currency Gain/Loss occurs when an entity buys/sells goods or services in a foreign currency, and that currency fluctuates relative to their Local currency, this can create differences in value of the monetary Assets and Liabilities.

If the value of the home currency increases after the conversion, the seller of the goods will have made a foreign currency gain, however, if the value of the Local currency declines after the conversion, the seller will have incurred a foreign exchange loss. Further these transactions can be accounted as below mentioned.

- **Realized Gains/Losses**
  Realized gains are the price of an asset/investment that is higher than its carrying amount, however realized loss refers to the price that has dropped since the purchase of an asset/investment.
- **Unrealized Gains/Losses**
  Unrealized gains or losses are the gains or losses that the seller expects to earn when the invoice is settled, but the customer has failed to pay the invoice by the close of the accounting period. The seller calculates the gain or loss that would have been sustained if the customer paid the invoice at the end of the accounting period.

Currency Gain or Loss Basis determines how exchange rate fluctuations are reflected in financial element results for each product and currency combination. This provides the flexibility to use any specific exchange rate for Consolidation purposes the choices are:

- Temporal
- Historical Basis
- Current Rate

Consolidation categories allows Financial Elements that can be used as aggregating output drivers within the Currency Gain/Loss methods. The below table shows the relationship between Consolidation output to FE number and Output column base values by default, upon selection there is a dropdown facility which enables user to choose drivers based users preference.

Figure 3-16 Currency Gain/Loss Basis

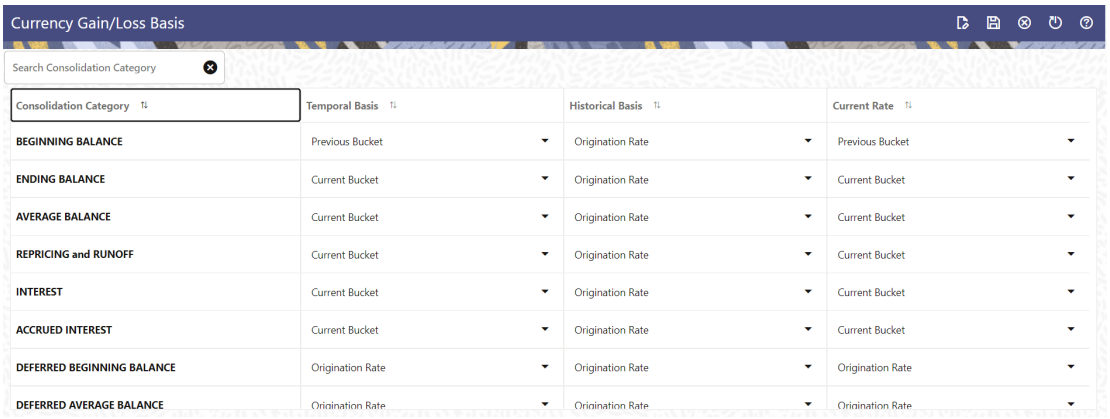


Table 3-19 Currency Gain/Loss Basis

Icon	Decription
Edit	Edit TEMPORAL BASIS using corresponding drop-down list. This field has following values: • Origination Rate • As of Date • Current Bucket • Previous Bucket Edit HISTORICAL BASIS using corresponding drop-down list. This field has following values: • Origination Rate • As of Date • Current Bucket • Previous Bucket Edit CURRENT RATE using corresponding drop-down list. This field has following values: • Origination Rate • As of Date • Current Bucket • Previous Bucket
Save	After modifying values, Click Save icon.
Cancel	After modifying values, user can click CANCEL to undo the changes before saving.
Reset to Default	The Reset to Default icon enables you to bring the configuration back to factory setting at anytime.
Help	This will open help file.

Topics:

- List of Consolidation Categories
- Editing of Consolidation Categories

3.7.1 List of Consolidation Categories

The following is the list of Consolidation Categories:

- Beginning Balance
- Ending Balance
- Average Balance
- Repricing and Runoff
- Interest
- Accrued Interest
- Deferred Beginning Balance
- Deferred Average Balance
- Deferred Ending Balance
- Deferred Runoff
- Non Interest
- Market Value
- IR Gap
- LR Gap

Table 3-20 Mapping between Consolidation Categories and FEs

FE NAME	TARGET COLUMN	CONSOLIDATION	Remarks
Beginning Balance	BEG_PRINCIPAL_BAL	BEGINNING BALANCE	Balance
Beginning Gross Rate	BEG_GROSS_RATE	BEGINNING BALANCE	Balance
Beginning Net Rate	BEG_NET_RATE	BEGINNING BALANCE	Balance
Ending Balance	END_PRINCIPAL_BAL	ENDING BALANCE	Balance
Ending Gross Rate	END_GROSS_RATE	ENDING BALANCE	Balance
Ending Net Rate	END_NET_RATE	ENDING BALANCE	Balance
Average Bal	AVG_PRINCIPAL_BAL	AVERAGE BALANCE	Balance
Average Gross Rate	AVG_GROSS_RATE	AVERAGE BALANCE	Balance
Average Net Rate	AVG_NET_RATE	AVERAGE BALANCE	Balance
Inflation Adjustment to Principal	INFLATION_ADJ_PRINCIPAL	REPRICING and RUNOFF	Balance
Inflation Adjustment to Interest	INFLATION_ADJ_INTEREST	REPRICING and RUNOFF	Balance
Prepayment Runoff Positive	PREPAYMENT_RUNOFF	REPRICING and RUNOFF	Balance
Timing of Prepay Runoff Positive	TIMING_PREPAY_RUNOFF	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Prepayment Runoff Negative	PREPAYMENT_RUNOFF_NEG	REPRICING and RUNOFF	Balance
Timing of Prepay Runoff Negative	TIMING_PREPAY_RUNOFF_NEG	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT

Table 3-20 (Cont.) Mapping between Consolidation Categories and FEs

MOA Prepay Runoff	MOA_PREPAYMENT_RUNOFF	REPRICING and RUNOFF	Balance
Timing of MOA Prepay Runoff	TIMING_MOA_PREPAY_RUNOFF	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Writeoff Positive	WRITE_OFF	REPRICING and RUNOFF	Balance
Timing of Writeoff Positive	TIMING_WRITE_OFF	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Writeoff Negative	WRITE_OFF_NEG	REPRICING and RUNOFF	Balance
Timing of Writeoff Negative	TIMING_WRITEOFF_NEG	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Payment Runoff Positive	PRINCIPAL_RUNOFF	REPRICING and RUNOFF	Balance
Timing of Payment Runoff Positive	TIMING_PRINCIPAL_RUNOFF	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Payment Runoff Negative	PRINCIPAL_RUNOFF_NEG	REPRICING and RUNOFF	Balance
Timing of Payment Runoff Negative	TIMING_PRINCIPAL_RUNOFF_NEG	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Index Factor	NOT APPLICABLE	NOT APPLICABLE	NOT OUTPUT IN AGGREGATION
Maturity Runoff Positive	MATURITY_RUNOFF	REPRICING and RUNOFF	Balance
Timing of Maturity Runoff Positive	TIMING_MATURITY_RUNOFF	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Maturity Runoff Negative	MATURITY_RUNOFF_NEG	REPRICING and RUNOFF	Balance
Timing of Maturity Runoff Negative	TIMING_MATURITY_RUNOFF_NEG	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Non Maturity - Core Runoff	NON_MAT_CORE_RUNOFF	REPRICING and RUNOFF	Balance
Timing of Non Maturity - Core Runoff	TIMING_NON_MAT_CORE_RUNOFF	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Non Maturity - Volatile Runoff	NON_MAT_VOL_RUNOFF	REPRICING and RUNOFF	Balance
Timing of Non Maturity - Volatile Runoff	TIMING_NON_MAT_VOL_RUNOFF	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Accumulated Devolvement Amount	ACCUMULATED_DEVOLVEMENT_AMT	REPRICING and RUNOFF	Balance
Devolvement Runoff	DEVOLVEMENT_RUNOFF	REPRICING and RUNOFF	Balance

Table 3-20 (Cont.) Mapping between Consolidation Categories and FEs

Timing of Devolvement Runoff	TIMING_DEVOLVEMENT_RUNOFF	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Recovery Runoff	RECOVERY_RUNOFF	REPRICING and RUNOFF	Balance
Timing of Recovery Runoff	TIMING_RECOVERY_RUNOFF	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Non Performing Asset Runoff	NON_PERF_RUNOFF	REPRICING and RUNOFF	Balance
Timing of Non Performing Asset Runoff	TIMING_NON_PERF_RUNOFF	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Total Runoff - Positive	TOTAL_PRINCIPAL_RUNOFF	REPRICING and RUNOFF	Balance
Timing of Total Runoff - Positive	TIMING_TOTAL_RUNOFF	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Total Runoff - Negative	TOTAL_PRINCIPAL_RUNOFF_NEG	REPRICING and RUNOFF	Balance
Timing of Total Runoff - Negative	TIMING_TOTAL_RUNOFF_NEG	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Total Call Runoff Amount	CALL_RUNOFF	REPRICING and RUNOFF	Balance
Timing of Call Runoff Amount	TIMING_CALL_RUNOFF	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Total Put Runoff Amount	PUT_RUNOFF	REPRICING and RUNOFF	Balance
Timing of Put Runoff Amount	TIMING_PUT_RUNOFF	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Strike Rate - Rate Based Approach	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT	Balance
Total Runoff Gross Rate	TOTAL_RUNOFF_GROSS_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
Prepay Runoff Gross Rate	PREPAY_RUNOFF_GROSS_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
Total Runoff Net Rate	TOTAL_RUNOFF_NET_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
Prepay Runoff Net Rate	PREPAY_RUNOFF_NET_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
Repricing Balance	BEG_REPRICE_BALANCE	REPRICING and RUNOFF	Balance
Repricing Balance At End	END_REPRICE_BALANCE	REPRICING and RUNOFF	Balance
Before Repricing Gross Rate	BEFORE_REPRICE_GROSS_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
After Repricing Gross Rate	AFTER_REPRICE_GROSS_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT

Table 3-20 (Cont.) Mapping between Consolidation Categories and FEs

Before Repricing Net Rate	BEFORE_REPRICE_NET_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
After Repricing Net Rate	AFTER_REPRICE_NET_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
Fully Indexed Gross Rate	FULL_INDEX_NET_INTEREST_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
Fully Indexed Net Rate	FULL_INDEX_GROSS_INTEREST_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
Interest Cash Flow	INTEREST_CASH_FLOW	INTEREST	Balance
Interest Cash Flow Gross	INTEREST_CASH_FLOW_GROSS	INTEREST	Balance
Interest Cash Flow Without Offset	INTEREST_WOUT_OFFSET	INTEREST	Balance
Interest Cash Flow Gross Without Offset	INTEREST_GROSS_WOUT_OFFSET	INTEREST	Balance
Interest Accrued	NET_INTEREST_ACCRUED	ACCRUED INTEREST	Balance
Accrued Interest (Without offset)	ACCRUED_INT_NET_WOUT_OFFSET	ACCRUED INTEREST	Balance
Interest Accrued Gross	GROSS_INTEREST_ACCRUED	ACCRUED INTEREST	Balance
Accrued Interest Gross (Without offset)	ACCRUED_INT_GROSS_WOUT_OFFSET	ACCRUED INTEREST	Balance
Accumulated Interest CF Net	ACCUMULATED_NET_INTEREST_AMT	INTEREST	Balance
Accumulated Interest CF Gross	ACCUMULATED_GROSS_INTEREST_AMT	INTEREST	Balance
Non Interest Income	NON_INTEREST_INCOME	NON INTEREST	Balance
Non Interest Expenses	NON_INTEREST_EXPENSE	NON INTEREST	Balance
Option Exercise Market Value	OPTION_EXERCISE_MV	MARKET VALUE	Balance
Option Exercise Rate	OPTION_EXERCISE_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
Option Exercise Gain Loss	OPTION_EXERCISE_GAIN_LOSS	REPRICING and RUNOFF	Balance
Interest Credited	INTEREST_CAPITALIZED	INTEREST	Balance
Discount Rate IS	DISCOUNT_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
Timing of Cash Flows in Days	TIMING_OF_PRESENT_VALUE_DAYS	NOT APPLICABLE	OUTPUT WOULD BE in WEIGHTED TIME FORMAT
Discount Factor	NOT APPLICABLE	NOT APPLICABLE	NOT OUTPUT IN AGGREGATION
Discount Factor Term Days	NOT APPLICABLE	NOT APPLICABLE	NOT OUTPUT IN AGGREGATION

Table 3-20 (Cont.) Mapping between Consolidation Categories and FEs

Rate Lookup Term Days	NOT APPLICABLE	NOT APPLICABLE	NOT OUTPUT IN AGGREGATION
WARM	WARM	NOT APPLICABLE	OUTPUT WOULD BE in WARM FORMAT
Annual Prepayment Rate	ANNUAL_PREPAYMENT_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
Balance Before Prepay	BAL_BEFORE_PREPAYMENT	REPRICING and RUNOFF	Balance
Deferred Beg Balance	DEFERRED_BEG_BAL	DEFERRED BEGINNING BALANCE	Balance
Deferred End Balance	DEFERRED_END_BAL	DEFERRED ENDING BALANCE	Balance
Deferred Average Balance	DEFERRED_AVG_BAL	DEFERRED AVERAGE BALANCE	Balance
Deferred Runoff	DEFERRED_RUNOFF	DEFERRED RUNOFF	Balance
Period Cap Balance	PERIOD_CAP_BALANCE	INTEREST	Balance
Period Cap Effect - Rate	PERIOD_CAP_EFFECT_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
Period Cap Effect - Amount	PERIOD_CAP_EFFECT_AMT	INTEREST	Balance
Life Cap Balance	LIFE_CAP_BALANCE	INTEREST	Balance
Life Cap Effect - Rate	LIFE_CAP_EFFECT_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
Life Cap Effect - Amount	LIFE_CAP_EFFECT_AMT	INTEREST	Balance
Tease Balance	TEASE_BALANCE	INTEREST	Balance
Tease Effect - Rate	TEASE_EFFECT_RATE	NOT APPLICABLE	OUTPUT WOULD BE in RATE FORMAT
Tease Effect - Amount	TEASE_EFFECT_AMT	INTEREST	Balance
Neg-Am Balance	NEG_AMRT_BALANCE	INTEREST	Balance
Neg-Am Interest	NEG_AMRT_INTEREST	INTEREST	Balance
Market Value	MARKET_VALUE	MARKET VALUE	Balance
Option Market Value	OPTION_MARKET_VALUE	MARKET VALUE	Balance
Present Value of Principal Cash Flows	MARKET_VALUE_PRINCIPAL	MARKET VALUE	Balance
Present Value of Interest Cash Flows	MARKET_VALUE_INTEREST	MARKET VALUE	Balance
DURATION	DURATION	NOT APPLICABLE	OUTPUT WOULD BE in DURATION FORMAT
DV01	DOLLAR_DURATION	MARKET VALUE	Balance

Table 3-20 (Cont.) Mapping between Consolidation Categories and FEs

Modified Duration	MODIFIED_DURATION	NOT APPLICABLE	OUTPUT WOULD BE in MODIFIED DURATION FORMAT

3.7.2 Editing Consolidation Category

To edit a Consolidation Category, perform the following steps:

1. Navigate to the Maintenance and select Currency Gain/Loss Basis.
2. Click **Edit** icon.
3. Select **Consolidation Category Row**.
4. After updating the category, click **Save** icon.

3.8 Time Buckets

The Time Bucket Rules allow users to create the time bucket definitions used for computing and outputting aggregated cash flows across time. The Time Bucket Rules determine the granularity of cash flow output and can be set at any frequency through a combination of daily, monthly, and yearly buckets. Time Buckets can be defined for the following types of ALM output:

- **Income Simulation**
  Income Simulation Buckets allow you to specify the time periods used for storing and reporting results. These bucket definitions set the modeling horizon for date-related business rule assumptions. When you change the number or frequency of the modeling buckets, existing business rules are affected.

  Be cautious when changing Time Bucket definitions when known dependencies exist.

  You can specify any combination of days, months, and years when setting up the buckets. Although all Oracle ALM cash flows are generated daily, they are aggregated into defined income simulation buckets when results are stored. Reports access information from the income simulation buckets and let you aggregate buckets. For example, you can define monthly income simulation buckets but generate a quarterly income statement. On the other hand, you cannot generate a weekly balance sheet if all income simulation buckets are monthly.

  If you want to use different configurations of income simulation buckets, such as all monthly or all quarterly, you should create a separate Time Bucket rule for each and use an appropriate naming convention to identify these characteristics. All date-related assumption rules should be defined and used in the context of a single set of Income Simulation buckets or a single Time Bucket Rule.

  Income Simulation Bucket definitions are referenced by all bucket based forecast business rules, including Forecast Rates, Forecast Balances, Pricing Margins and Maturity Mix Rules, and also by ALM Deterministic Processes during ALM Engine processing.
- **Interest Rate GAP**
  Interest Rate GAP Buckets allow you to define Interest Rate (repricing) GAP buckets including a catch all bucket to move reprice gap output for Non Interest Rate Sensitive products. From this screen, you can also define Dynamic Start Dates (as of date is

always the initial start date), which allows you to generate both static and dynamic GAP simulations.

With this Dynamic Start Date capability, users can also define forward start dates for computing dynamic market valuations. The Dynamic Start Date capability allows you to consider the amortization of existing business and any new business assumptions that are applicable between the current as of date and the future dated – Dynamic Start Date. You must set up Income Simulation Buckets before defining Interest Rate GAP Buckets.

Only Interest Rate GAP financial elements are impacted by the Interest Rate GAP bucket definitions. The Interest Rate GAP financial elements range from FE660 to FE700.

- **Liquidity GAP**
  Liquidity GAP Buckets are similar to Interest Rate GAP Buckets. The only difference is that Liquidity Bucket definitions impact only the Liquidity Runoff financial elements, which range from FE 1660 to 1717.

This module describes the procedure for working with and managing the Time Bucket Rules.

Topics

- Time Bucket Summary Page
- Search Time Bucket
- Create Time Bucket
- View and Edit Time Bucket
- Copy Time Bucket
- Delete Time Bucket

3.8.1 Time Bucket Summary Page

The Time Bucket Summary page displays the following information.

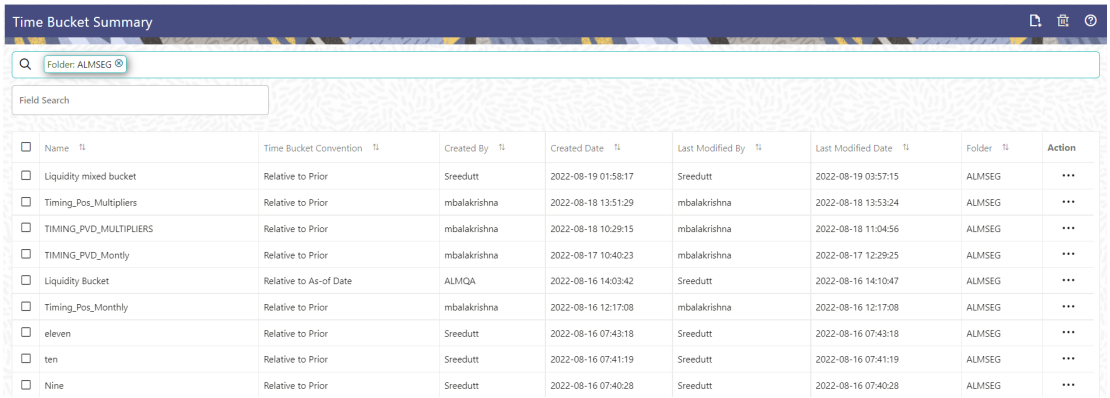
Table 3-21 Time Bucket Summary – Fields and Descriptions

Column	Description
Name	Displays the Time Bucket's Name.
Time Bucket Convention	Displays the Time Bucket Convention.
Created By	Displays the Name of the user who created the Time Bucket.
Created Date	Displays the Date and Time at which the Time Bucket was created.
Last Modified By	Displays the Name of the user who last modified the Time Bucket.
Last Modified Date	Displays the Date and Time when Time Bucket was modified last.
Folder	Displays the folder location where Time Bucket is saved.

Table 3-21 (Cont.) Time Bucket Summary – Fields and Descriptions

Column	Description
Action	Displays the list of actions that can be performed on the Time Bucket. For more information, see Time Bucket – Icons and Descriptions.

Figure 3-17 Time Bucket Summary Page



The Action Column on Time Bucket Summary page offers several actions that allow you to perform different functions. The following options are available for the Time Bucket Summary page.

Table 3-22 Table: Time Bucket – Icons and Descriptions

Fields	Description
Add	Click Add icon to build a new Time Bucket.
Multiple Delete	Select one or more rules in the table and then click the Delete icon at the top right of the summary page to delete more than Time Bucket Rules at the same time.
View/Edit	Click on the Action icon against the Time Bucket Rule Name and select View/Edit to view or edit the contents of a Time Bucket rule in read/write format. Depending on user privileges the rule will open in either View or Edit Mode.
Save As	Click on the Action icon against the Time Bucket Rule Name and select Save As to create a copy of an existing Time Bucket Rule.
Delete	Click on the Action icon against the Time Bucket Rule Name and select Delete to delete an existing Time Bucket Rule.

3.8.2 Search Time Bucket

Search for a Time Bucket to perform any of the following tasks:

- View
- Edit
- Copy
- Delete

Prerequisites

Predefined Time Bucket

Procedure

To search for a Time Bucket Rule, follow these steps:

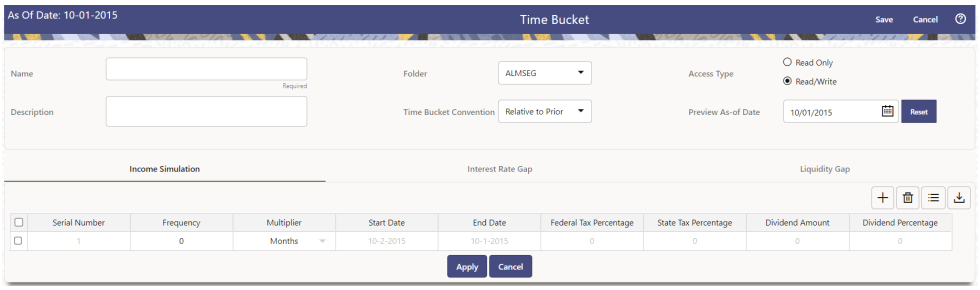
1. Navigate to the Time Bucket Summary page.
2. Enter the Code, Name, Folder, and/or Description of the Time Bucket and click Search.
3. Only Time Bucket Rules that match the search criteria are displayed.

3.8.3 Creating Time Bucket Rules

You create Time Bucket Rules to specify the time periods used for storing and reporting ALM results. To create a new Time Bucket Rule, follow these steps:

1. Navigate to the Time Buckets Summary page.
2. Click **Add** to create a new Time Bucket Rule.

Figure 3-18 Creating Time Bucket Rule



3. Enter the Name and Description of Time Bucket.
4. Select the Folder and Access Type.
5. Select **Time Bucket Convention** as **Relative to Prior** or **Relative to As-of Date** option.
   - **Relative to Prior:** This convention means that all time bucket points are relative to the period that preceded them, with the first time bucket relative to the currently active as-of date. This convention supports the stub-to feature for time buckets.
   - **Relative to As-of-Date:** This convention means that all time bucket points are relative to the currently active As-of Date. This means that each new time bucket point entered must be greater in time than the one preceding it by at least one day. The stub-to time bucket feature is not available with this convention.

6. You must have an Active Time Bucket Rule at all times. If you wish to Activate a particular Time Bucket Rule, then select **Relative to As-of- Date** option.
7. You can Preview As-of Date by using **Preview As-of Date** option.
8. Define the Time Bucket Rule. For more information, see Defining Time Bucket Rules

3.8.4 Defining Time Bucket Rules

The definition of a Time Bucket Rule is part of the Create or Edit Time Buckets Rule Process. When you click Save in the Create Time Buckets Rule Process, the rule is saved and the Time Buckets Rule Summary page is displayed. However, Time Bucket assumptions may not have been defined at this point. You must define the Time Bucket assumptions before clicking Save.

In the Time Bucket Details screen, you have three tabs available for creating Time Bucket definitions.

- Income Simulation Buckets (required)
- Interest Rate GAP Buckets, including Non Interest Rate Sensitive Bucket (required only if Repricing Gap is selected during processing). For Non Interest Rate Sensitive Bucket, both Repricing Gap and Include Non Rate Sensitive Bucket are required selections.)
- Liquidity GAP Buckets (required only if Liquidity Gap is selected during processing)

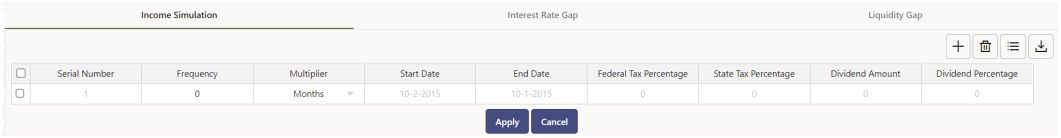
Prerequisites

Performing basic steps for creating or editing a Time Bucket rule. For more information, see the Creating Time Bucket Rules

To define the Time Bucket Rule, follow these steps:

1. In the **Income Simulation** tab, follow these steps:

Figure 3-19 Income Simulation Buckets



a. Click **Add Rows** and enter the desired number of rows corresponding to the number of Income Simulation Buckets required to create.
You can select a pre-defined number of rows from the list. For example, 3, 5, 10, or you can enter the exact number of rows required to add. The maximum number of buckets you have under any tab is 240.

b. Under Frequency, enter a numeric value. For example 1. The Frequency column displays the duration of the multiplier. The frequency in conjunction with the multiplier displays the duration of the buckets. The frequency can be any number from 1 to 999.

c. Under Multiplier, select an appropriate value from the list. The Multiplier column includes Daily, Monthly, Yearly, or stub-to (Relative to Prior convention) options.

> **Note:**
>
> Limit the definition of Income Simulation buckets to the date range that is relevant to your reporting requirement. It is not necessary to create catch all buckets at the end of the series. When large buckets are created, for instance, 99 Years, this can result in the following error:
>
> INSERT Oracle Error: ORA- 01426: numeric overflow
>
> Driver
>
> Function: drv_oci::Execute()

You may also select a Stub-to time bucket breakpoint in months or years when the time bucket convention is Relative to Prior. When applying a stub-to month or stub-to year it is not necessary to specify a time bucket frequency or multiplier as the application will automatically calculate the amount of time necessary to close the period.

> **Note:**
>
> Whenever the currently active as-of date changes this may also automatically change the size of any stub-to time buckets. These changes may impact processing output.

d. Continue adding frequencies and multipliers as needed. After you fill in the frequencies and multipliers, the start and end dates are calculated auto-matically based on the As-of-Date, defined in your Application Preference settings.

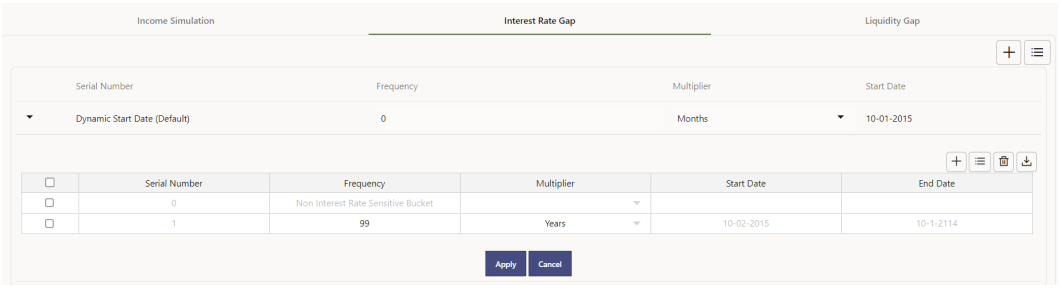
e. Select **Save** if you are finished.

2. Otherwise, navigate to the Interest Rate GAP Buckets tab. After defining Income Simulation buckets, navigate to the **Interest Rate GAP Buckets** tab. This tab provides two important inputs. The first is the ability to define Interest Rate GAP Buckets and optionally add a Non Interest Rate Sensitive Bucket for Non Rate Sensitive products. The second capability allows you to define one or more Dynamic Start Dates. The following steps explain how to complete each of these setup tasks.

> **Note:**
>
> The Interest Rate GAP Bucket can be defined from Bucket count 1 till Bucket count 239 in all dynamic start dates. The last time series time bucket in all Dynamic Start Dates will default to 99 years as a catch all bucket. This is used to verify the total runoff for reporting requirements.

In the **Interest Rate GAP Buckets** tab, follow these steps:

Figure 3-20 Interest Rate GAP Buckets



a. Click **Add Rows** corresponding to the Default Dynamic Start Date and enter the desired number of rows for your Interest Rate GAP Buckets.

> **Note:**
>
> The product dimension Attribute Interest Rate Sensitivity Category identifies products as Interest Rate sensitive or Non Interest Rate sensitive. Once a product is mapped as Non Interest Rate sensitive, you must enable Include Non Interest Rate Sensitive Bucket in Process Rules. This moves reprice gap output from Non Interest Rate Sensitive products into Non Interest Rate Sensitive Bucket.

b. Follow steps a— d described above under Income Simulation Buckets, to complete the setup of your Interest Rate GAP Buckets and Non Interest Rate Sensitive Bucket for the default Dynamic Start Date.

c. If you would like to define additional – forward dated, Dynamic Start Dates, Click **Add Dynamic Start Date** to add one or more parent nodes to the bucket hierarchy.

d. For each additional Dynamic Start Date row, enter the Frequency and Multiplier to determine future start date(s).

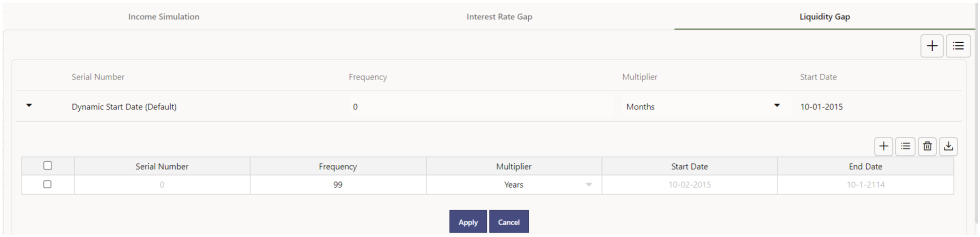
e. Click **Add Rows** corresponding to each new Dynamic Start Date and repeat the Interest Rate GAP Bucket definition steps previously described to complete the setup.

3. After defining Interest Rate GAP Buckets, navigate to the Liquidity Buckets tab. This tab has the same structure as the Interest Rate GAP Buckets tab. It allows you to define the Liquidity GAP Buckets for the Default Dynamic Start Date and also allows you to add one or more additional Dynamic Start Dates. The use of Dynamic Start Dates will allow you to forecast your liquidity position as of some future point in time, considering all relevant assumptions, including amortization, prepayments, early withdrawals, and rollovers.

> **Note:**
>
> By default, the last time series time bucket in all Dynamic Start Dates will default to 99 years as a catch all bucket. This is used to verify the total runoff for reporting requirements.

In the **Liquidity Buckets** tab, follow these steps:

Figure 3-21 Liquidity Buckets



a. Click **Add Rows** corresponding to the Default Dynamic Start Date and input the desired number of rows for your Liquidity Buckets.

b. Follow steps b– d described under Income Simulation Buckets, to complete the setup of your Liquidity Buckets for the Default Dynamic Start Date.

c. If you would like to define additional – forward dated, Dynamic Start Dates, Click **Add Dynamic Start Date** to add one or more parent nodes to the bucket hierarchy.

d. If needed, enter the Frequency and Multiplier for the new Dynamic Start Date to determine the future start date.

e. Click **Add Rows** corresponding to the new Dynamic Start Date and repeat the Liquidity GAP Bucket definition steps previously described.

f. Click **Save** once you have completed the setup for all bucket types.

> **Note:**
>
> Each time you change the As of Date in your Application Preferences window, all Time Bucket Rule Buckets Start Date and Bucket End Date updated automatically.

Excel Export functionality is used for adding/editing time bucket information.

3.8.5 View and Edit Time Bucket

You can view existing Time Bucket, and you can edit existing Time Bucket Rules, provided you have Read/Write privileges.

To view and edit a Time Bucket, follow these steps:

1. Navigate to the Reference Data and select Time Bucket.
2. Search for Time Bucket. For further information, see the Searching for Rules section.
3. Click on the Action icon against the Rule Name and select View/Edit to open the rule you want to update.
4. Update the details, if required.
5. Click **Save.**

3.8.6 Copy Time Bucket

You can copy Time Bucket to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes.

To copy a Time Bucket, follow these steps:

1. Navigate to the **Reference Data** and select **Time Bucket**.
2. Search for a Time Bucket.
   For more information, see the Searching for Rules section.
3. Click on the Action icon against the Rule Name and select Save As to duplicate the rule.
4. Enter a unique code.
5. Enter a unique name.
6. Enter a brief description.
7. Click the **Save** button.

3.8.7 Delete Time Bucket

You can delete Time Bucket Rules that are no longer required.

> **Note:**
>
> An Time Bucket cannot be retrieved after deletion.
>
> Restrictions on deleting Time Bucket Rules are:
>
> - You cannot delete Time Bucket Rules if you have only Read privileges. Only users with Read/Write privileges and Time Bucket owners can delete Time Buckets.
> - You cannot delete a Time Bucket that has a dependency.

To delete a Time Bucket, follow these steps:

1. Navigate to the **Reference Data** and select **Time Bucket**.
2. Search for Time Bucket.
3. Click on the Action icon against the Rule Name and select Delete.

3.9 Multi Dimensional Balance Sheet Structure

The Multi-Dimensional Balance Sheet Structure or MDBSS is a comprehensive, user-defined, multi-dimensional hierarchy. It replaces the single dimension hierarchy for processing and reporting and allows you to incorporate one or more organizational hierarchies into a single concept. This new framework is designed to be a complete system that persists throughout the Application. This flexible structure supports the following functionalities:

- Organize the balance sheet with nodes and leafs of one or more dimensions
- Distribute parent dimension attributes down to descendant nodes, including currency

- Slot existing data at any node, not just the leaf level
- Place rules at any level with automatic inheritance
- Assign Forecast Methods (including balances and pricing) at any level
- Report on processing results with dimensional identity for both existing and new business

The MDBSS allows you the maximum flexibility to create, organize, plan, and report with your preferred balance sheet according to the key and simple dimensions (and other attributes) inherent in your data.

> **Note:**
>
> For MDBSS Migration, Dimension migration is pre-req step for Hierarchy migration.

Topics

- Multi Dimensional Balance Sheet Summary Page
- Create Multi Dimensional Balance Sheet
- View /Edit Multi Dimensional Balance Sheet
- Copy Multi Dimensional Balance Sheet
- Delete Multi Dimensional Balance Sheet

List of supported Dimensions and Hierarchies

Following are the supported dimensions and hierarchies that you can use in defining a Multi Dimensional Balance Sheet Structure:

- Organization Unit*
- GL Account*
- Common Chart of Accounts*
- Product*
- Legal Entity*
- Currency
- Credit Rating
- Geographic Location
- Adjustable type
- Amortization type
- Product Amenability Category
- Customer ID
- Segment ID

***Signifies a Key Processing Dimension which supports user-defined hierarchies.

Key Features:

- **Existing Data Slotting in the Multi Dimensional Balance Sheet Structure**

The Multi Dimensional Balance Sheet Structure allows you to load your organization's existing data throughout its framework. Unlike standard single-dimension hierarchies, the MDBSS can support the loading and placement of data at any node. The hierarchical relationship of data between parent and child nodes is preserved depending on the organizational parameters you define. This means that at the reporting level, a parent node will include its own and all its child balances if "collapsed" to that level of detail. No data will ever occupy more than one node, though depending upon how your MDBSS is configured not all data will necessarily be loaded.

The placement of data in an MDBSS depends on several factors, including the number of unique dimension members and their spatial organization with each other. You can consider each MDBSS node as a unique criteria for data placement. Usually, the more unique dimension members in an MDBSS means fewer records per MDBSS node, and vice versa. You can determine what the appropriate level of detail required and organize the MDBSS accordingly. An important feature of the MDBSS is that the same data may slot differently in two different MDBSS, even if they use the same dimension members, depending on how the MDBSS dimension members are organized. This feature allows you to determine what is best given your processing and reporting objectives. As a general rule it is usually best to construct the MDBSS so that most data slots at or near the terminal nodes (or lowest level) of the Structure.

When loading data, the Application takes the specified MDBSS and, starting at the lowest levels of the structure first, work its way up the Structure, placing existing data in every qualifying node. Existing data will never be placed at more than one node anywhere in the MDBSS. Once the data loading process reaches the highest node or nodes, the data loading process ends and existing data will be evaluated accordingly (depending on whether it is a static or dynamic forecast). The Application performs this data loading routine every time a process is executed so that any changes in the underlying data are always represented. All nodes do not need to have existing data slotted to them.

- **Organizational Rules for the Multi Dimensional Balance Sheet Structure**
  You can create and organize a Multi Dimensional Balance Sheet Structure according to your organizational objectives, created from one or more of your existing dimensions and hierarchies. There are rules and guidelines for creating and maintaining an MDBSS so that it preserves data integrity and processing efficiency.

  Following are the main rules for the MDBSS:

  1. The first dimension type placed is the "anchor dimension" and all sibling nodes on this first level must also be the same dimension type.
  2. The parent-child relationship of the source hierarchy must also be preserved when placing these dimension members in the MDBSS.
  3. On a single MDBSS branch each unique dimension type must be kept adjacent.

- **Rule Placement for the Multi Dimensional Balance Sheet Structure**
  The Multi Dimensional Balance Sheet Structure allows you to place rules like Discount Methods or Prepayment & Early Redemption on any of its nodes. If a rule is placed on an MDBSS node that has child nodes then those child nodes will automatically inherit the parent node's rule. You can always modify or remove these inherited rules.

- **Currency Nodes in the MDBSS**
  Currency Nodes in the MDBSS are done with single dimension hierarchies. Rules are assigned on the MDBSS node and currency as a page filter of the rule. If your MDBSS also has a currency node, then that node and all of its children will retain this identity regardless of the page filter currency of the rule. For example, if an MDBSS node is a currency type JPY and the rule's page filter currency is INR, then the JPY node of the MDBSS will gray out and not be eligible for modification. The currency of the MDBSS

node and the currency of the active page filter currency must be the same (or default currency).

- **Dynamic Forecasting for the Multi Dimensional Balance Sheet Structure**
  The Multi Dimensional Balance Sheet Structure allows you to define, price, and forecast dynamic new business at any level of detail in any currency under any contractual features you specify. The balance behaviors of child nodes will be taken into consideration at higher nodes for certain Forecast Method types so that accurate targets are always achieved. All Forecasting rules intended to be used in a Dynamic process must use the same MDBSS.
- **Reporting for the Multi Dimensional Balance Sheet Structure**
  The Multi Dimensional Balance Sheet Structure allows you to report both existing and new business with all associated reporting output available. New business results inherits the dimensionality given in the MDBSS at every level of detail, thus reducing the amount of dimensional ambiguity that existed in a single dimension hierarchy. Expanding or collapsing the Structure will automatically calculate the sums and averages of all reporting values.

3.9.1 Multi Dimensional Balance Sheet Summary Page

The Multi Dimensional Balance Sheet Structure is a way to visualize your organization's balance sheet and execute processing and reporting at any level of detail needed by using the dimensions and hierarchies already defined in the Application and your data. The MDBSS has more features and functions than previous single dimension hierarchies and is the only supported hierarchy object in Oracle ALMCS for Dynamic Forecasting. The MDBSS represents a single, end-to-end balance sheet solution that is used for all Application requirements including loading enterprise data, rule placement, forecasting, processing, and reporting.

The MDBSS works by taking its structure from one or more existing hierarchies whether they are nodes or leafs and organizing them together to represent your balance sheet at any level of detail. Both your existing data and your new business forecast data will inherit this implied dimensionality, thus reducing the dimensional ambiguity at the reporting level. In the MDBSS there is no longer a concept of hierarchical "Node" or "Leaf" as there is with a single dimension hierarchy, instead, all members of an MDBSS are considered nodes that can retain data, hold rules, and project forecast balances, all with full reporting structural integrity.

This page is the gateway to all Multi Dimensional Balance Sheet Rules and related functionality. You can navigate to other pages relating to Multi Dimensional Balance Sheet Rules from this point.

The Multi Dimensional Balance Sheet Summary Page displays the following columns.

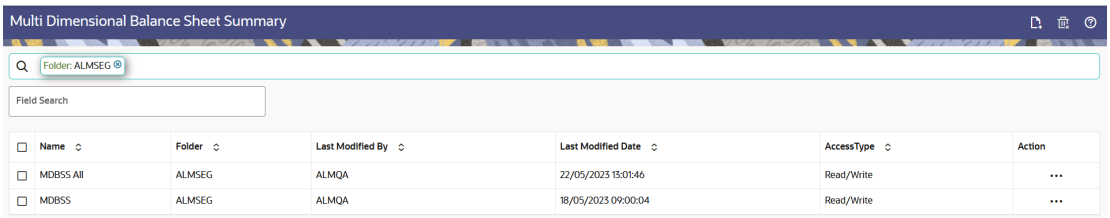
Table 3-23 Multi Dimensional Balance Sheet Rule – Fields and Descriptions

Column	Description
Name	Displays the Multi Dimensional Balance Sheet Rule's Short Name.
Folder	Displays the folder of Multi Dimensional Balance Sheet rule.
Last Modified By	Displays the Name of the user who last modified the Multi Dimensional Balance Sheet Rule.

Table 3-23 (Cont.) Multi Dimensional Balance Sheet Rule – Fields and Descriptions

Column	Description
Last Modified Date	Displays the Date and Time when Multi Dimensional Balance Sheet Rule was modified last.
Access Type	Displays the Access Type as Read-Only or Read/Write.
Action	Displays the list of actions that can be performed on the Multi Dimensional Balance Sheet Rule. For more information, see Multi Dimensional Balance Sheet – Icons and Descriptions.

Figure 3-22 Multi Dimensional Balance Sheet Summary Page



The Action column on the Multi Dimensional Balance Sheet Summary Page offers several actions that allow you to perform different functions. The following actions are available for the Multi Dimensional Balance Sheet Rule.

Table 3-24 Multi Dimensional Balance Sheet Rule – Icons and Descriptions

Fields	Description
Add	Click Add icon at the top right of the Summary Page to build a new Multi Dimensional Balance Sheet Rule.
Multiple Delete	Select one or more rules in the table and then click the Delete icon at the top right of the Summary Page to delete more than one rule at the same time.
View/Edit	Click on the Action icon against the Multi Dimensional Balance Sheet Name and select View/Edit to view or edit the contents of a Multi Dimensional Balance Sheet Rule in Read/Write format. Depending on User Privileges the rule will open in either View or Edit Mode.
Save As	Click on the Action icon against the Multi Dimensional Balance Sheet Name and select Save As to create a copy of an existing Multi Dimensional Balance Sheet Rule.

Table 3-24 (Cont.) Multi Dimensional Balance Sheet Rule – Icons and Descriptions

Fields	Description
Delete	Click on the Action icon against the Multi Dimensional Balance Sheet Name and select Delete to delete an existing Multi Dimensional Balance Sheet Rule.
Dependency Check	Click on the Action icon against the Multi Dimensional Balance Sheet Name and select Dependency Check to view objects where selected Multi Dimensional Balance Sheet Rule is used.

3.9.2 Search for Multi Dimensional Balance Sheets

Search for a Multi Dimensional Balance Sheet to perform any of the following tasks:

- View
- Edit
- Copy
- Delete
- Check Dependencies

Prerequisites

- Predefined Multi Dimensional Balance Sheets

Procedure

To search for Multi Dimensional Balance Sheets, do the following:

1. Navigate to the **Multi Dimensional Balance Sheet** summary page.
2. Enter the Code, Name, Description, or Folder of the rule in Search Criteria.
3. Click the **Search** icon.

Only Multi Dimensional Balance Sheets that match the search criteria are displayed.

You can control the number of rows to display on-screen by selecting the "Pagination Options" icon from the action bar.

3.9.3 Create Multi Dimensional Balance Sheet Summary

Before creating a new Multi Dimensional Balance Sheet Structure, you need to first consider your organization's goals. This will help you realize the full potential of the MDBSS system and achieve your objectives. You can create more than one MDBSS, with each designed to achieve a specific objective.

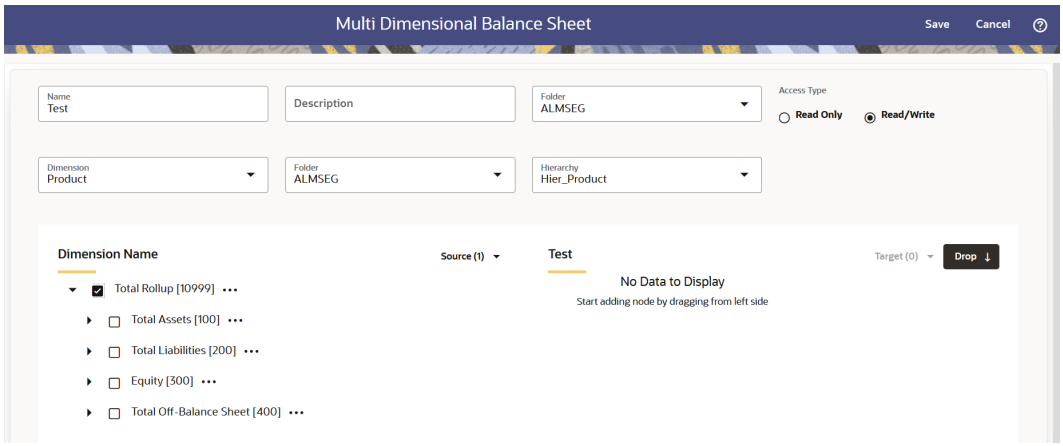
> **Note:**
>
> Different MDBSS structures will slot existing data differently, even if they all use the same dimensions. While an MDBSS can place your organization's data at any node, this does not mean all data will necessarily be placed successfully depending upon the MDBSS organization. You should always carefully evaluate what organization data will and will not be included in a particular MDBSS. Ongoing maintenance of your MDBSS is highly recommended.

The MDBSS has organizational rules in place that allow you to maximize its full potential and prevent the possibility of duplicate data being loaded into the Structure.

To create the Multi Dimensional Balance Sheet, do the following:

1. Navigate to the **Multi Dimensional Balance Sheet** summary page.
2. Click **Add** icon. The **Multi Dimensional Balance Sheet** page is displayed.

Figure 3-23 MDBSS Rule



3. Enter the following details:

Table 3-25 Create MDBSS Rule

Fields	Description
Name	Enter the name of the Multi Dimensional Balance Sheet Rule.
Description	Enter the description of the Multi Dimensional Balance Sheet Rule. This is an optional field.
Folder	Select the Folder where the Multi Dimensional Balance Sheet Rule needs to be saved.
Access Type	Select the Access Type as Read-Only or Read/ Write.
Dimension	Select the Dimension of the Multi Dimensional Balance Sheet Rule.
Folder	Select the Hierarchy Folder of the Multi Dimensional Balance Sheet Rule.

Table 3-25 (Cont.) Create MDBSS Rule

Fields	Description
Hierarchy	Select the Hierarchy of the Multi Dimensional Balance Sheet Rule.

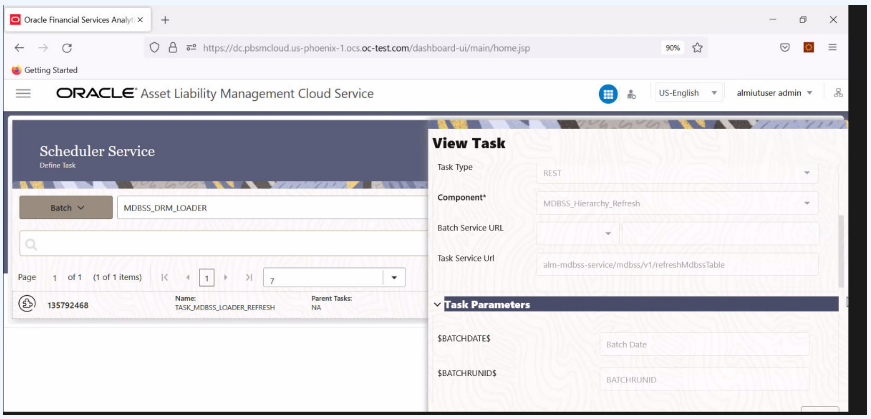
4. Select the Source of Dimension from **Dimension Name** drop-down list. You can click **Source** option to **Select All** or **Unselect All**.
5. Select the Target Node of Dimension. Here, You can select more than one Nodes at a time.
6. Click **Drop**. You can use **Revert** option to reverse the selection.
7. Click **Target** option to **Select All** or **Unselect All**.
8. Click **Save**.

Note:

If you are using a DRM loader in ALMCS for MDBSS, follow these mandatory steps:

1. Complete all the steps mentioned in DRM Loader. For more information, see the DRM loader section.
2. Navigate to **Operations and Process** from LHS, then select **Scheduler**.
3. Create a Batch, and then click **Define Task**.
4. Define DRM loader task(s).

Figure 3-24 MDBSS_DRM_Loader seeded batch



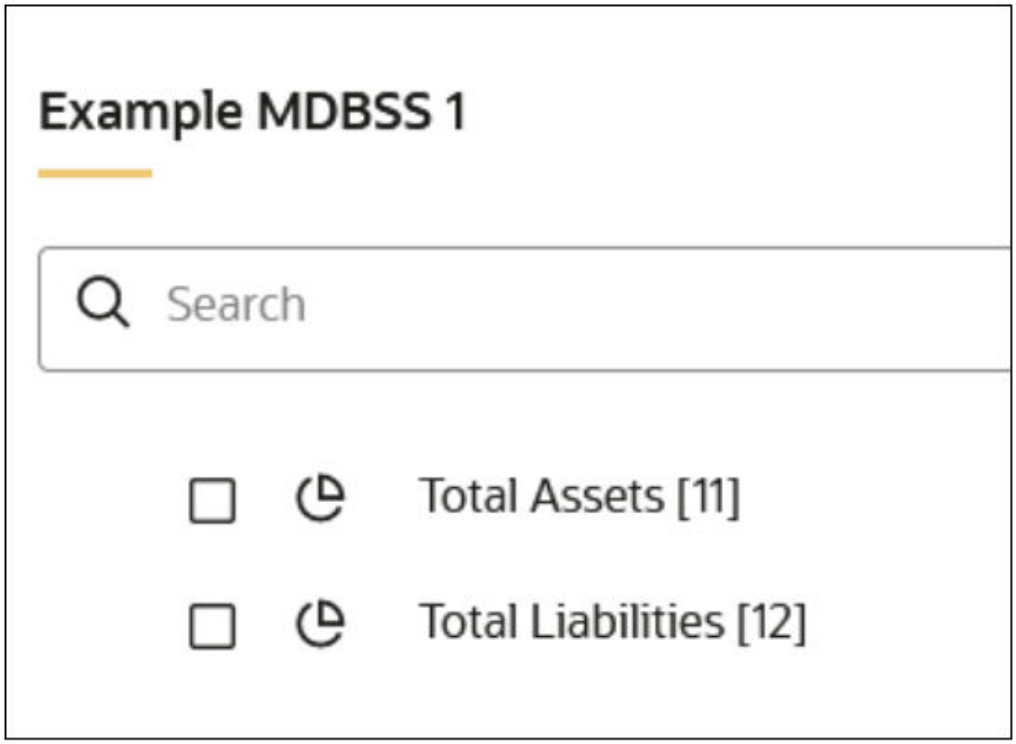
5. Create another task with Component as **MDBSS_Hierarchy_Refresh**.
6. Click Ok.

3.9.4 Examples of Multi Dimensional Balance Sheet Structure

List of Examples:

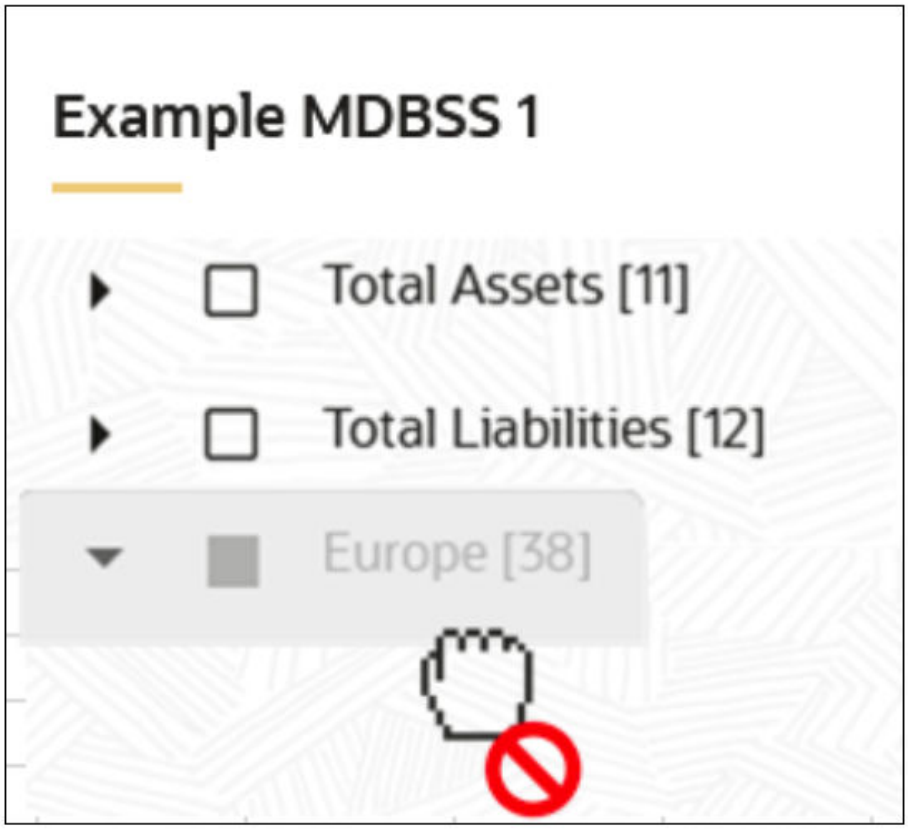
1. The first dimension type placed is considered an "anchor dimension" on level 1, or the highest parent node. This first dimension type can be of any supported dimension or hierarchy member, but once placed all sibling branches on level 1 must be the same dimension type. For example, if you place a Product dimension member (node or leaf), then every new node placed on the first level must also be a Product dimension member.

Figure 3-25 Example 1



   a. The node "Total Assets" is a Product member and its sibling "Total Liabilities" must also be a Product member.

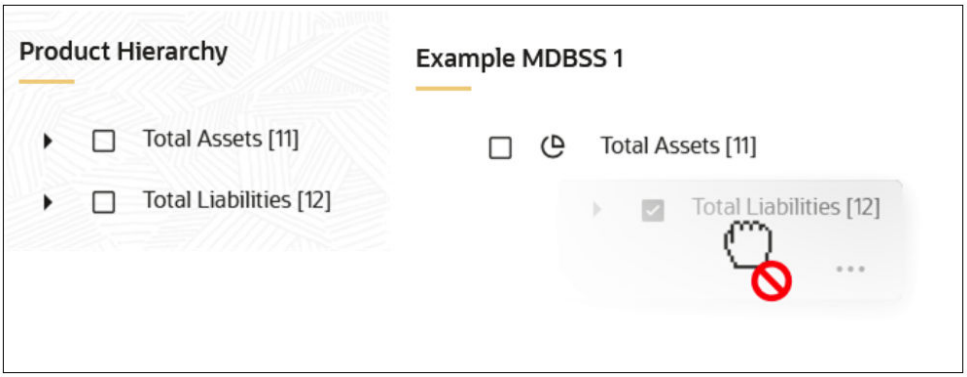
Figure 3-26 Example 2



b. The Legal Entity dimension "Europe" cannot be made a sibling of "Total Assets" and "Total Liabilities" since they have been placed first and are a Product dimension.

2. The parent-child relationship of the source hierarchy must be preserved when placing in the MDBSS.

Figure 3-27 Example 3

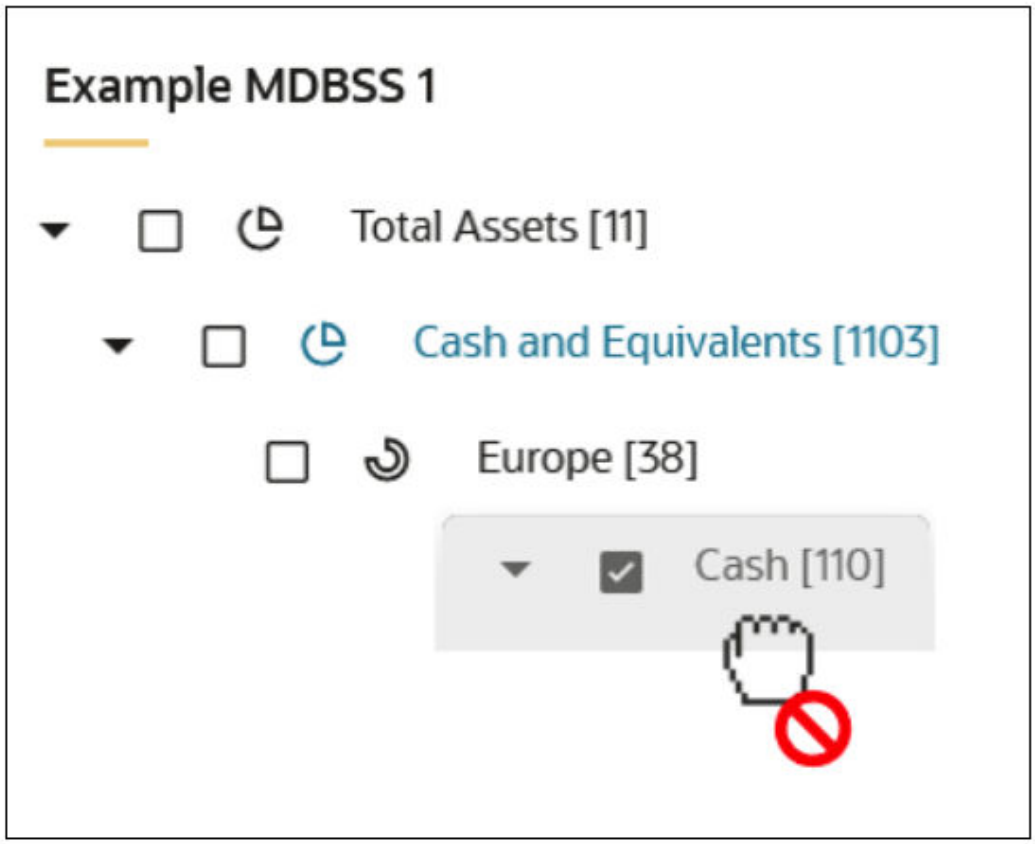


a. Node "Total Liabilities" is a sibling of "Total Assets" in the source hierarchy. This means that "Total Liabilities" cannot be made a child of "Total Assets" in

an MDBSS since that would violate its parent-child relationship established in the source hierarchy.

3. Nonadjacent dimensions of the same type on a single branch is not allowed. Once a branch of a dimension has been added it cannot be reintroduced again on that same branch.

Figure 3-28 Example 4



   a. The node "Cash" cannot be made a child of node "Europe" (a Legal Entity member) since it is not adjacent to the other Product hierarchy members on the same branch.

4. The MDBSS can be constructed of dimension hierarchy nodes, leafs, or both. Using a source hierarchy node implies that all its children are also included in the MDBSS.

Figure 3-29 Example 5



a. You can place the node "GL Cash and Equiv" from its source hierarchy and it is implied that its children "A101" and "A102" will also be included in the MDBSS.

5. A source hierarchy branch does not need every member included in the MDBSS as long as it preserves the parent-child relationship of the source branch.

Figure 3-30 Example 6



a. Every member of the branch from hierarchy Legal Entity does not need to be included in the MDBSS as long as the overall parent-child relationship ("German Bank" is a descendant child of node "Europe").

Using these guidelines you can create as many Structures as needed. You can add, move, or delete nodes as long as the placement guidelines are followed.

> **Note:**
>
> Once a Static or Dynamic process is completed using a specific MDBSS then that Structure is locked and cannot be modified. This is required to preserve reporting integrity.

3.9.5 View and Edit Multi Dimensional Balance Sheet

You can view existing Multi Dimensional Balance Sheet, and you can edit existing rules, provided you have Read/Write privileges.

To view and edit a Multi Dimensional Balance Sheet rule, follow these steps:

1. Navigate to the **Reference Data** and select **Multi Dimensional Balance Sheet**.
2. Search for a Rule. For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the rule Name and select **View/Edit** to open the rule you want to update.
4. Update the Rule details.
5. Click **Apply** or **Save**, depending on the Rule type.

3.9.6 Copy Multi Dimensional Balance Sheet

You can copy rules to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes.

To copy a Multi Dimensional Balance Sheet, follow these steps:

1. Navigate to the **Reference Data** and select **Multi Dimensional Balance Sheet**.
2. Search for a Rule.
   For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the rule Name and select **Save As** to duplicate the rule.
4. Select a folder where you want to save the Rule Copy.
5. Enter a unique name for the new Rule.
6. (Optional) Enter a brief description of the Rule.
7. Select the access type.
8. Click **Save**.

3.9.7 Delete Multi Dimensional Balance Sheet

You can delete rules that are no longer required.

> **Note:**
>
> A Multi Dimensional Balance Sheet rule cannot be retrieved after deletion.
>
> Restrictions on deleting rules are:
>
> - You cannot delete rules if you have only Read privileges. Only users with Read/ Write privileges and rule owners can delete Multi Dimensional Balance Sheets.
> - You cannot delete a rule that has a dependency.

To delete a Multi Dimensional Balance Sheet, follow these steps:

1. Navigate to the **Reference Data** and select **Multi Dimensional Balance Sheet**.
2. Search for a Rule. For more information, see the Searching for Rules section.
3. Click on the Action icon against the Multi Dimensional Balance Sheet Name and select **Delete**.

3.10 Product Characteristics

Product Characteristic Rules are used to define payment, pricing, and repricing characteristics for new business. These Product Characteristics are rules that are placed on MDBSS nodes to be used in Forecasting that instruct the Application on what key new business contractual and behavioral features are to be included, such as amortization, adjustable type, compounding, day count, and other key features.

The new business assumptions are based on the MDBSS structure and ALMCS key features. **In ALMCS, Product Characteristics is for new business forecasting only and does not include any existing business assumptions.**

As part of creating and editing Product Characteristic Rules, you assign product attribute assumptions to applicable products from the product hierarchy.

> **Note:**
>
> Oracle Asset Liability Management Cloud provides the option to copy, in total or selectively, the product assumptions contained within ALM business Rules from one currency to another currency or a set of currencies or from one product to another product or a set of products.

Topics

- Product Characteristic Summary Page
- Search Product Characteristic Rule
- Create a Product Characteristic Rule
- View and Edit Product Characteristic Rule
- Copy Product Characteristic Rule
- Delete Product Characteristic Rule

3.10.1 Product Characteristic Summary Page

This page is the gateway to all Product Characteristic Rules and related functionality. You can navigate to other pages relating to Product Characteristic Rule from this point.

The Product Characteristics Summary Page displays the following columns.

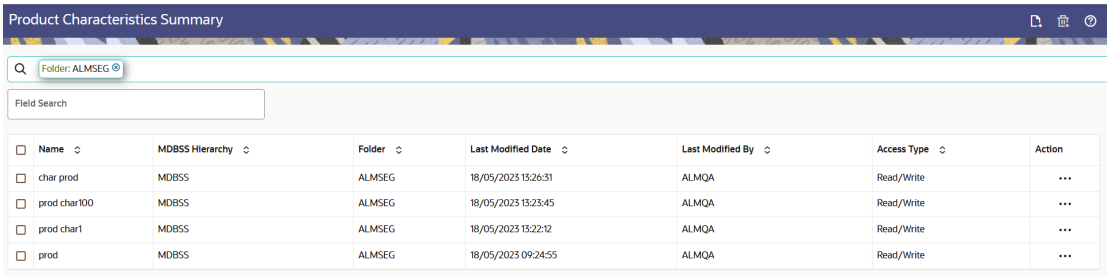
Table 3-26 Product Characteristic Rule – Fields and Descriptions

Column	Description
Name	Displays the Product Characteristic Rule's Short Name. Mouse over the Name field to view the Code and Description details.
MDBSS Hierarchy	Displays the MDBSS Hierarchy of the Product Characteristic Rule.
Folder	Displays the Name of the user who created the Product Characteristic Rule.

Table 3-26 (Cont.) Product Characteristic Rule – Fields and Descriptions

Column	Description
Last Modified By	Displays the Name of the user who last modified the Product Characteristic Rule.
Last Modified Date	Displays the Date and Time when Product Characteristic Rule was modified last.
Access Type	Displays the Access Type of the Product Characteristic Rule as Read-Only or Read/ write.
Action	Displays the list of actions that can be performed on the Product Characteristic Rule. For more information, see Product Characteristic Rule – Icons and Descriptions .

Figure 3-31 Product Characteristics Summary Page



The Action column on the Product Characteristics Summary Page offers several actions that allow you to perform different functions. The following actions are available for the Product Characteristics Rule.

Table 3-27 Product Characteristic – Icons and Descriptions

Fields	Description
Add	Click Add icon to build a new Product Characteristic Rule.
Multiple Delete	Select one or more rules in the table and then click the Delete All icon at the top right of the Summary Page to delete more than one rule at the same time.
View/Edit	Click on the Action icon against the Rule Name and select View/Edit to view or edit the contents of a Product Characteristic Rule in Read/Write format. Depending on User Privileges the rule will open in either View or Edit Mode.
Save As	Click on the Action icon against the Product Characteristic Name and select Save As to create a copy of an existing Product Characteristic Rule.
Delete	Click on the Action icon against the Product Characteristic Name and select Delete to delete an existing Product Characteristic Rule.

Table 3-27 (Cont.) Product Characteristic – Icons and Descriptions

Fields	Description
Dependency Check	Click on the Action icon against the Product Characteristic Name and select Dependency Check to view objects where selected Product Characteristic Rule is used.

3.10.2 Search Product Characteristic Rule

Search for a Product Characteristic Rule to perform any of the following tasks:

- View
- Edit
- Copy
- Delete

Prerequisites

Predefined Product Characteristic Rules

Procedure

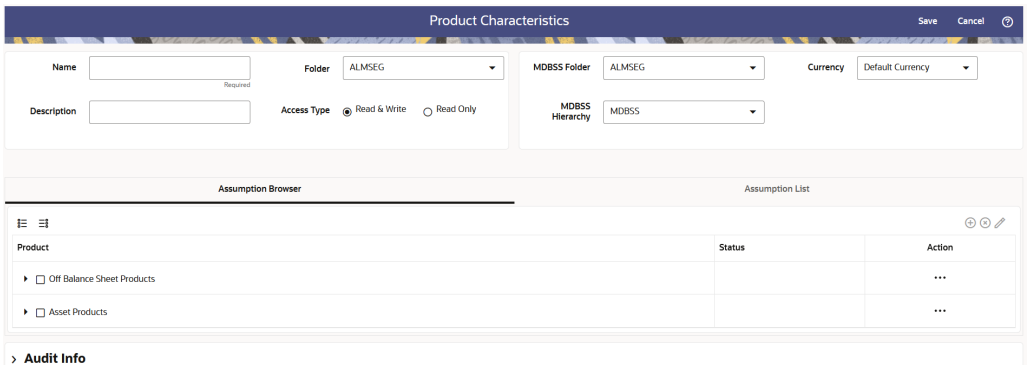
To search the Product Characteristic Rules, follow these steps:

- Navigate to the Product Characteristic Rule Summary Page.
- Enter the code, name, description, hierarchy, or folder of the Rule in Search Criteria.
- Click the **Search** .
  Only Rules that match the search criteria are displayed.

3.10.3 Create Product Characteristic Rules

You create a Product Characteristics Rule to assign attributes to the products.

Figure 3-32 Product Characteristics Page



To create a new Product Characteristics Rule, follow these steps:

- Click **Add** icon from the top of the **Product Characteristics Summary** Page.
- Enter the following Details.

Table 3-28 Create Product Characteristics Rule

Fields	Description
Name	Enter the name of the Product Characteristics Rule.
Description	Enter the description of the Product Characteristics Rule. This is an optional field.
Folder	Select the Folder where the Product Characteristics Rule needs to be saved.
Access Type	Select the Access Type as Read-Only or Read/ Write.
MDBSS Folder	Select the MDBSS folder
Currency	Select the currency for Product Characteristics Rule
MDBSS Hierarchy	Select the MDBSS hierarchy

- Select a **MDBSS Hierarchy**. You can define methodologies at any level of the MDBSS. The Hierarchical Relationship between the nodes allows the inheritance of methodologies from Parent nodes to Child nodes.
- Select MDBSS node(s) from **Assumption Browser**.
- Click **Add** from **Assumption Browser** section.

Note:

During provisioning in case the PC admin role is missed in the alm admin group and user not able to save the product characteristics. then follow the below steps to map the role

1. Access the admin console from the ALMCS application
2. Navigate to **Identity Management**
3. Click the **Groups**
4. Select ALM Administrator User Group
5. Navigate to mapped roles
6. Click the **New Mapping**
7. Select the PC admin role
8. Click **Map**.
9. After Mapping authorize the mapping.

3.10.3.1 Using Assumptions

This section describes about using the assumptions.

Assumption Browser

From the **Assumption Browser** window, select the product (or products).

1. Select the **Add Assumption**.
2. Type a value for each mandatory field. Mandatory input fields are marked with a red asterisk.

You can optionally select one of the seeded Product Profile templates or a user-defined Product Profile to prepopulate the appropriate **Product Characteristic** fields.

Assumption List Tab

The A**ssumption List** tab is present next to the **Assumption Browser** in all the windows which have the **Assumption Browser.** This tab provides the following five search fields:

- Dimension Member Code
- Dimension Member Name
- Dimension Member Description
- Dimension Member Status
- Is Leaf

Dimension Member Code, Name, and **Description** provide filter criteria for search such as Contains, Starts With, Ends With, and Exactly Matches.

Dimension Member Status is a drop-down list containing values such as, Defined, Not Defined, Inherited, Defined and Inherited, and All.

Is Leaf is a check box that can be toggled.

The search icon initiates the search on the **Assumption Browser** based on the filter criteria provided in the above-mentioned fields. **Reset** restores the default search criteria.

The search results will flatten the hierarchy and display all of the products that meet the input criteria. Use the pagination widget to display the number of products per page (up to a maximum of 99). You can proceed to edit or create new Rules in the assumption list tab.

3.10.4 Defining Product Characteristic Rules

The definition of a Product Characteristics Rule is part of the **Create** or **Edit** Product Characteristics Rule process. When you click **Save** in the Create Product Characteristics Rule process, the Rule is saved, and the **Product Characteristics Rule** summary page is displayed. However, Product Characteristic assumptions have not yet been defined in the products at this point. Start defining the Product Characteristic assumptions for MDBSS before clicking **Save**.

Defining Product Characteristics Using Node Level Assumptions

Node Level Assumptions allow you to define assumptions at any level of the MDBSS Hierarchy. The MDBSS supports a hierarchical representation of the chart of accounts to take advantage of the parent-child relationships defined for the various nodes of the MDBSS hierarchies when defining Rules. Children of parent nodes on a hierarchy automatically inherit the assumptions defined for the parent nodes. However, assumptions explicitly defined for a child take precedence over those at the parent level.

Prerequisites

Performing basic steps for creating or editing a Product Characteristics Rule.

To define a Product Characteristic Rule, follow these steps:

1. From the **Assumption Browser** window, select the product (or products) and the currency to define the Product Characteristics. Click **Add +** icon to launch the **Product Characteristic Details** window.
2. Select the **Currency**.

> **Note:**
>
> To define assumptions for all currencies with the selected product, select **Default Currency**.

3. From the **Assumption Browser**, select the Product or Products.
4. Click the **Add Assumption**.
5. From the **File** menu, select **Save**.

> **Note:**
>
> Using the default currency to setup assumptions can save data input time. At runtime, the calculation engine uses assumptions explicitly defined for a product currency combination. If assumptions are not defined for a currency, the engine uses the assumptions defined for the product and the default currency. If the assumptions are the same across some or all currencies for a specific product, you can input assumptions for the default currency. Be careful when using this option on UI where an Interest Rate Code is a required input. In most cases, you will want to use a currency-specific interest rate curves for pricing instruments within each specific base currency. The Default Currency option, if used will apply a selected Interest Rate Code across all currencies.

6. The **Product Characteristic Details** window has the following three input tabs:
   - Core Attributes
   - Payment Attributes
   - Rate Attributes
   - Other Attributes

3.10.4.1 Core Attributes

This section describes the new business fields used in the **Core Attributes** tab of the Product Characteristics Rule.

Figure 3-33 Core Attributes Tab to Define the Product Characteristic Rule

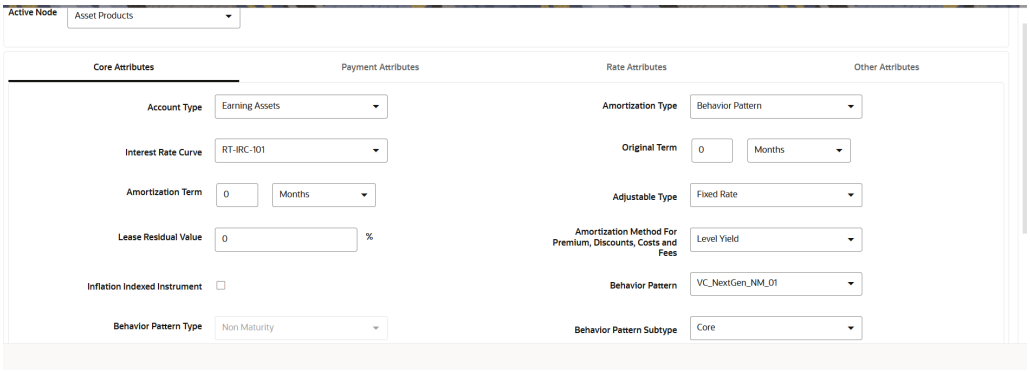


Table 3-29 Fields to add the Core Attributes for Product Characteristic Rule and their Descriptions

Field	Description
Account Type	Select the account type.
Amortization Type	Method of amortizing principal and interest. The choices consist of all standard OFSAA codes and all additional user-defined codes created through the Payment Pattern and Behavior Pattern interfaces, as follows: Conventional Fixed Conventional Adjustable Balloon Payment Adjustable Negative Amortization Non-Amortizing Rule of 78's Level Principal Payment Pattern Behavior Pattern Lease
Interest Rate Curve	Defines the pricing index to which the instrument interest rate is contractually tied. The interest rate codes that appear as a selection option depending on the choice of currency. The interest rate code list is restricted to codes that have the selected currency as the Reference Currency. If the default currency is chosen, all interest rate codes are available as a selection.
Original Term	The contractual term at origination date in units (days, months, or years).
Amortization Term	Term upon which amortization is based in units (days, months, years). This field is not editable if the Derivative Type is selected as FX Contract and subtype is selected as Spot or Forward

Table 3-29 (Cont.) Fields to add the Core Attributes for Product Characteristic Rule and their Descriptions

Field	Description
Adjustable Type	Determines the repricing characteristics of the new business record. The choices consist of all standard OFSAA codes plus the Repricing Pattern. The standard OFSAA codes are as follows: Fixed-Rate Floating Rate Other Adjustable
Lease Residual Value	For Lease instruments, this value specifies the residual amount as a percent of the par balance.
Amortization Method for Premiums, Discounts, Costs and Fees	Determines the method used for amortizing premiums, discounts, or fees. The available codes are: Level Yield Straight Line
Behavior Pattern Type	Lists all user-defined behavior patterns created through the user interface.
Behavior Pattern Subtype	Lists all user-defined behavior patterns created through the user interface.
Payment Pattern	Lists all user-defined payment patterns defined through the user interface.
Repricing Pattern	Lists all user-defined reprice patterns created through the user interface.
Original Deferred Amortization Percent	The initial deferred balance expressed as a percent of original par balance.

3.10.4.2 Payment Attributes

This section describes the new business fields used in the **Payment Attributes** tab of the Product Characteristics Rule.

Figure 3-34 Payment Attributes Tab to Define the Product Characteristic Rule

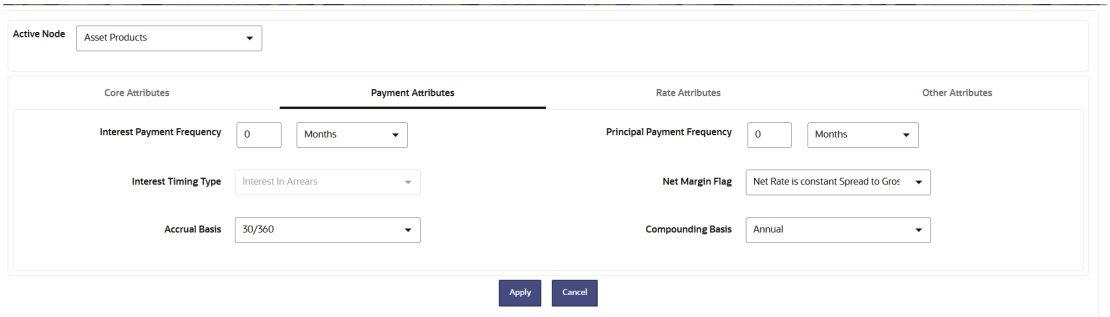


Table 3-30 Fields to add the Payment Attributes for Product Characteristic Rule and their Descriptions

Field	Description
Interest Payment Frequency	Frequency of Interest payment .
Principal Payment Frequency	Frequency of Principal payment.
Interest Timing Type	Determines whether interest is calculated in arrears or advance or if the rate is set in arrears. There are three interest types: Interest in Arrears Interest in Advance Set in Arrears For conventional amortization products, interest in arrears is the only valid choice.
Net Margin Flag	The setting of the net margin flag affects the calculation of the Net Rate. The two settings are: Floating Net Rate - the net rate reprices in conjunction with the gross rate, at a value net of fees. Fixed Net Rate - the net rate equals a fixed fee equal to the net margin.
Accrual Basis	The basis on which the interest accrual on an account is calculated. The choices are as follows: 30/360 Actual/360 Actual/Actual 30/365 30/Actual Actual/365 Business/252 *
Compounding Basis	Determines the number of compounding periods per payment period. The choices are as follows: Daily Monthly Quarterly Semi-Annual Yearly Continuous Simple At Maturity

> **Note:**
>
> * A Holiday Calendar selection is required if **Business/252 Accrual Basis** is selected. **Business/252 Accrual Basis** is only applicable to the recalculate option of the Holiday Calendar Rule. If the user selects the shift payment dates, the payment will still be recalculated for the non-holiday or weekend date.

3.10.4.3 Rate Attributes

This section describes the new business fields used in the **Rate Attributes** secondary tab of the Product Characteristics Rule.

Figure 3-35 Rate Attributes Tab to define the Product Characteristic Rule

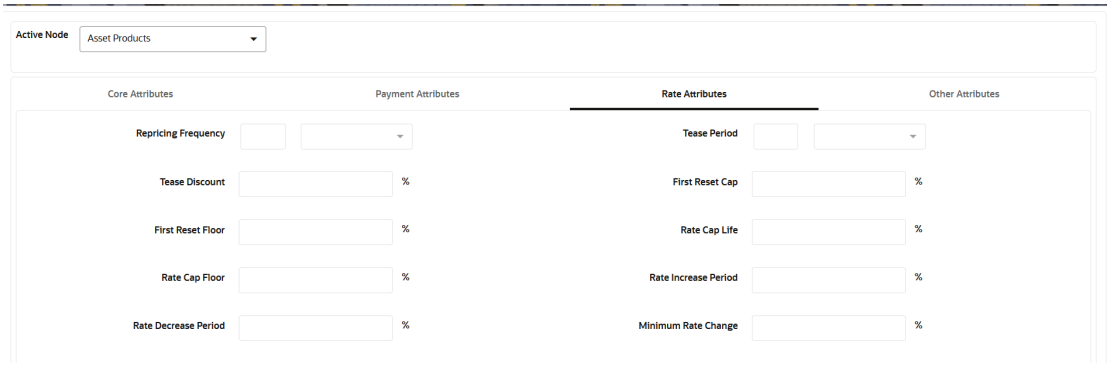


Table 3-31 Fields to add the Rate Attributes for Product Characteristic Rule and their Descriptions

Field	Description
Repricing Frequency	Contractual frequency of rate adjustment.
Tease Period	The tease period is used to determine the length of the tease period.
Tease Discount	The tease discount is used in conjunction with the original rate to calculate the tease rate. The tease rate is the original rate less than the tease discount.

Table 3-31 (Cont.) Fields to add the Rate Attributes for Product Characteristic Rule and their Descriptions

Field	Description
First Reset Cap	This indicates the maximum delta between the initial rate and the first reset for mortgage instruments that have a tease period. This rate will be applicable at the tease end period, before the first reset. After this, the periodic and lifetime cap value will be applied. The value of this field will be automatically populated from the **Product Profile** window if the product is mapped to Product Profile and value is defined for First Reset Cap. For example: Current Rate = 3.5% (from the instrument record) Margin = 0.3 % First Reset Cap = 0.5% (from the instrument record) First Reset Floor = 0.1% (from the instrument record) Scenario 1: If New Forecasted Rate = 5.1% (Forecast Rates Assumption) The fully indexed rate (after applying minimum rate change, rounding effects) is higher than the (Current Rate + First Reset Cap). So, the new rate assigned will be 3.5% + 0.5% = 4.0%
First Reset Floor	This is the initial minimum value for mortgage instruments that have a tease period. This floor rate will be applicable at the tease end period, before the first reset. After this, the periodic and lifetime floor value will be applied. The value of this field will be automatically populated from the **Product Profile** window if the product is mapped to Product Profile and value is defined for First Reset Floor.
Rate Cap Life	The maximum rate for the life of the instrument.
Rate Cap Floor	The minimum rate for the life of the instrument.
Rate Increase Period	The maximum interest rate increase allowed during the cycle on an Adjustable Rate instrument.
Rate Decrease Period	The maximum amount rate can decrease during the repricing period of an Adjustable Rate instrument.
Rate Set Lag	Period by which the rate lookup lags the repricing event date.
Minimum Rate Change	The minimum required change in rate on a repricing date.
Rate Change Rounding Factor	Percent to which the rate change on an adjustable instrument is rounded.

Table 3-31 (Cont.) Fields to add the Rate Attributes for Product Characteristic Rule and their Descriptions

Field	Description
Rate Change Rounding Type	The method used for rounding of interest rate codes. The choices are as follows: • No Rounding • Truncate • Round Up • Round Down • Round Nearest

3.10.4.4 Other Attributes

The assumptions made on the **Other Attributes** tab apply to both current position data and new business balances.

The common Product Characteristic fields listed on the **Other Attributes** tab are as follows.

Figure 3-36 Other Attributes Tab to Define the Product Characteristic Rule

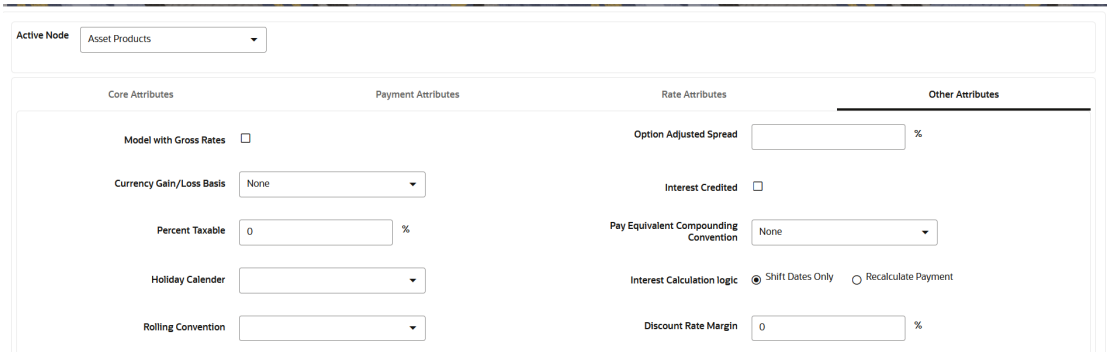


Table 3-32 Fields to define the attributes for Product Characteristic Rule and their Descriptions

Fields	Behavior
Model with Gross Rates	If the institution has outsourced loan serving rights for some of the assets (most typically mortgages), the rates paid by customers on those assets (gross rates) will be greater than the rates received by the bank (net rates). For these instruments, both a net and gross rate will be calculated within the cash flow engine and both gross and net rate financial elements will be output. The gross rate is used for prepayment and amortization calculations. The net rate is used for income simulation and the calculation of retained earnings in the auto-balancing process.

Table 3-32 (Cont.) Fields to define the attributes for Product Characteristic Rule and their Descriptions

Fields	Behavior
Option Adjusted Spread	The Option Adjusted Spread is used during stochastic processing only. It is an adjustment to the stochastic discount factor used in calculating market value and value at risk. Valid values for this spread are between -5.000% and 5.000%, but the value of less than 2.00% is recommended for the best results. For more information about the calculation of discount factors, see the Oracle Financial Services Cash Flow Engine ReferenceGuide.
Currency Gain or Loss Basis	Currency Gain or Loss Basis determines how exchange rate fluctuations are reflected in financial element results for each product and currency combination. The choices are: Temporal Historical Basis Current Rate For more information on the cash flow calculations associated with currency gain or loss recognition techniques, see the Oracle Financial Services Cash Flow Engine Reference.
Interest Credited	This option allows interest payments to be capitalized as principal on simple or non-amortizing instruments.
Percent Taxable	Percent Taxable specifies the percent of income or expense that is subject to the tax rates defined in the active Time Bucket Rule. This is used with the Auto-balancing option in the ALM Process Rules. Percent taxable must be set up for each product and reporting currency or product and default currency combination.
Pay Equivalent Compounding Convention	In most cases, interest rates are not adjusted for the differences in pay-basis between the quote basis of the pricing index and the payment frequency of the account to which the index is assigned. Some instruments, notably Canadian Mortgages, follow a convention that the interest rates are adjusted. In this case, the Pay-Equivalent Compounding Convention must be set to Semi-Annual Quoting Convention. For other accounts, the convention must be set to Do Not Adjust.
Holiday Calendar	The default value is Blank and is Enabled. This drop-down list contains the list of all holiday calendar definitions defined in the **Holiday Calendar** window.
Interest Calculation Logic	There are two options: Shift Dates Only Recalculate Payment

Table 3-32 (Cont.) Fields to define the attributes for Product Characteristic Rule and their Descriptions

Fields	Behavior
Rolling Convention	The default value is Unadjusted and is Enabled, only when Holiday Calendar is selected in the preceding field. This drop-down list contains the following values: Actual or Un-adjusted Payment on an actual day, even if it is a non-business day. Following business day The payment date is rolled to the next business day. Modified following business day* The payment date is rolled to the next business day unless doing so would cause the payment to be in the next calendar month, in which case the payment date is rolled to the previous business day. Previous business day The payment date is rolled to the previous business day. Modified previous business day* The payment date is rolled to the previous business day unless doing so would cause the payment to be in the previous calendar month, in which case the payment date is rolled to the next business day. *Many institutions have month-end accounting procedures that necessitate this.
Discount Rate Margin	
Discount Rate Margin Type	Rate Spread Price of instrument paer 100

Note:

The Holiday Calendar attributes can be applied directly to the instrument records for an existing business. If they are not applied to the records, the engine will use the definition from the **Other Attributes** tab to apply **Holiday Calendar** for existing and New Business.

3.10.5 View and Edit Product Characteristic Rule

You can view existing Product Characteristic Rules, and you can edit existing Rules, provided you have Read/Write privileges.

To view and edit a Product Characteristic Rule, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Assumptions**, and then select **Product Characteristics**.
2. Search for a Rule. For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the Rule Name and select **View/Edit** to open the rule you want to update.
4. Update the Rule details.
5. Click **Apply** or **Save**, depending on the Rule type.

3.10.6 Copy Product Characteristics Rule

You can copy rules to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes.

To copy a Product Characteristic rule, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Assumptions**, and then select **Product Characteristics**.
2. Search for a Rule.
   For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Rule Name and select **Save As** to duplicate the rule.
4. Select a folder where you want to save the Rule Copy.
5. Enter a unique name for the new Rule.
6. (Optional) Enter a brief description of the Rule.
7. Select the access type.
8. Click **Save**.

3.10.7 Delete Product Characteristic Rule

You can delete Rules that are no longer required.

> **Note:**
>
> A Rule cannot be retrieved after deletion.
>
> Restrictions on deleting Rules are:
>
> - You cannot delete Rules if you have only Read privileges. Only users with Read/Write privileges and Rule owners can delete Rules.
> - You cannot delete a Rule that has a dependency.

To delete a Product Characteristic rule, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Assumptions**, and then select **Product Characteristics**.
2. Search for a Rule. For more information, see the Searching for Rules section.

3. Click on the **Action** icon against the Rule Name and select **Delete**.

3.10.8 Copying Assumptions Across Currencies and Products

This functionality provides the option to copy, in total or selectively, the product assumptions contained within the ALM assumption Rules from one currency to another currency or a set of currencies, or from one product to another product or set of products.

Copy of assumptions enhances the usability of Oracle Asset Liability Management in a multi-currency environment. For example, if you have 10 currencies enabled in the application and you must input only one set of assumptions, then copy those assumptions across all enabled currencies, instead of having to input 10 full sets, thereby saving a significant amount of input time.

This functionality also reduces the risk associated with data input errors as you must audit inputs for a set of assumptions before executing the copy procedure. The Copy Across Currencies process requires users to select a replacement yield curve for each target currency. These currency-specific IRCs replace the IRC selection made for each product in the source currency selection set. It is possible to edit the target assumptions after the initial copy processes have been completed.

Prerequisite

Define ALM Rule related product assumptions

Overview of Product Characteristic Rules

Overview of Discount Method Rules

Overview of Prepayment Rules

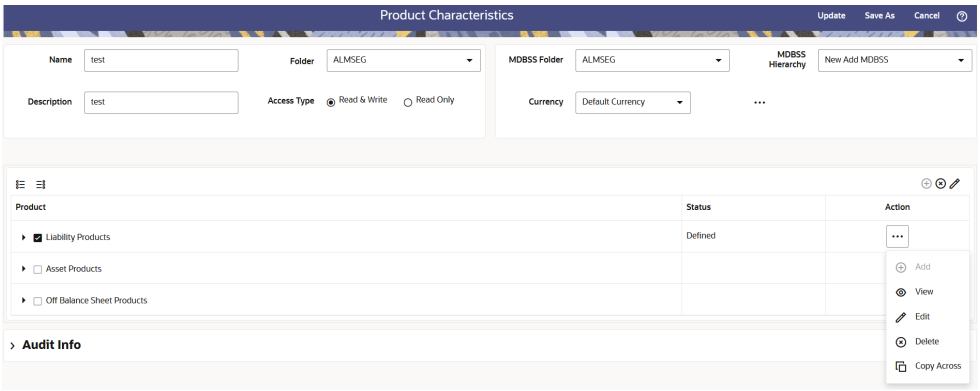
Creating a Forecast Balance Rule

Overview of Pricing Margin Rules

To copy the assumptions across Currencies and Products, follow these steps:

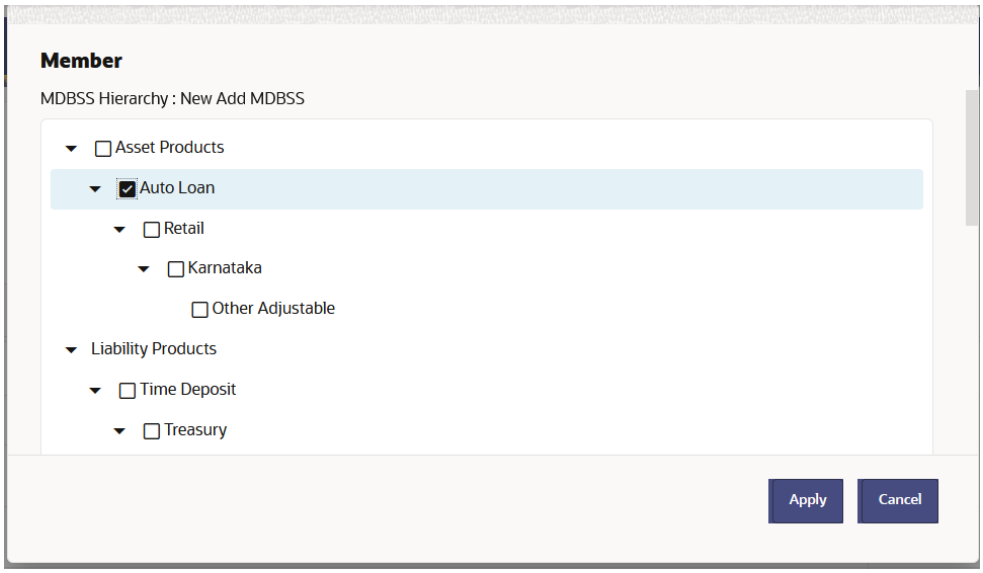
1. Navigate to the appropriate ALM Business Rule **Assumption Browser**.
2. Define assumptions for the source currency product set.
3. **Save** the assumptions.
4. Select the defined product assumptions using the check boxes corresponding to each product (or Node on the hierarchy) that you want to include in the copy process.
5. Click on the Action icon against the Product Name and select **Copy Across**.

Figure 3-37 Copy Across



6. On the **Copy Across Details** page, select the listed currencies either individually using the corresponding check boxes or in total using **Select All**.

Figure 3-38 Copy Across Details page



Specify an Interest Rate Code for each selected currency. This is necessary because each interest rate code is specific to a single currency. When copying product assumptions across currencies, you must define the interest rate code for each target currency to replace the Interest Rate Code used for the source currency assumptions.

- While defining a Rule if the Interest Rate Code is required, then **Copy Across (currency)** window will have an option to select the Interest Rate Code. For example, **Product Characteristic, Discount Methods, and Prepayments** windows, the **Copy Across (Currency)** window will have an option for IRC selection.
- While defining a Rule if the Interest Rate Code selection is not required, then **Copy Across (Currency)** window will have the Interest Rate Code selection option disabled. For example, **Forecast Balances** and **Pricing Margin**

windows, the **Copy Across (Currency)** window will not have an option for IRC selection.

- If a Rule does not require the Interest Rate Code selection and RDP selection is required (for, **Forecast Balances** and **Pricing Margin**), then **Copy Across (Currency)** will not have an option to select the IRC.

7. Click **Apply** to initiate the copy process and to return to the **Assumption Browser** page.
8. Review the results of the copy process from the **Assumption Browser** window by selecting a different currency and following the usual navigation to view or edit assumptions. The application displays new assumptions for each product included in the source selection. The copy process replaces pre-existing assumptions for any product-currency combination that is included in the target selection.
9. Click **Save** on the **Assumption Browser** window to save the assumptions to the database.

3.11 Holiday Calendar

This section discusses the procedure to create a Holiday Calendar and generate a list of the weekend and holiday dates. Individual Cloud Service may consume the Holiday Calendar events in different ways.

A Holiday is a day designated as having special significance for which individuals, a government, or some religious groups have deemed that observance is warranted and thus no business is carried on this day. The Holiday Calendar Code can range from 1 to 99999.

Topics:

- Holiday Calendar Summary Page
- Search a Holiday Calendar
- Create Holiday Calendar
- Holiday Exceptions

3.11.1 Holiday Calendar Summary Page

This page holds all Holiday Calendars and related functionality. You can navigate to other pages relating to the Holiday Calendar from this page.

The Holiday Calendar Summary Page displays the following columns.

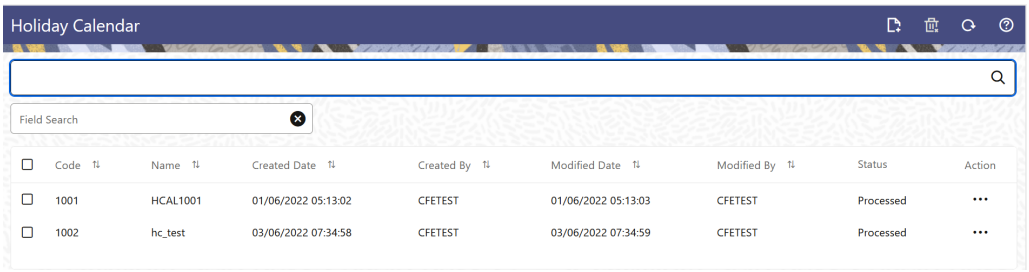
Table 3-33 Holiday Calendar Rule – Fields and Descriptions

Column	Description
Code	Displays the code of Holiday Calendar
Name	Displays the Holiday Calendar's Short Name
Status	Displays status of Holiday List generation
Created By	Displays the Name of the user who created the Holiday Calendar
Created Date	Displays the Date when Holiday Calendar was created.
Last Modified By	Displays the Name of the user who last modified the Holiday Calendar

Table 3-33 (Cont.) Holiday Calendar Rule – Fields and Descriptions

Column	Description
Last Modified Date	Displays the Date and Time when Holiday Calendar was modified last.
Action	Displays the list of actions that can be performed on the Holiday Calendar. For more information, see Holiday Calendar – Icons and Descriptions.

Figure 3-39 Holiday Calendar Summary page



The **Action** column on Holiday Calendar Summary Page offers several actions that allow you to perform different functions. The following actions are available for the Holiday Calendar Summary Page.

Table 3-34 Holiday Calendar Rule – Icons and Descriptions

Fields	Description
Add	Click Add icon to build a new Holiday Calendar Rule.
Multiple Delete	Select one or more rules in the summary page and then click the Delete All icon at the top right of the Summary Page to delete more than one rule at the same time.
Refresh	Click Refresh icon to refresh the Summary Page.
Help	Click Help icon to view the Holiday Calendar Rule Help.
View	Click on the **Action** icon against the Holiday Calendar Rule Name and select View to view the contents of a Holiday Calendar in Read/ Write format.
Edit	Click on the **Action** icon against the Holiday Calendar Rule Name and select Edit to edit the contents of a Holiday Calendar in Read/ Write format.
Save As	Click on the **Action** icon against the Holiday Calendar Rule Name and select Save As to create a copy of an existing Holiday Calendar.

Table 3-34 (Cont.) Holiday Calendar Rule – Icons and Descriptions

Fields	Description
Delete	Click on the **Action** icon against the Holiday Calendar Rule Name and select Delete to delete an existing Holiday Calendar.

3.11.2 Search Holiday Calendar

Search for a Holiday Calendar to perform any of the following tasks:

- View
- Edit
- Copy
- Delete

Prerequisites

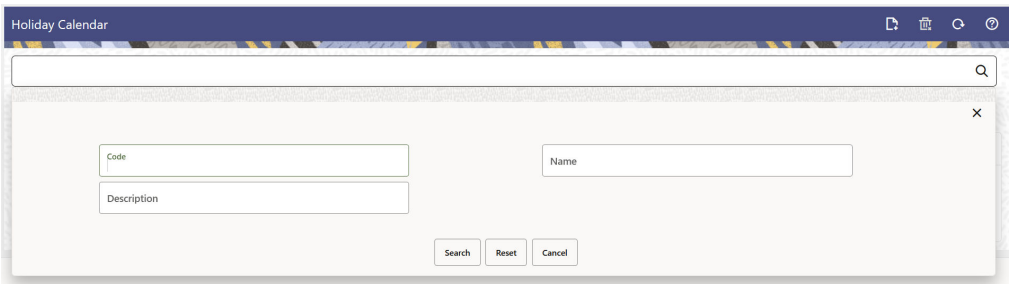
Predefined Holiday Calendar Rule

Procedure

To search for a new Holiday Calendar rule, follow these steps:

- Navigate to the **Holiday Calendar Summary** Page.
  - Click **Search** icon in the Field Search section. Enter the Code, Name, and Description of the Holiday Calendar. You can specify one or multiple search criteria in this section.

Figure 3-40 Search Holiday Calendar

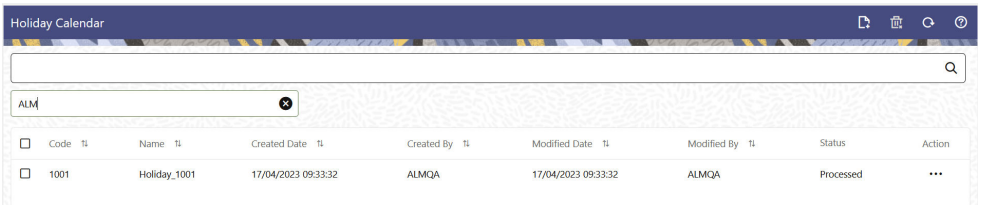


  - Click **Search** .

  or

- Enter the search data in the **Search** field.

Figure 3-41 Search Holiday Calendar



Only Holiday Calendars that match the search criteria are displayed.

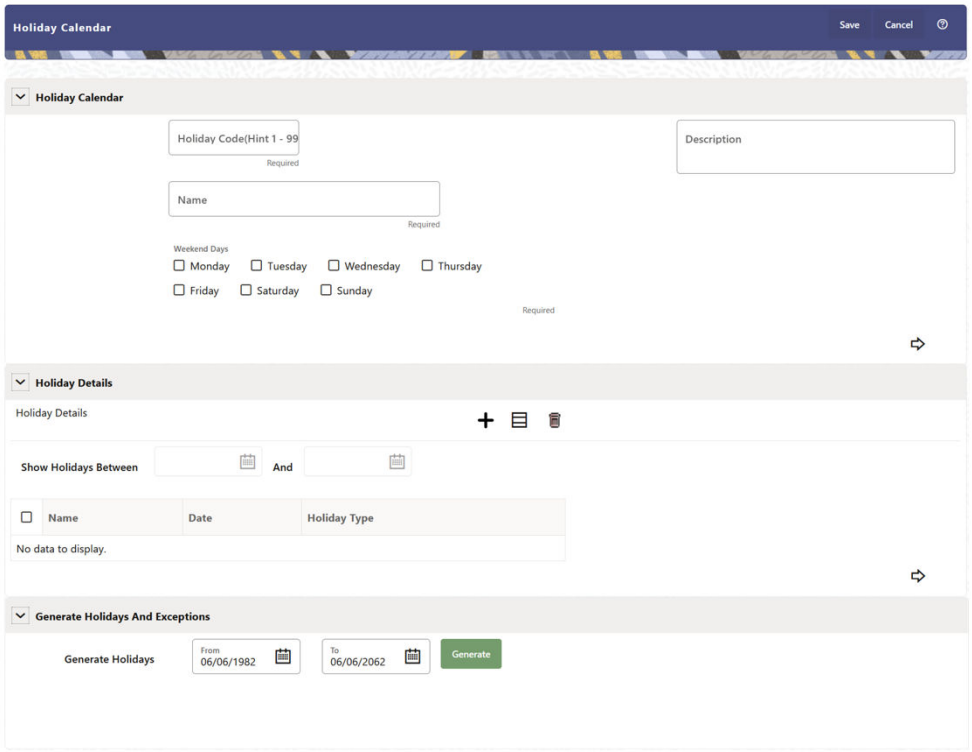
3.11.3 Create a Holiday Calendar

You create Holiday Calendars to capture holidays for a given date range for any organization. It is possible to create and use multiple Holiday Calendars.

To create a new Holiday Calendar Rule, follow these steps:

1. Navigate to the Holiday Calendar Summary Page.
2. Click Add icon. The Holiday Calendar Details Page is displayed. This page is divided into following sections:
   - Holiday Calendar
   - Holiday Details
   - Generate Holidays And Exceptions

Figure 3-42 Holiday Calander Details Page



3. Enter details in above sections and Click **Save**.

Holiday Calendar section

1. Navigate to Holiday Calendar section.
2. Enter the following details:
   - **Holiday Code:** Enter a code value for the new Holiday Calendar. The code is a Numeric Identifier for the Holiday Calendar. The Code Value must be a number between 1 and 99999. The Code Value you assign to the new Holiday Calendar must be unique.
   - **Name:** Enter the name and a brief description for the Holiday Calendar. The name you assign to the Holiday Calendar must be unique. The name can hold a maximum of 30 characters.
   - **Description:** Enter the description of Holiday Calendar Rule.
   - **Weekend Days:** In the Holiday Weekend Days checkboxes, select not more than two weekend days.
3. Click **Next** to navigate to **Holiday Details** section.

Holiday Details section

1. Enter the following details in Holiday Details Section:
2. Click **Add** icon. Define the Holiday details for any period within the Holiday range. Enter the following details in Holiday Calendar Grid:
   - **Name:** Name of Holiday
   - **Date:** The date of Holiday
   - **Holiday Type:** Type of Holiday. Two types of holidays can be defined: Fixed and Moving.
     A Fixed Holiday is deemed as a Holiday for every year in the Holiday Period, for that particular day.

     Example

     25th December – Christmas, is a fixed Holiday.

> **Note:**
>
> To define a Fixed Holiday, input the Holiday Date for the first occurrence in the date range. For example, if your Date Range runs from 01-JAN-2000 to 31-DEC-2050, you should input the fixed holiday, Christmas, as 25-DEC-2000. The Holiday Calendar Procedure will populate all subsequent 25-DEC entries in the holiday list table (FSI_HOLIDAY_LIST). A HOLIDAY_TYPE code = 0 is a Fixed type holiday, code = 1 is a Moving type Holiday, and code = 2 is a weekend. The Holiday Calendar Procedure will also ensure that Holiday and Weekend entries are not duplicated. For example, if weekends are defined as Saturday/Sunday and Christmas falls on a weekend day, there will be only one entry in the FSI_HOLIDAY_LIST table. The PREVIOUS_WORKINGDAY and NEXT_WORKINGDAY fields designate the valid prior and following working days, respectively.
>
> A Moving Holiday is deemed as a Holiday only for that particular date and year, and not for every year in the Holiday Period. All occurrences of a Moving Holiday must be input manually.
>
> Example
>
> 10th April 2020 is a Moving Holiday for Good Friday.

- You can add more Holiday Periods using **Add** icon. Add Multiple icon allows you to add multiple Holiday Periods.
- Click **Next** to navigate to **Generate Holidays And Exceptions** section.

Generate Holidays And Exceptions Section

This section is used to execute a Holiday Calendar Definition to generate the Calendar Dates listing the various types of holidays for a given Holiday Period.

1. Enter the following details in Generate Holidays And Exceptions Section:
   - **Generate Holidays:** Enter the Holiday Period in Generate Holidays Section. The Holiday Period can be defined for a range of up to 40 years less than the Current Date and 40 years greater than the Current Date, totally spanning a maximum of 80 years.
2. Holiday List for Holiday ID #1 generated successfully message appears (where #1 is the Holiday Calendar Code).
3. The status of a Holiday Calendar where Holiday Dates have been generated displays as Processed in the Status column in the Summary Page.

In case you do not want to Generate Calendar Dates immediately, you can select that particular Holiday Calendar anytime later from the Summary Page with its status defined, and then click the Generate button to execute the selected Holiday Calendar.

The generated holiday list is no longer valid if:

- There is a change in the definition of the Holiday Calendar.
- There is any update or modification to the Holiday Exceptions defined for that Holiday Calendar.

In such a case, you will get a message “This Holiday Calendar has been modified, Please generate the holiday list again.” and the Holiday Calendar state will be changed to defined until the Holiday list is regenerated with the new definition.

3.11.4 Edit Holiday Calendar

You can view existing Holiday Calendar Rule, and edit existing Holiday Calendar Rules, provided you have Read/Write privileges.

To view and edit a Holiday Calendar Rule, follow these steps:

1. Navigate to **Reference Data** and select **Holiday Calendar**.
2. Search for a Holiday Calendar.
   For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the Holiday Calendar rule and select View or Edit to open the Holiday Calendar you want to update.
4. Update the rule details.
5. Click **Apply** or **Save**, depending on the Rule Type.

3.11.5 View Holiday Calendar List

To view list of Holiday that have been generated, follow these steps:

1. Navigate to Reference Data and select Holiday Calendar .
2. Search for a Holiday Calendar.
3. Click on the **Action** icon against the Holiday Calendar Rule Name and select View to open the Holiday Calendar for which you want to see the generated list
4. Browse to Generate Holidays And Exceptions Section.
5. Click View List icon on RHS.

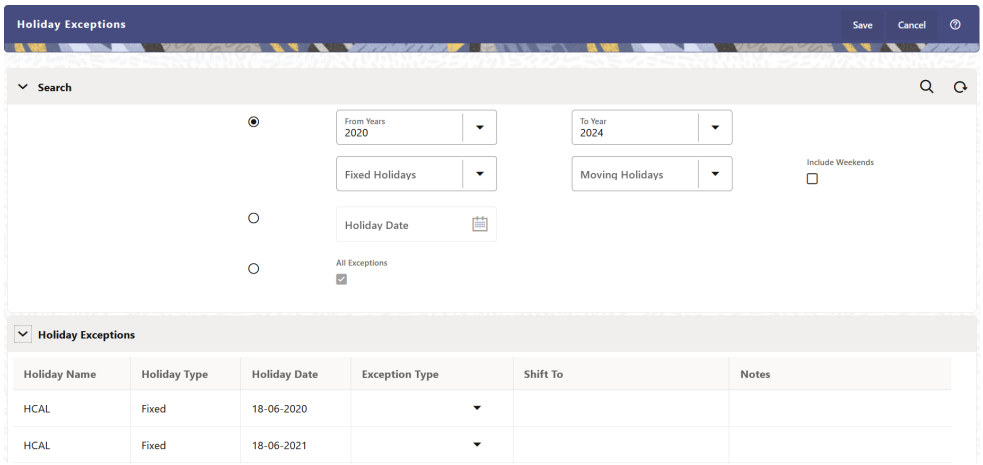
This opens a new window where Holiday Dates for selected month and year can be seen.

3.11.6 Holiday Exceptions

You can specify exceptions to Holidays. As a prerequisite, a Holiday Calendar should have been properly defined and the status of the Holiday Calendar on the Summary Page should be Processed. Generating the Holiday list will populate the Holidays (weekends, fixed, and moving) along with the working days. Then, the Exceptions button is enabled. Any changes in the Holiday Definition will disable the Exceptions Button. You must generate the Holiday List again to define or view the exceptions.

1. Click **Exceptions** in the **Generate Holidays And Exceptions** section. The **Holiday Exceptions** window opens.

Figure 3-43 Holiday Exceptions Page



2. The search section in the **Holiday Exceptions** window has the following fields:
   - **From and To:** Denotes the range of years which is a subset out of the Holiday List generated, for which exceptions are required to be defined.
   - **Fixed Holidays:** You can filter the list of holidays by the type of Fixed Holidays.
   - **Moving Holidays:** You can filter the list of holidays by the type of Moving Holidays.
   - **Holiday Date:** For a particular known Holiday Date, exceptions can be defined.
   - **All Exceptions:** This check box when selected lists all the exceptions, if already defined, for the holidays within the From, To Date Range.
3. The search result gives the list of all holidays based on the selection of the above search criteria fields.
   - In the **Holiday Exceptions** section, there are two types of exceptions that can be defined: Not a Holiday and Shift to.
     - Any Holiday can be marked as not a Holiday, in which case that day is removed from the Holiday List. If you select **Not a Holiday** from the **Exception Type** drop-down, then the Shift to date field is disabled.
     - Spring earlier considered as a Holiday in the Holiday Calendar can be marked as Not a Holiday in the Holiday Exceptions Window. You can write your comments or remarks in the Notes next to the **Exception Type** drop-down list.
   - Any Holiday can be shifted to another day, in which case the earlier declared Holiday is removed from the Holiday List, while the shifted today is included as a Holiday.
   - Once the Holiday Calendar Definition is saved, its status in the Holiday Calendar Summary Page is marked as Defined.

3.12 Behavior Patterns

PBSM (Profitability and Balance Sheet Management) Cloud Service's User Defined Behavior Patterns allow you to define Principal Amortization Schedules for Non-

Maturity Products in your portfolio. You can utilize a Behavior Pattern to generate Cash Flows by entering the Amortization Type Code as “Behavior Pattern” along with the actual Behavior Pattern Code for the relevant Instrument Records.

The procedure for working with and managing Behavior Patterns includes the following steps:

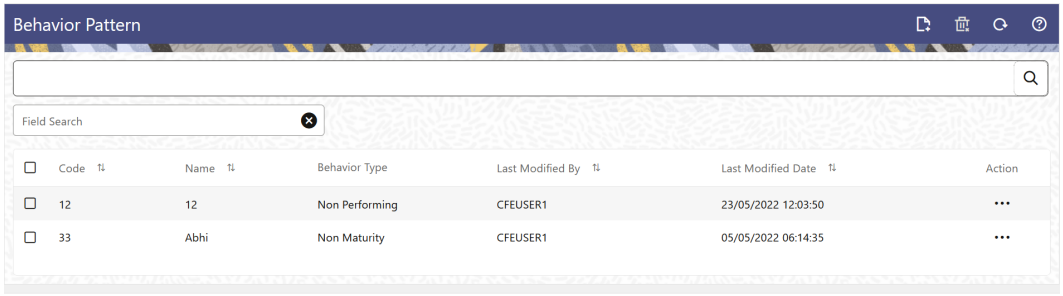
- Searching for Behavior Pattern
- Creating a Behavior Pattern
- Viewing and Editing Behavior Patterns
- Copying Behavior Patterns
- Deleting Behavior Patterns

3.12.1 Search for Behavior Patterns

To open the Behavior Pattern Summary Window and search the Behavior Patterns, perform the following steps:

1. From the LHS menu, select **Maintenance**, and then select **Behavior Pattern** to open the Behavior Pattern Summary Page. This page is the gateway to all Behavior Patterns and related functionality. You can navigate to other pages relating to Behavior Patterns from this page.

Figure 3-44 Behavior Pattern Summary Page



The Summary Page of Behavior Pattern displays the Search Criteria Pane, Field Search (Specific Search) Pane, and the already created Behavior Patterns and their details.

2. Click the **Search** icon and enter the Search Criteria from the following options:
   - Code
   - Name
   - Description
   - Behavior Type
3. Click **Search** to display the Behavior Patterns that match the criteria.
4. Click Search after entering the Search Criteria.
   The search results are displayed in a table containing all the Behavior Patterns that meet the search criteria with the following details:
   - **Code:** The code of the Behavior Pattern.

- **Name:** The name of the Behavior Pattern.
- **Behavior Type:** The type of the Behavior Pattern.
- **Last Modified By:** Displays the Name of the user who last modified the Behavior Pattern.
- **Last Modified Date:** Displays the Date and Time at which a Behavior Pattern was last modified.

5. Click on the Action icon against the Behavior Pattern to do further actions as follows:
   - **View:** Click View to view the details of a Behavior Pattern in Read-Only format.
   - **Edit:** Click Edit to modify a previously saved Behavior Pattern. Note that you cannot change the Code.
   - **Save As:** Click Save As to create a copy of the selected Behavior Pattern.
   - **Dependency Information:** Click Check Dependencies to generate a report on all rules that utilize your selected Behavior Pattern.
   - **Delete:** Click Delete to delete the selected Behavior Pattern.
6. Click **Cancel/Reset** to remove the filter criteria on the Search Window and refresh the window.

The other method to search a Data File is using the Field Search Pane. You can enter any one of the details of a Data File and press the Enter key to display the details of the Data File.

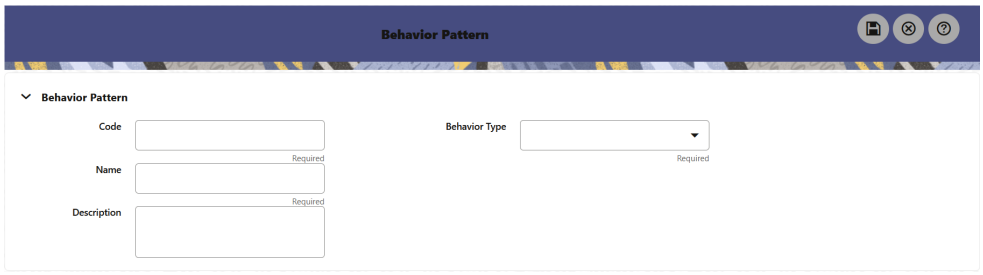
3.12.2 Creating Behavior Patterns

You create Behavior Patterns to capture the principal run-off behavior of product types that do not have contractual maturities.

To create a Behavior Pattern, perform the following:

1. Navigate to the **Behavior Pattern Summary** Page.
2. Click **Add** to display the Behavior Pattern Details Page.

Figure 3-45 Behavior Patterns Details Page



3. Enter a unique Numeric Code for the new Behavior Pattern. The code is must be mapped the appropriate instrument record's AMRT_TYPE_CD and BEHAVIOUR_PATTERN_CD to connect the instrument to the appropriate pattern.
4. Enter the **Name** and a **Description** for the pattern.

5. Select the Behavior Pattern Type from the following options:
   - Non Maturity
   - Non-Performing
   - Devolvement and Recovery.
6. Define the Behavior Pattern Tenor Specifications for the Maturity Branches.
7. The selection of the Behavior Pattern Type made in the previous step determines the information you must provide to successfully define that Pattern Type. For more information, see:
   - Defining Non-Maturity Behavior Patterns
   - Defining Non-Performing Behavior Patterns
   - Defining Devolvement and Recovery Behavior Patterns

> **Note:**
>
> The Behavior Pattern Details Page above displays the specifications associated with the Non Maturity Pattern Type. Should you change this value for one of the other two alternatives, Non Performing or Devolvement and Recovery, the payment specifications section corresponding to the new Pattern Type get refreshed. Although you can change your selection of the Pattern Type at any point in this procedure, sometimes this might result in loss of data related to any prior selection.

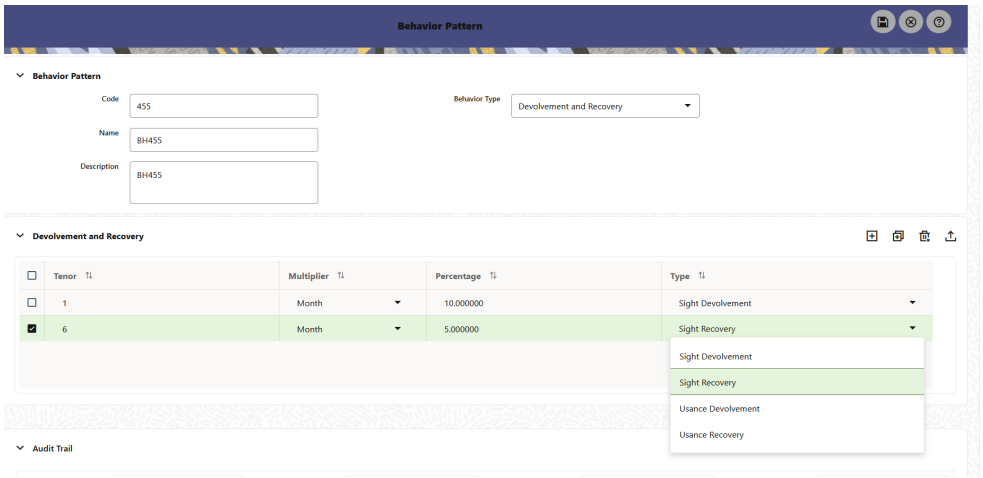
3.12.2.1 Defining Devolvement and Recovery Behavior Patterns

Devolvement and Recovery Behavior Patterns are commonly used for estimating Cash Flows associated with Letters of Credit and Guarantees. These product types are categorized as Off-Balance-Sheet Accounts. Users can assign expected maturity profiles to the related balances classifying them into appropriate categories of Sight Devolvement and Sight Recovery or Usance Devolvement and Usance Recovery. Sight Devolvement and Recovery are the most common types.

To define the Non-Performing Behavior Patterns, perform the following steps:

1. In the **Behavior Pattern Details** Page, select **Devolvement and Recovery** as the Behavior Pattern Type.
2. Click the **Add** icon to open the Non-Performing Behavior Patterns Summary Page.

Figure 3-46 Behavior Pattern with Type as Devolvement and Recovery



3. Enter or select the following details:
   - **Tenor:** Specify the maturity tenor for the first maturity strip. For example, if “1 Day” is defined, then the applicable percentage of the balance will Runoff (mature) on the As-of-Date + 1 Day.
   - **Multiplier:** The unit of time applied to the Tenor. The choices are:
     - Days
     - Months
     - Years
   - **Percentage:** The relative amount of the Principal Balance that will mature on the date specified by the Tenor + Multiplier. The percentage amounts can exceed 100% for devolvement and recovery patterns.
   - **Type:** This allows you to classify the Runoff based on the appropriate type. The options are:
     - **Sight Devolvement:** indicates the Beneficiary is paid as soon as the Paying Bank has determined that all necessary documents are in order. This is the preferred approach.
     - **Sight Recovery**
     - **Usance Devolvement:** Usance: is a period, which can be between 30 and 180 days after the bill of Lading Date.
     - Usance Recovery

> **Note:**
>
> There is no difference in behavior from a Cash Flow perspective, but the Runoff Amount will be written to a Principal Runoff Financial Element corresponding to the selected Runoff Type.

4. Click the **Add** icon to add additional payment strips to the Pattern and define appropriate assumptions for each strip.

5. To delete a row, select the check box corresponding to the row(s) you want to remove and click the **Delete** icon.
6. Click **Save**.

The Behavior Pattern is saved and the Behavior Pattern Summary Page is displayed.

3.12.2.2 Defining Non-Maturity Behavior Patterns

Non-Maturity Behavior Patterns are commonly used for deposit products like Checking, Savings, and Money Market Accounts as well as for Credit Card Accounts. These account types are similar in that they do not have Contractual Cash Flows because Customers have the option to deposit or withdraw any amount at any time (up to any established limits).

When working with Non-Maturity Behavior Patterns, your percentage weights, assigned to maturity terms must add up to 100%.

To define a Non-Maturity Behavior Pattern, follow the Manual Method.

For Manual Model, you can perform the following steps:

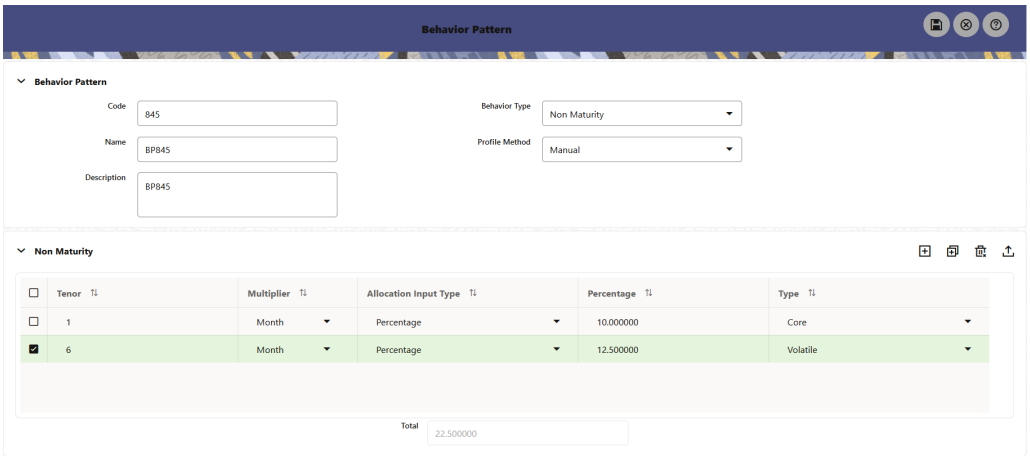
1. In the Behavior Pattern Details Page, select Non Maturity as the Behavior Pattern Type.
2. Select Non-Maturity Products Profile Method as Manual.
3. Enter or select the following details:
   - Tenor: Used to specify the maturity term for the particular row. For example, if “1 Day” is defined, then the applicable percentage of the balance will runoff (mature) on the As-of-Date + 1 Day.
   - Multiplier: The unit of time applied to the tenor. The choices are as follows:
     - Days
     - Months
     - Years
   - Allocation Input Type: This field has a default value of Percentage for each maturity tier.
   - Percentage: The outstanding balance indicating how much of the outstanding balance will mature on the specified term. Enter a number 0 and 100.
   - Type: This allows you to classify the Runoff based on the appropriate type. If you select Percentage under 'Allocation Input Type', this allows you to select Core or Volatile.
4. Click the **Add** icon to add additional payment strips to the Pattern. After defining the initial strip as Volatile, subsequent strips are usually classified as Core with varying maturity terms assigned.

   > **Note:**
   >
   > There is no difference in behavior from a Cash Flow perspective, but the Runoff Amount will be written to a Principal Runoff Financial Element corresponding to the selected Runoff Type.

5. Click **Add Multiple Row** icon to open a window. Enter the number of rows you want to add and click Add Rows.

6. The **Upload Excel** icon helps you to upload the Behavior Pattern information to an Excel Sheet. This feature will be available in future.
7. To delete a row, select the check box corresponding to the row you want to remove and click the Delete icon.
8. Click **Save**.

Figure 3-47 Behavior Pattern Type as Non-Maturity



The Behavior Pattern is saved and the Behavior Pattern Summary Page is displayed.

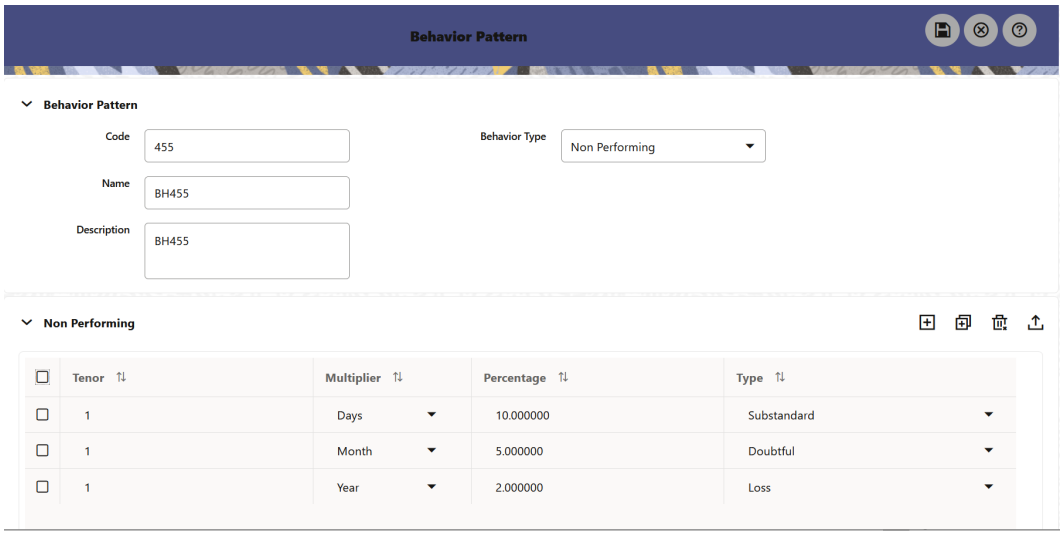
3.12.2.3 Defining Non-Performing Behavior Patterns

Non-Performing Behavior Patterns are commonly used for balances that are classified as non-earning assets. These balances are typically sourced from the Management Ledger as aggregate balances. Users can assign expected maturity profiles to these balances classifying them into appropriate categories of Sub Standard, Doubtful, or Loss.

To define the Non-Performing Behavior Patterns, perform the following steps:

1. In the Behavior Pattern Details Page, select **Non-Performing** as the **Behavior Pattern Type**.
2. Click the **Add** icon to open the **Non-Performing Behavior Patterns Summary** Page.

Figure 3-48 Behavior Pattern with Type as Non-Performing



3. Enter or select the following details:
   - **Tenor:** Specify the maturity tenor for the first maturity strip. For example, if “1 Day” is defined, then the applicable percentage of the balance will runoff (mature) on the As-of-Date + 1 Day.
   - **Multiplier:** The unit of time applied to the Tenor. The choices are:
     - Days
     - Months
     - Years
   - **Percentage:** The relative amount of the Principal Balance that will mature on the date specified by the Tenor + Multiplier. The percentage amounts can exceed 100% for Non-Performing Patterns.
   - **Type:** This allows you to classify the Runoff based on the appropriate type. The options are:
     - Substandard
     - Doubtful
     - Loss

> **Note:**
>
> There is no difference in behavior from a Cash Flow perspective, but the Runoff Amount will be written to a Principal Runoff Financial Element corresponding to the selected Runoff Type.

4. Click the **Add** icon to add additional payment strips to the Pattern and define appropriate assumptions for each strip.
5. To delete a row, select the check box corresponding to the row(s) you want to remove and click the **Delete** icon.
6. Click **Save**.

The Behavior Pattern is saved and the **Behavior Pattern Summary** Page is displayed.

3.12.3 View and Edit Behavior Pattern

You can view existing Behavior Pattern, and you can edit existing patterns, provided you have Read/Write Privileges.

To view and edit a Behavior Pattern, perform the following steps:

1. Navigate to the **Behavior Pattern Summary** Screen.
2. Search for a Rule.
   For further information, see the Search for Behavior Pattern section.
3. Click on the **Action** icon against the Pattern Name and select **View or Edit** to open the rule you want to update.
4. Update the rule details.
5. Click **Apply** or **Save**, depending on the rule type.

3.12.4 Copy Behavior Pattern

You can copy patterns to avoid having to enter data multiple times. This saves time and effort and reduces mistakes.

To copy a Behavior Pattern, perform the following steps:

1. Navigate to the Behavior Pattern Summary Screen.
2. Search for a Rule.
   For more information, see the Search for Behavior Pattern section.
3. Click on the **Action** icon against the Pattern Name and select **Save As** to duplicate the rule.
4. Select a folder where you want to save the rule copy.
5. Enter a unique Name for the new rule.
   (Optional) Enter a brief Description of the rule.
6. Select the **Access Type**.
7. Click the **Save** button.

3.12.5 Delete Behavior Pattern

You can delete patterns that are no longer required. A pattern cannot be retrieved after deletion.

Restrictions on deleting patterns are:

- You cannot delete patterns if you have only Read Privileges. Only users with Read/Write Privileges and pattern owners can delete patterns.
- You cannot delete a pattern that has a dependency.

To delete a Behavior Pattern, perform the following steps:

1. Navigate to the Summary Screen and select Behavior Pattern.
2. Search for a Behavior Pattern

For more information, see the Search for Behavior Pattern section.

3. Click on the **Action** icon against the Pattern Name and select Delete.

3.13 Repricing Pattern

User Defined Repricing Patterns provide a mechanism to capture Instrument Repricing Patterns that are too complex to be accommodated through the use of the Standard Account Table Fields. You can utilize a Repricing Pattern to generating Cash Flows by entering the Adjustable Type Code as “Repricing Pattern” along with actual Repricing Pattern Code for the relevant Instrument Records.

The procedure for working with and managing Repricing Patterns is, similar to that of other Oracle Business Rules.

Topics

- Repricing Pattern Summary Page
- Search Repricing Patterns
- Create a Repricing Pattern
- View and Edit Repricing Patterns
- Copy Repricing Patterns
- Delete Repricing Patterns

3.13.1 Repricing Pattern Summary Page

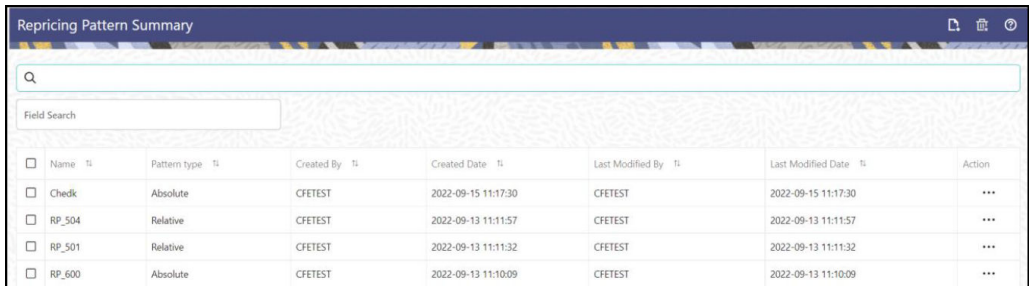
This page is the gateway to all Repricing Patterns and related functionality. You can navigate to other pages relating to Repricing Patterns from this point.

The Repricing Summary Page displays the following columns.

Table: Repricing Pattern Rule – Fields and Descriptions

Column	Description
Name	Displays the Repricing Pattern Rule's Short Name. Mouse over the Name field to view the Code and Description details.
Pattern Type	Displays the Repricing Pattern Type, such as Absolute or Relative.
Created By	Displays the Name of the user who created the Repricing Pattern.
Created Date	Displays the Date and Time at which a Repricing Pattern was created.
Last Modified By	Displays the Name of the user who last modified the Repricing Pattern Rule.
Last Modified Date	Displays the Date and Time when Repricing Pattern was modified last.
Action	Displays the list of actions that can be performed on the Repricing Pattern Rule. For more information, see Repricing Pattern – Icons and Descriptions .

Figure 3-49 Repricing Summary Page



The Action column on the Repricing Pattern Summary Page offers several actions that allow you to perform different functions. The following actions are available for the Repricing Pattern Rule.

Table: Repricing Pattern Rule – Icons and Descriptions

Table 3-35 Repricing Pattern – Icons and Descriptions

Fields	Description
Add	Click Add icon to build a new Repricing Pattern Rule.
Multiple Delete	Select one or more rules in the table and then click the Delete icon at the top right of the Summary Page to delete more than one rule at the same time.
View/Edit	Click on the Action icon against the Pattern Name and select View/Edit to view or edit the contents of a Repricing Pattern Rule in Read/ Write format. Depending on User Privileges the rule will open in either View or Edit Mode.
Save As	Click on the Action icon against the Pattern Name and select Save As to create a copy of an existing Repricing Pattern Rule.
Delete	Click on the Action icon against the Pattern Name and select Delete to delete an existing Repricing Pattern Rule.
Dependency Check	Click on the Action icon against the Pattern Name and select Dependency Check to view objects where selected Repricing Pattern Rule is used.

3.13.2 Search Repricing Pattern

Search for a Repricing Pattern to perform any of the following tasks:

- View
- Edit
- Copy
- Delete

Prerequisites

Predefined Repricing Patterns

Procedure

To search the repricing patterns, follow these steps:

- Navigate to the Repricing Pattern Summary Page.
- Enter the code or name of the pattern in Search Criteria.
- Click the **Search** .
  Only patterns that match the search criteria are displayed.

3.13.3 Create Repricing Patterns

You create Repricing patterns to capture the Repricing Behavior of instruments whose rates change according to complex schedules.

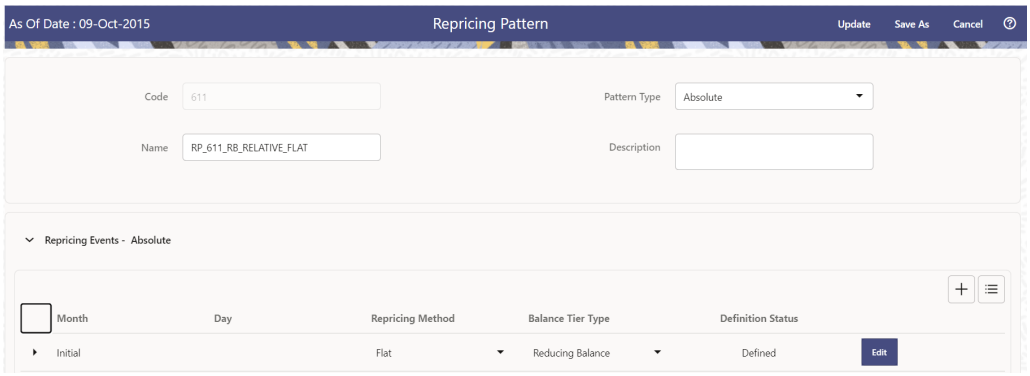
To create the Repricing Pattern, follow these steps:

1. Navigate to Repricing Pattern Summary Page.
2. Click **Add** icon.
   The Add Repricing Pattern Page is displayed.
3. Enter a Numeric Code Value for the new Repricing Pattern. You can also click Generate Code Option in Code field to generate the code automatically.
4. Enter the name of the pattern.
5. Type a brief description for the pattern.
6. Select the Repricing Pattern Type: Absolute or Relative.
   The selection of the Repricing Pattern type determines the fields that are displayed in the Repricing Events Table and the information you must provide to successfully define that pattern type. See:
   - Defining Absolute Repricing Patterns
   - Defining Relative Repricing Patterns
7. Click **Save**.

3.13.3.1 Define Absolute Repricing Patterns

The Absolute Repricing Pattern is used for instruments that are date dependent. Each specific date is a separate event. You need to enter the month and day for each event, except for the initial event.

Figure 3-50 Define Absolute Repricing Pattern



Prerequisites

Selecting Absolute as the pattern type.

Procedure

This table describes key terms used for this procedure.

Table: Key Terms used in Absolute Repricing Pattern

Key Terms	Description
Add Row	Allows you to add one or more Repricing Events.
Add Multiple Rows	Allows you to add more Repricing Events.
Define	Add detail for each Repricing Event.
Delete	Allows you to delete specific rows in the Repricing Events Table.
Month	In conjunction with the Day field, this drop-down menu, allows you to specify a unique month-day combination for a Repricing Event.
Day	In conjunction with the Month drop-down menu, this field allows you to specify a unique month-day combination for a Repricing Event.

To define Absolute Repricing Pattern, perform the following:

1. Select Pattern Type as **Absolute**.
2. Specify the required month-day combination for the event. You cannot specify a month-day combination for the first event as this row is reserved for the initial period.
3. Select the Repricing Type: **Flat** or **Indexed**.
   The default is flat. If you select Indexed, the system automatically changes the fields available for entry.

   Note: You can change your selection of the Repricing Type at any point in this process. Sometimes it may cause a loss of data.

   For more information on Flat Repricing Type, see Repricing Event is Flat Repricing.

For more information on Index Repricing Type, see Repricing Event is Index Repricing.

- Select Balance Tier option:
  - **None**: If selected, the Balance Tiered Pricing is not applied.
  - **Current Balance**: Users can define balance tiers and associate different rates with the corresponding balance tier level. Balance tier in this case is decided using the principal balance of instrument on As of Date. Thus, even when actual balance goes down due to repayment, the instrument continues to be in original balance tier.
  - **Reducing Balance:** If the Balance Type is selected as Reducing Balance, then the repricing rate will be calculated using principal balance as on Repricing Date. Thus, the balance tier applicable to instrument cange over its life due to repayment.

4. Click **Define**.

Repricing Event is Flat Repricing

Flat Rate: A Flat Rate is a specific rate—it is directly input.

To define a Flat Rate Event, follow these steps:

1. Select the Flat option from Repricing Method drop-down list for the event you are going to define. Notice the bottom half of the screen refreshes, displaying the required inputs. Complete the following steps on the Add Repricing Events Page:
2. Enter the Net Rate.
3. Enter the Gross Rate.
4. Enter the Transfer Rate.

> **Note:**
>
> The Transfer Rate functionality will be released in future.
>
> You must enter a valid value for at least one of these rate fields.

5. Click Apply.
   The Event Summary Page is displayed. At this point, you have the option of defining additional events or saving. To add an additional event, repeat Click Add Row. You can edit the details of Defined Event.

Repricing Event is Indexed Repricing

An Indexed Rate is a set of parameters used to calculate a rate.

To define an Indexed Rate Event, follow these steps:

1. Select the Indexed option from Repricing Method drop-down list for the event you are going to define. Notice the bottom half of the screen refreshes, displaying the required inputs. Complete the following steps on the Add Repricing Events Page:
2. Select the Interest Rate Curve.
3. Select the Transfer Price Curve.

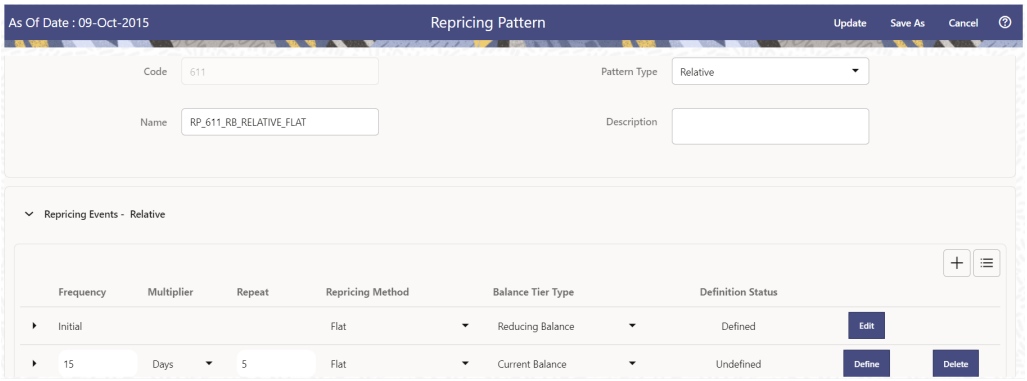
> **Note:**
>
> The Transfer Price Curve functionality will be released in the future.

4. Enter the Yield Curve Term and select the appropriate Multiplier.
5. Enter the Net Margin.
6. Enter the Gross Margin.
7. Enter the Transfer Price Margin.
8. Enter the Rate Cap Life.
9. Enter the Rate Floor Life.
10. Enter the Rate Set Lag and select the appropriate Multiplier.
11. Click Apply. The Event Summary Page is displayed.
12. At this point, you have the option of defining additional events or saving. To add an additional event, repeat Click Add Row.
13. Click **Save**.
    The Repricing Pattern is saved and the Repricing Pattern Summary Page is displayed.

3.13.3.2 Define Relative Repricing Patterns

The Relative Repricing Pattern is used for instruments where the repricing is determined by the elapsed time since origination. Defining a Relative Repricing Pattern involves the definition of a series of repricing events applicable to a specific Repricing Pattern Code. You need to specify the length of each Repricing Period and the number of times that event should occur before calculating the next event in the pattern.

Figure 3-51 Define Relative Repricing Pattern



Prerequisites

Selecting Relative as the pattern type.

Procedure:

This table describes key terms used for this procedure.

Table: Key Terms used in Relative Repricing Pattern

Key Terms	Description
Add Row	This allows you to Add one or more Repricing Events.
Add Multiple Rows	Allows you to add more Repricing Events.
Delete	This allows you to delete specific rows in the Repricing Events Table. You need to specify the following parameters in the Repricing Events Table for a Relative Repricing Pattern:
Frequency	In conjunction with the Multiplier drop-down menu, this field allows you to specify how often Repricing occurs.
Multiplier	The unit of time applied to the frequency. The choices are: Days Months Years
Repeat	This allows you to specify the number of times a repricing event should be repeated.
Repricing Method	A drop-down list, it displays the Repricing Type, Flat Rate or Indexed Rate, associated with a particular event.

The steps to create relative Repricing Patterns are similar to creating Creating Absolute Repricing Patterns.

The only difference is that the fields in the Repricing Events Table are different.

Select Pattern Type as Relative and follow the steps mentioned in Creating Absolute Repricing Patterns section.

3.13.4 View and Edit Repricing Pattern

You can view existing Repricing Pattern, and you can edit existing patterns, provided you have Read/Write privileges.

To view and edit a Repricing Pattern, follow these steps:

1. Navigate to the **Maintenance** and select **Repricing Pattern**.
2. Search for a Rule. For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the Pattern Name and select **View/Edit** to open the rule you want to update.
4. Update the Rule details.
5. Click **Apply** or **Save**, depending on the Rule type.

3.13.5 Copy Repricing Pattern

You can copy patterns to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes.

To copy a Repricing Pattern, follow these steps:

1. Navigate to the **Maintenance** and select **Repricing Pattern**.
2. Search for a Rule.
   For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Pattern Name and select **Save As** to duplicate the rule.
4. Select a folder where you want to save the Rule Copy.
5. Enter a unique name for the new Rule.
6. (Optional) Enter a brief description of the Rule.
7. Select the access type.
8. Click **Save**.

3.13.6 Delete Repricing Pattern

You can delete patterns that are no longer required.

> **Note:**
>
> A pattern cannot be retrieved after deletion.
>
> Restrictions on deleting patterns are:
>
> - You cannot delete patterns if you have only Read privileges. Only users with Read/Write privileges and pattern owners can delete patterns.
> - You cannot delete a pattern that has a dependency.

To delete a Repricing Pattern, follow these steps:

1. Navigate to the **Maintenance** and select **Repricing Pattern**.
2. Search for a Rule. For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Pattern Name and select **Delete**.

3.13.7 Dependency Check

You can check dependencies for rules to know where a particular Repricing Pattern Rule has been used. This also prevents accidental deletion of rules having dependencies.

To check the dependency of a rule, follow these steps:

- Navigate to the **Maintenance** and select **Repricing Pattern**.
- Search for a Rule. For further information, see the Searching for Rules Section.
- Click on the **Action** icon against the Pattern Name and select **Dependency Check** to the Rule that you want to check for.

> **Note:**
>
> This is functionality will be released in future.

3.14 Payment Patterns

User defined payment patterns allow you to define custom repayment patterns for products in your portfolio. You can include a payment pattern while generating cash flows by entering the payment pattern code for the instrument.

This chapter describes the procedure for capturing instrument payment patterns that are too complex to be accommodated in the standard fields of Instrument tables.

The procedure for working with and managing Payment Patterns is, similar to that of other Oracle assumption rules.

Topics

- Payment Pattern Summary Page
- Searching for Payment Patterns
- Creating Payment Patterns
- Viewing and Editing Payment Patterns
- Copying Payment Patterns
- Deleting Payment Patterns

3.14.1 Payment Pattern Summary Page

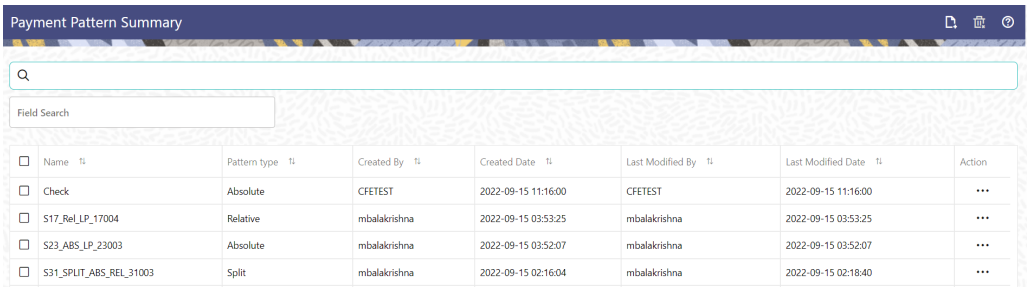
This page is the gateway to all Payment Patterns and related functionality. You can navigate to other pages relating to Payment Patterns from this point.

The Payment Summary Page displays the following columns.

Table 3-36 Payment Pattern Rule – Fields and Descriptions

Column	Description
Name	Displays the Payment Pattern Rule's Short Name.
Pattern Type	Displays the Payment Pattern Type, such as Absolute, Relative, or Split.
Created By	Displays the Name of the user who created the Payment Pattern.
Created Date	Displays the Date and Time at which a Payment Pattern was created.
Last Modified By	Displays the Name of the user who last modified the Payment Pattern Rule.
Last Modified Date	Displays the Date and Time when Payment Pattern was modified last.
Action	Displays the list of actions that can be performed on the Payment Pattern Rule. For more information, see Payment Pattern – Icons and Descriptions.

Figure 3-52 Payment Summary Page



The Action column on the Payment Pattern Summary Page offers several actions that allow you to perform different functions. The following actions are available for the Payment Pattern Rule.

Table 3-37 Payment Pattern Rule – Icons and Descriptions

Fields	Description
Add	Click Add icon at the top right of the Summary Page to build a new Payment Pattern Rule.
Multiple Delete	Select one or more rules in the table and then click the Delete icon at the top right of the Summary Page to delete more than one rule at the same time.
View/Edit	Click on the Action icon against the Pattern Name and select View/Edit to view or edit the contents of a Payment Pattern Rule in Read/ Write format. Depending on User Privileges the rule will open in either View or Edit Mode.
Save As	Click on the Action icon against the Pattern Name and select Save As to create a copy of an existing Payment Pattern Rule.
Delete	Click on the Action icon against the Pattern Name and select Delete to delete an existing Payment Pattern Rule.
Dependency Check	Click on the Action icon against the Pattern Name and select Dependency Check to view objects where selected Payment Pattern Rule is used.

3.14.2 Search for Payment Patterns

Search for a payment pattern to perform any of the following tasks:

- View
- Edit
- Copy
- Delete
- Check Dependencies

Prerequisites

- Predefined Payment Patterns

Procedure

To search for payment patterns, do the following:

1. Navigate to the **Payment Pattern** summary page.
2. Enter the Code, Name, Description, or Type of the pattern in Search Criteria.
3. Click the **Search** icon.

Only patterns that match the search criteria are displayed.

You can control the number of rows to display on-screen by selecting the "Pagination Options" icon from the action bar.

3.14.3 Create Payment Patterns

You create payment patterns to capture the repayment behavior of instruments that are too complex to be accommodated through the use of the standard instrument table fields.

To create the payment pattern, do the following:

1. Navigate to the **Payment Pattern** summary page.
2. Click **Add** icon. The **Add Payment Patter**n page is displayed.
3. Enter a Code value for the new payment pattern. You can also click Generate Code Option in Code field to generate the code automatically.

> **Note:**
>
> The code value you assign to the new pattern must be unique. Also, the code must be mapped to the appropriate instrument records (PMT_PATTERN_CD field) to connect the instrument to the appropriate pattern.

4. Enter the Name for pattern.
5. Enter a brief Description for the pattern.
6. Select the Pattern Type: Absolute, Relative, or Split.
7. Select the Payment Type: Conventional, Level Principal, or Non-amortizing.

> **Note:**
>
> The Payment Type option is not available for Split Payment Pattern type.

The selection of the payment pattern type made in the previous step determines the information you must provide to successfully define that pattern type. See:

- Defining Absolute Payment Patterns
- Defining Relative Payment Patterns
- Defining Split Payment Patterns

8. Click **Save**.

3.14.3.1 Define Absolute Payment Patterns

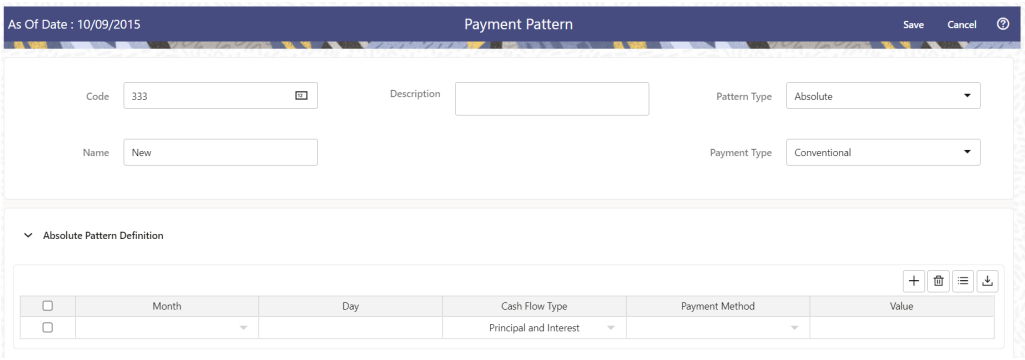
Absolute payment patterns are commonly used for instruments that are on a seasonal schedule, such as agricultural or construction loans that require special payment handling based on months or seasons.

When working with absolute payment patterns, it is sufficient to define payments for one calendar year. Once the term exceeds a year, the payment schedule will loop until the instrument matures.

Prerequisites

Selecting Absolute as the pattern type.

Figure 3-53 Absolute Payment Patterns



To define absolute payment pattern, do the following:

1. In the **Payment Patterns** page, select **Pattern Type** as **Absolute**.
2. Select the Payment Type from the drop-down list: **Conventional**, **Level Principal**, or **Non-Amortizing**. The Payment Type determines the type of information required to successfully define the Payment Phase.
3. Define the **Payment Phases**. A Payment Phase is a set of payment characteristics that defines the timeline of the instrument's amortization.
   a. Define the following parameters:
      - **Month:** This drop-down list allows you to select the month of the payment phase being defined.
      - **Day:** Used to specify the day of the month the payment is due.
   b. Select the **Cash Flow Type**. The available types depends on the Payment Type. This do not apply to the Non-Amortizing Payment Type.
   Table: Relationship between Cash Flow Type and Payment Types

	Level Principal	Non-Amortizing	Conventional
Principal and Interest	Yes		Yes
Principal Only	Yes		

	Level Principal	Non-Amortizing	Conventional
Interest Only	Yes	Yes	

c. Select the **Payment Method**. The available Payment Methods depend on the Payment Type. For more information, see: Relation between Payment Method and Payment Types. Payment Methods do not apply to the Non-Amortizing Payment Type.

d. Enter the Value for the Payment Method you selected in the previous step for applicable Payment Types.
If you selected the Interest Only Payment Method in the previous step, the Value field does not apply.

4. Click the **Add** icon to add additional Payment Phases to the Pattern. Click Delete icon corresponding to the rows you want to delete.
5. Click **Add Multiple Row** icon to enter the number of rows you want to add and click Go.
6. The **Download Excel** icon helps you to export payment information, modify and paste back in the UI.

> **Note:**
>
> A Payment Pattern must have at least one valid Payment Phase to be successfully defined. The system raises a warning if you try to save a Payment Pattern with an incomplete Payment Phase.

7. Click Apply and Save.

The Payment Pattern is saved and the Payment Pattern summary page is displayed.

The following table describes the relationship between Payment Phase properties and Payment Types.

Relationship between Payment Phase Properties and Payment Types

	Level Principal	Non-Amortizing	Conventional
Month	Yes	Yes	Yes
Day	Yes	Yes	Yes
Payment Method	Yes		Yes
Value	Yes		Yes

The following table describes the relationship between Payment Method and Payment Types.

Relationship between Payment Methods and Payment Types

Payment Method	Level Principal	Non-Amortizing	Conventional
Percentage of Original Balance	Yes		
Percentage of Current Balance	Yes		
Percentage of Original Payment	Yes		Yes
Percentage of Current Payment	Yes		Yes

Payment Method	Level Principal	Non-Amortizing	Conventional
Absolute Payment	Yes		Yes
Interest Only	Yes		Yes

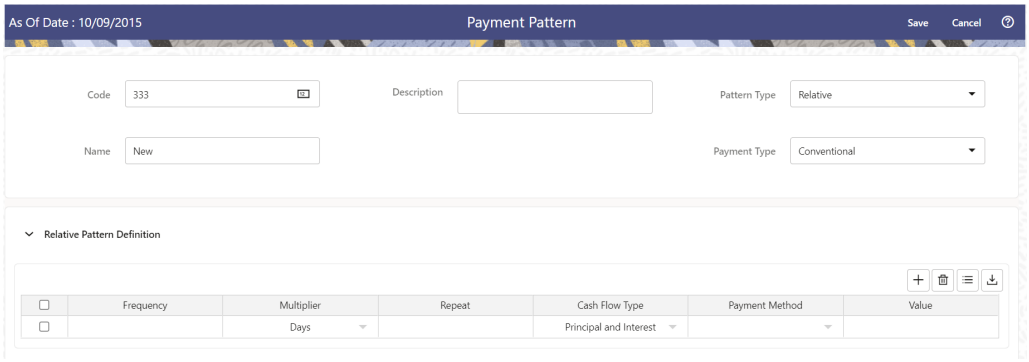
3.14.3.2 Define Relative Payment Patterns

You create Relative Payment patterns for instruments that have irregular scheduled payments.

Prerequisites

Selecting Relative as the pattern type.

Figure 3-54 Relative Payment Patterns



To define a relative payment pattern, follow these steps:

1. In the **Payment Patterns** page, select **Pattern Type** as **Relative**.
2. Select the Payment Type from the drop-down list: **Conventional**, **Level Principal**, or **Non-Amortizing**. The Payment Type determines the type of information required to successfully define the Payment Phase.
   The payment type determines the available characteristics for defining the payment amount.
3. Define the **Payment Phase**.
   The payment type determines the type of information required to successfully define the payment phase. For more details, see: Relation between Payment Phase Attributes and Payment Types.
   a. Enter the **Frequency** for each payment phase.
   b. Select the appropriate Multiplier for each payment phase from the following options:
      - Days
      - Months
      - Years
   c. Enter the number of times each Payment Phase should be repeated in the Repeat column.

d. Select the **Cash Flow Type**. The available types depend on the Payment Type. This do not apply to the Non-Amortizing Payment Type.
Table: Relationship between cash Flow Type and Payment Types

	Level Principal	Non-Amortizing	Conventional
Principal and Interest	Yes		Yes
Principal Only	Yes		
Interest Only	Yes	Yes	

e. Select the **Payment Method**.
The available payment methods depend on the payment type. For more details, see Relation between Payment Method and Payment Types. Payment Methods do not apply to the Non-Amortizing Payment Type.

f. Type the Value for the Payment Method you selected in the previous step for applicable Payment Types.

4. Click the **Add** icon to add additional Payment Phases to the Pattern. Click Delete icon corresponding to the rows you want to delete.
5. Click **Add Multiple Row** icon to enter the number of rows you want to add and click Go.
6. The **Download Excel** icon helps you to export payment information, modify and paste back in the UI.

> **Note:**
>
> A Payment Pattern must have at least one valid Payment Phase to be successfully defined. The system raises a warning if you try to save a Payment Pattern with an incomplete Payment Phase.

7. Click **Apply** and **Save**.
The payment pattern is saved and the Payment Pattern home page is displayed.

> **Note:**
>
> It is not necessary to set up relative payment patterns for the complete term of an instrument. The payment pattern automatically repeats until the maturity date. Suppose a payment pattern is created to make monthly payments for the first year and quarterly payments for the next three years. If you apply this pattern to an instrument record with an original term of five years, the payment pattern wraps around and the fifth year is scheduled for monthly payments.
>
> An easy way to set up payment patterns for instruments with varying original terms is to use the repeat value of 999 in the last row of the payment pattern. For example, a payment pattern that pays monthly for the first year and quarterly thereafter, can be set up with two rows. The first row shows 12 payments in one month. The second row shows 999 payments in three months. When this payment pattern is processed it repeats the three-month payment frequency until the maturity date is reached.

The following table describes the relationship between payment phase attributes and payment types.

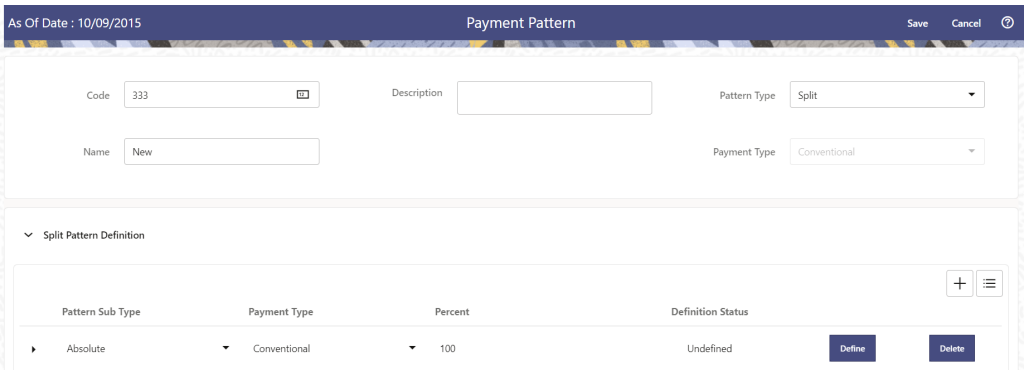
Relationship between Payment Phases and Payment Types

Payment Phase Attributes	Payment Types: Level Principal	Payment Types: Non-Amortizing	Payment Types: Conventional
Frequency	Yes	Yes	Yes
Multiplier	Yes	Yes	Yes
Repeat	Yes	Yes	Yes
Payment Method	Yes		Yes
Value	Yes		Yes

3.14.3.3 Define Split Payment Patterns

You can use a Split payment pattern for financial instruments that make principal payments along with two concurrent amortization schedules. Split patterns may be a combination of Absolute and Relative Payment Patterns for example, and contain multiple sets of payment phases under a single amortization code. These patterns could further use a combination of Conventional, Level Principal, and Non-Amortizing Payment Types.

Figure 3-55 Split Payment Patterns



To define a split payment pattern, follow these steps:

1. In the Payment Patterns page, select Pattern Type as Split.
2. Define Split Pattern definition.
   a. Select the required **Pattern Sub Type** for each leg.
      - Absolute
      - Relative
   b. Select the Payment Type for each Payment Phase or Split.
   c. Enter the Percent value to indicate the percentage weight of the timeline being defined for the individual payment phases (each row). The sum of the percentage weights must total 100%.

> **Note:**
>
> The payment pattern term specifications for different payment phases or splits vary depending on whether you select the Absolute or Relative Pattern Type. You can define the term specifications for the splits following the steps described previously for defining payment phases for these patterns. See:
>
> - Define Absolute Payment Patterns
> - Define Relative Payment Patterns

3. Select one of the legs and then select **Define** button to enter pattern details for the leg.
4. Select one of the legs and then select **Delete** button to delete pattern details for the leg.
5. Click the **Add** icon to add additional Payment Phases to the Pattern.
6. Click **Add Multiple Row** icon to enter the number of rows you want to add and click Go.
7. Click **Apply** and **Save**.

The Split payment pattern is saved and the Payment Pattern summary page is displayed.

3.14.4 View and Edit Payment Pattern

You can view existing Payment Pattern, and you can edit existing patterns, provided you have Read/Write privileges.

To view and edit a Payment Pattern, follow these steps:

1. Navigate to the **Maintenance** and select **Payment Pattern**.
2. Search for a Rule. For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the Pattern Name and select **View/Edit** to open the rule you want to update.
4. Update the Rule details.
5. Click **Apply** or **Save**, depending on the Rule type.

3.14.5 Copy Payment Pattern

You can copy patterns to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes.

To copy a Payment Pattern, follow these steps:

1. Navigate to the **Maintenance** and select **Payment Pattern**.
2. Search for a Rule.
   For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Pattern Name and select **Save As** to duplicate the rule.
4. Select a folder where you want to save the Rule Copy.
5. Enter a unique name for the new Rule.
6. (Optional) Enter a brief description of the Rule.

7. Select the access type.
8. Click **Save**.

3.14.6 Delete Payment Pattern

You can delete patterns that are no longer required.

> **Note:**
>
> A pattern cannot be retrieved after deletion.
>
> Restrictions on deleting patterns are:
>
> - You cannot delete patterns if you have only Read privileges. Only users with Read/Write privileges and pattern owners can delete patterns.
> - You cannot delete a pattern that has a dependency.

To delete a Payment Pattern, follow these steps:

1. Navigate to the **Maintenance** and select **Payment Pattern**.
2. Search for a Rule. For more information, see the Searching for Rules section.
3. Click on the Action icon against the Pattern Name and select **Delete**.

3.14.7 Dependency Check

You can check dependencies for rules to know where a particular Payment Pattern Rule has been used. This also prevents accidental deletion of rules having dependencies.

To check the dependency of a rule, follow these steps:

1. Navigate to the Maintenance and select Payment Pattern.
2. Search for a Rule. For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the Pattern Name and select **Dependency Check** to the Rule that you want to check for.

> **Note:**
>
> This is functionality will be released in future.

3.15 Prepayment Rules

This module describes the procedure for working with and managing Prepayment Rules. One of the major business risks faced by financial institutions engaged in the business of lending and borrowing is prepayment and early redemption risk. Prepayment risk is the possibility that borrowers might choose to repay part or all their loan obligations before the scheduled due dates. Prepayments can be made by either accelerating principal payments or refinancing. Prepayments cause the actual cash

flows from a loan to a financial institution to be different from the cash flow schedule drawn at the time of loan origination. A Prepayment Rule contains methodologies to model the prepayment behavior of various amortizing instruments and quantify the associated Prepayment Risk.

Topics:

- Prepayment Rule Summary Page
- Search Prepayment Rules
- Create Prepayment Rules
- Defining Prepayment Methodologies
- View and Edit Prepayment Rules
- Copy Prepayment Rules
- Delete Prepayment Rules

3.15.1 Prepayment Rule Summary Page

Prepayment Rules allow you to specify methodologies to model the loan prepayment and deposit early redemption behavior of products in your portfolio and quantify the associated prepayment risk in monetary terms. For more information, see Defining Prepayment Methodologies section.

The Prepayment Rule Summary Table displays the following columns.

Table 3-38 Prepayment Rule Summary– Fields and Descriptions

Column	Description
Name	Displays the Prepayment Rule's short name.
Dimension	Displays the Prepayment Rule's short name.
Hierarchy	Name of Hierarchy that is used to define prepayment Rule
Folder	Displays the Folder name where the Prepayment Rule is saved.
Last Modified By	Displays the Name of the user who last modified the Prepayment Rule.
Last Modified Date	Displays the Date and Time when Prepayment was modified last.
Access Type	Displays the access type of Rule. It can be Read-Only or Read/Write.
Action	Displays the list of actions that can be performed on the Prepayment Rule. For more information, see Prepayment Rule – Icons and Descriptions.

The Action column on the Prepayment Rule Summary Page offers several actions that allow you to perform different functions. The following actions are available for the Prepayment Rules.

Figure 3-56 Prepayment Rule Summary page

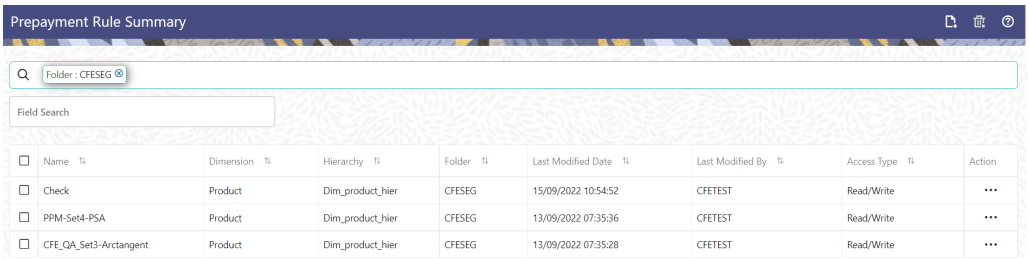


Table 3-39 Prepayment Rule – Icons and Descriptions

Fields	Description
Add	Click **Add** icon at the top right of the summary page to build a new Prepayment Rule.
Multiple Delete	Select one or more Rules in the table and then click the (-) icon at the top right of the Summary Page to delete more than one Rule at the same time.
View/Edit	Click on the **Action** icon against the Prepayment Rule Name and select View/Edit to view or edit the contents of a Prepayment Rule in Read/Write format. Depending on user privileges the Rule will open in either View or Edit Mode.
Save As	Click on the **Action** icon against the Prepayment Rule Name and select Save As to create a copy of an existing Prepayment Rule.
Delete	Click on the **Action** icon against the Prepayment Rule Name and select Delete to delete an existing Prepayment Rule.
Dependency Check	Click on the **Action** icon against the Prepayment Rule Name and select Dependency Check to generate a report on all Rules that utilize your selected Prepayment Rule.

For more information, see the following sections:

- Defining Prepayment Methodologies
- Defining the Constant Prepayment Method
- Defining the Prepayment Model Method
- Defining the PSA Prepayment Method
- Defining the Arctangent Calculation Method

You can copy, in total or selectively, the product assumptions contained within the Prepayment Rules from one currency to another currency or a set of currencies or from one product to another product or a set of products.

3.15.2 Search Prepayment Rule

Search for a Prepayment Rule to perform any of the following tasks:

- View
- Edit
- Copy
- Delete
- Check Dependencies
- Refresh

Prerequisites

Predefined Prepayment Rule

Procedure

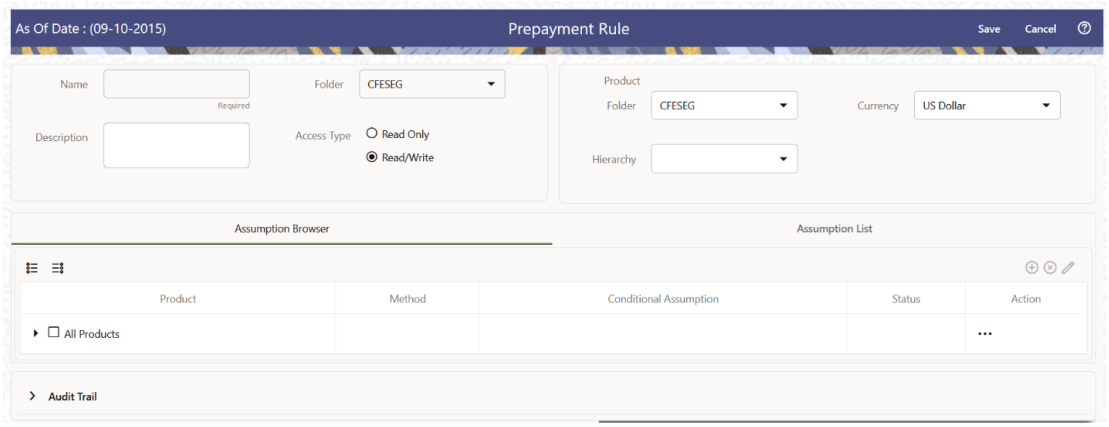
To search for a new Prepayment Rule, follow these steps:

1. Navigate to the **Prepayment Rule Summary** Page. This page holds all Prepayment Rules and related functionality. You can navigate to other pages relating to the Prepayment Rule from this page.
2. Enter the **Code, Name, Description, Dimension, Hierarchy**, and **Folder** of the Prepayment Rule and click **Search** . Only Prepayment Rules that match the search criteria are displayed.

3.15.3 Create Prepayment Rules

You create a Prepayment Rule to define prepayment assumptions for new products.

Figure 3-57 Prepayment Rule Page



To create a new Prepayment Rule, follow these steps:

- Click **Add** icon from the top of the **Prepayment Rule Summary** Page.

- Enter the following Details.

Table 3-40 Create Prepayment Rule

Fields	Description
Name	Enter the name of the Prepayment Rule.
Description	Enter the description of the Prepayment Rule. This is an optional field.
Folder	Select the Folder where the Prepayment Rule needs to be saved.
Access Type	Select the Access Type as Read-Only or Read/Write.

- Select a **Product Hierarchy**. You can define methodologies at any level of the Hierarchical Product Dimension. The Hierarchical Relationship between the nodes allows the inheritance of methodologies from Parent nodes to Child nodes.
- Select Product(s) from **Assumption Browser**.
- Click **Add** from **Assumption Browser** Section. For more information, see the Defining Prepayment Methodologies.

3.15.4 View and Edit Prepayment Rule

You can view existing Prepayment Rule, and you can edit existing Prepayment Rules, provided you have read/write privileges.

To view and edit a Prepayment Rule, follow these steps:

1. Navigate to the **Assumption** and select **Prepayment Rule**.
2. Search for a Rule.
   For further information, see the Search Prepayment Rules section.
3. Click on the **Action** icon against the Prepayment Rule Name and select **View/Edit** to open the Rule you want to update.
4. Update the Rule details.
5. Click **Apply** or **Save**, depending on the Rule type.

3.15.5 Defining Prepayment Methodologies

The assignment of prepayment assumptions is part of the Create or Edit Prepayment Rule Process where assumptions about loan prepayments or deposit early redemptions are made for product-currency combinations. When you click Save in the Create Prepayment Rules Process, the Rule is saved and the Prepayment Rule Summary Page is displayed. However, prepayment assumptions have not yet been defined for any of your products at this point. Typically, you would start defining your prepayment assumptions for product-currency combinations before clicking Save.

The Prepayment Rule supports the definition of prepayment assumptions for combinations of two dimensions: Product and Currency.

Once you have created a Prepayment Rule, you can assign prepayment methodologies to product-currency combinations using Node Level Assumption. For more information, see Defining Prepayments Using Node Level Assumptions section.

3.15.5.1 Defining Prepayments Using Node Level Assumptions

Node Level Assumptions allow you to define assumptions at any level of the Product Dimension Hierarchy. The Product Dimension supports a hierarchical representation of your chart of accounts, so you can take advantage of the parent-child relationships defined for the various nodes of your product hierarchies while defining Rules. Children of Parent nodes on a hierarchy automatically inherit the assumptions defined for the Parent nodes. However, assumptions directly defined for a Child take precedence over those at the Parent level.

Prerequisites

Performing basic steps for creating or editing a Prepayment Rule.

Procedure

This table describes key terms used for this procedure.

Table 3-41 Key Terms used for Prepayment Rules

Terms	Description
Calculation Method	The method used to model prepayment behavior of instruments. You can choose from four pre-payment calculation methods: Constant, Prepayment Model, PSA, and Arctangent.
Cash Flow Treatment	Allows you to specify one of the following two ways in which prepayments are made. • **Refinance:** This is the most used option. Select refinance to keep payment amounts after prepayment consistent with a portfolio-based assumption. This reduces the scheduled payment amount on each loan and maintains the same maturity term. • **Curtailment:** Select curtailment to change the periodic payment amounts due. The prepayments are treated as accelerated payments, with a payoff earlier than the originally scheduled term.
Prepayment Date	You can select when to calculate prepayment, either on normal payment dates or user-defined tenor.
Payment Event Type	When prepayment is calculated on payment dates then this option allows you to specify type of event when prepayment occurs. By default, “Principal and Interest” is selected.
Market Rate	The market rate is defined as the sum of the Index (the Yield Curve Rate as described by the Interest Rate Code) and the Spread (the difference between the customer rate and market rate).

Table 3-41 (Cont.) Key Terms used for Prepayment Rules

Terms	Description
Associated Term	Allows you to define the term for the point on the yield curve selected in the Market Rate Definition that will be used in obtaining the market rate. • **Remaining Term:** The number of months remaining until the instrument matures. • **Reprice Frequency:** The frequency with which the instrument reprices. This defaults to the original term for a fixed-rate instrument. • **Original Term:** The number of months that was the originally scheduled life of the instrument.
Prepayment Rate Definition	This table allows you to specify the constant annual prepayment rate, or the associated factors, that you want to apply to the instruments having origination dates in a particular date range.
Seasonality	This table allows you to specify seasonality adjustments. Seasonality refers to changes in prepayments that occur predictably at given times of the year. Seasonality adjustments are based on financial histories and experiences and should be modeled when you expect the amount of prepayments made for certain types of instruments to increase or decrease in certain months. The default value for seasonality factors is 1, which indicates that no seasonality adjustment is made for a month. Changing the seasonality factors is optional. You can change the seasonality factors for none, one, or multiple months. To make seasonality adjustments, you need to enter a value between 0.00 and 99.9999 for the seasonality factors associated with each month. Seasonality factors less than 1 mean that prepayments are decreased for a particular month. Seasonality factors greater than 1 indicate that prepayments are increased for a particular month.

1. Navigate to the Prepayment Assumption Details Page after selecting a Currency and one or more products from the hierarchy.
2. Select a **Cash Flow Treatment type**, **Refinance** or **Curtailment**.
3. Refinance is the most used method.
4. Select a **Calculation Method** as Constant, Prepayment Model, PSA, or Arctangent.

> **Note:**
>
> The default value for the Calculation Method drop-down list is Constant. If you select "Do not calculate" as the calculation method, no prepayment assumptions will be assigned to the particular product-currency combination. This is a particularly useful option when using node-level assumptions because it allows you to exclude a particular Child from inheriting a Parent assumption.

5. Define the parameters and annual prepayment rates for the selected Calculation Method as Constant, Prepayment Model, PSA or Arctangent.

> **Note:**
>
> The parameters displayed on the Prepayment Methodology page vary depending on the Calculation Method (Constant, Prepayment Model, PSA, or Arctangent) that you have selected. For more information, see:
>
> - Defining the Constant Prepayment Method
> - Defining the Prepayment Model Method
> - Defining the PSA Prepayment Method
> - Defining the Arctangent Calculation Method

6. Click **Apply**.
   The **Assumption Browser Definition** Page is displayed.

   At this point you can:

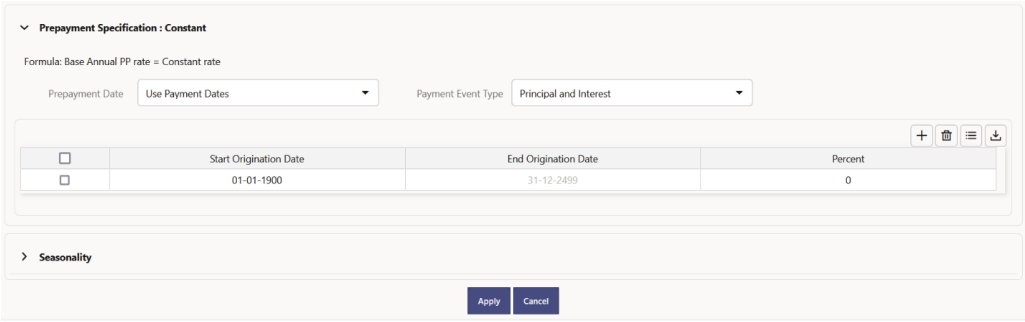
   - Continue defining additional methodologies for other product-currency combinations by repeating the above procedure.
   - Complete the process by clicking **Save**.

   When you click Save, the prepayment assumptions are saved and the **Prepayment Rule Summary** Page is displayed.

3.15.5.1.1 Defining Constant Prepayment Method

Use this procedure to define prepayment assumptions using the Constant Prepayment Method. The Constant Prepayment Method calculates the prepayment amount as a flat percentage of the current balance. You can create your own origination date ranges and assign a particular prepayment rate to all the instruments with origination dates within a particular Origination Date range.

Figure 3-58 Constant Prepayment Method



Prerequisites

Performing basic steps for creating or updating a Prepayment Rule.

Procedure

Users also have two options for determining the timing of the Constant Prepayment assumption. The options include:

- **Use Payment Dates:** This is the default option. If this option is selected, then Constant Prepayment Runoff will occur on scheduled payment dates only.
- **User Defined Prepayment Tenors:** If this option is selected, users can specify any runoff timing. For example, users might choose to define the prepayment to the Runoff on the first day of the forecast.

The above options will be available only for Asset Instrument types.

To define constant prepayment within the Prepayment Rule, follow the steps given in below sections:

- Use Payment Dates
- User Defined Prepayment Tenors

Use Payment Dates

1. Select the **Use Payment Dates** Option.
2. Select the **Payment Event Type** Option.
3. Select the **Start Origination Date** using the date picker. Alternatively, you can enter the Start Origination Date in the space provided.
   The first cell in the Start Origination Date Column and all the cells in the End Origination Date Column are read-only. This ensures that all possible origination dates must support reference values when Prepayment assumption lookups occur.

   Each row in the End Origination Date Column is filled in by the system when you click **Add Row** or save the Rule.

   The first Start Origination Date (in row 1) has a default value of January 1, 1900. When you enter a Start Origination Date in the next row, the system inserts a date that is a day before the previous End Origination Date Field.
4. Enter the Annual Prepayment Rate Percent that you want to apply to the instruments having origination dates in a particular Start Origination-End Origination Date range.

5. The **Percent** column represents the actual annualized prepayment percentage that the system uses to generate the principal runoff during the Cash Flow calculations.
6. Click **Add Row** to add additional rows and click the corresponding **Delete** button to delete a row.
7. You can add as many rows as possible in this table using **Add Multiple Row** Option. However, you need to enter relevant parameters for each new row.
8. You can also use the **Download Excel** feature to export the Prepayment rate information that is displayed on screen, modify, and copy-paste it back in the grid.
9. Define Seasonality assumptions if required to model date-specific adjustments to the annual prepayment rate. Inputs act as a multiplier, For Example, an input of 2 will double the prepayment rate in the indicated month.

User Defined Prepayment Tenors

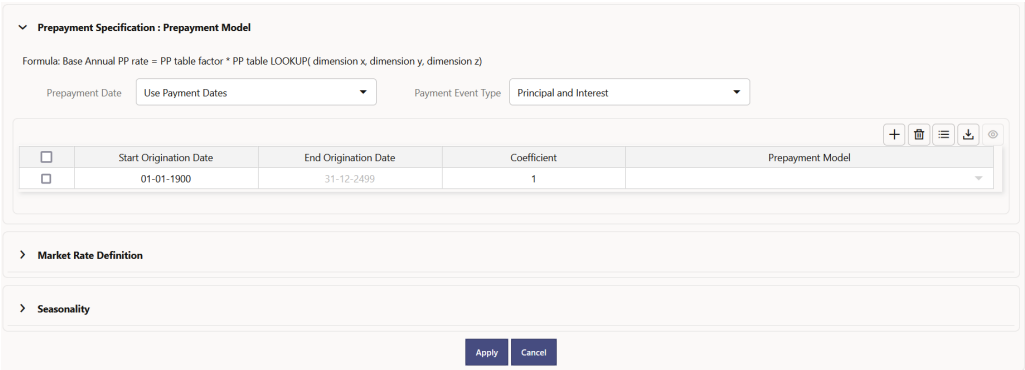
1. Select the **User Defined Prepayment Tenors** Option. This option allows you to specify the term and multiplier to the Prepayment Date for the row. The term is used to derive Prepayment Dates with reference to As of Date.
2. You can calculate the prepayment rate based on Current/Reducing Balance and Annual/De-annual Prepayment Rate.
3. Select the **Balance Type** as **Current Balance** or **Reducing Balance**.
   - If the Balance Type is selected as Current Balance, then the prepayment amount will be calculated using Principal Balance on As of Date. That is, without reducing the balance by any payment/prepayment that may have occurred between as of the date and prepayment date.
   - If the Balance Type is selected as Reducing Balance, then the prepayment amount will be calculated using balance as on Prepayment Date. That is, after reducing the Principal Balance by any payment/prepayment that may have occurred between as of date and prepayment date.
4. Select the Prepayment Rate Type as Annual Prepayment Rate or De-annual Prepayment Rate.
   When the Annual Prepayment Rate is selected then the prepayment rate entered in the screen is directly used.

   In the other case, the rate entered in the screen is de-annualized before calculating the prepayment amount.
5. Enter the **Start Origination Date** and **End Origination Date** ranges, add additional ranges as required using the Add Row button.
6. Enter the term to Runoff Tenor and Multiplier for each of the date ranges.
7. Enter the **Annual Prepayment Rate Percent** for each of the date ranges.
8. Enter 'Repeat' if you want the same prepayment to occur multiple times. By default, it is set to 1.
9. Click **Add Row** to add additional runoff % rows and click the corresponding **Delete** button to delete a row.
   You can add as many rows as possible in this table using **Add Multiple Row** Option. However, you need to enter relevant parameters for each new row.
10. Define Seasonality assumptions as required to model date specific adjustments to the annual Prepayment Rate. Inputs act as a multiplier, for example, an input of 2 will double the Prepayment Rate in the indicated month.

3.15.5.1.2 Defining Prepayment Model Method

Use this procedure to define prepayment assumptions using the Prepayment Model Calculation method. The Prepayment Model Method allows you to define more complex prepayment assumptions compared to the other Prepayment Methods. Under this method, prepayment assumptions are assigned using a custom Prepayment Model. You can build a Prepayment model using a combination of up to three Prepayment Drivers and define Prepayment Rates for various values of these drivers. Each driver maps to an attribute of the underlying transaction (age/term or rate) so that the Cash Flow Engine can apply a different Prepayment Rate based on the specific characteristics of the record. Note: All Prepayment Rates should be input as annual rate.

Figure 3-59 Prepayment Model Method



Prerequisites

- Prepayment Model must be created.
- Performing basic steps for creating or updating a Prepayment Rule.

Procedure

Users also have two options for determining the timing of the Prepayment Model assumption. The options include:

- **Use Payment Dates:** This is the default option. If this option is selected, then Prepayment Model Runoff will occur on scheduled payment dates only.
- **User Defined Prepayment Tenors:** If this option is selected, users can specify any runoff timing. For example, users might choose to define the Prepayment to the Runoff on the first day of the forecast.

The above options will be available only for Asset Instrument Types.

To define Prepayment Model within the Prepayment Rule, follow the steps given in below sections:

- Use Payment Dates
- User Defined Prepayment Tenors

Use Payment Dates

1. Select the **Use Payment Dates** Option.
2. Select the **Payment Event Type** Option.
3. Select the **Start Origination Date** using the date picker. Alternatively, you can enter the Start Origination Date in the space provided.
   The first cell in the Start Origination Date Column and all the cells in the End Origination Date Column are read-only. This ensures that all possible origination dates must support reference values when Prepayment assumption lookups occur.

   Each row in the End Origination Date Column is filled in by the system when you click Add Row or save the Rule.

   The first Start Origination Date (in row 1) has a default value of January 1, 1900. When you enter a Start Origination Date in the next row, the system inserts a date that is a day before the previous End Origination Date field.
4. Enter the Coefficient (if needed) by which the Prepayment Rate should be multiplied and select a predefined prepayment model that you want to apply to the instruments having origination dates in a particular Start Origination-End Origination Date range
5. Click **Add Row** to add additional rows and click the corresponding **Delete** Button to delete a row.
6. You can add as many rows as possible in this table using **Add Multiple Row** Option. However, you need to enter relevant parameters for each new row.
7. You can also use the **Download Excel** feature to export the Prepayment rate information that is displayed on screen, modify, and copy-paste it back in the grid.
8. Define Market Rate Definition.
9. Define the source for the Market Rate by Selecting an Index (Interest Rate Code) from the list of values.
10. Enter the Spread. The spread is added to the rate from the underlying interest rate curve to determine the market rate.
11. Select an **Associated Term** as Remaining Term, Reprice Frequency, or Original Term.
12. Define Seasonality assumptions if required to model date-specific adjustments to the annual prepayment rate. Inputs act as a multiplier, For Example, an input of 2 will double the prepayment rate in the indicated month.

User Defined Prepayment Tenors

1. Select the **User Defined Prepayment Tenors** Option. This option allows you to specify the term and multiplier to the prepayment date for the row.
2. You can calculate the Prepayment Rate based on Current/Reducing Balance and Annual/De-annual Prepayment Rate.
3. Select the **Balance Type** as **Current Balance** or **Reducing Balance**.
   - If the Balance Type is selected as Current Balance, then the Prepayment Amount will be calculated using CUR_PAR_BAL on As of Date. That is, without reducing the balance by any payment/prepayment that may have occurred between as of the date and prepayment date.
   - If the Balance Type is selected as Reducing Balance, then the prepayment amount will be calculated using balance as on Prepayment Date. That is, after reducing the CUR_PAR_BAL by any payment/prepayment that may have occurred between As of Date and Prepayment Date.

4. Select the **Prepayment Rate Type** as **Annual Prepayment Rate** or **De-annual Prepayment Rate**.
   When the Annual Prepayment Rate is selected then the prepayment rate entered in the screen is directly used.

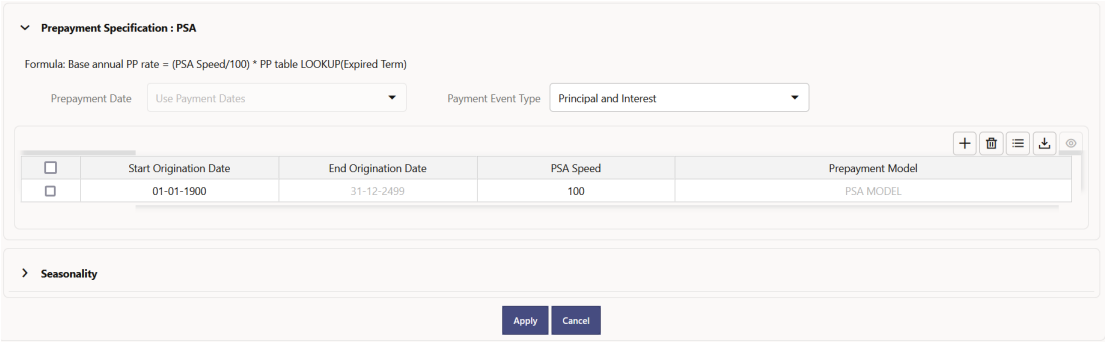
   In the other case, the rate entered in the screen is de-annualized before calculating the Prepayment Amount.
5. Specify the Prepayment Model Parameters.
6. Select the Start Origination Date using the date picker. Alternatively, you can enter the Start Origination Date in the space provided.
7. Enter the Coefficient (if needed) by which the Prepayment Rate should be multiplied.
   This multiple is applied to the instruments for which the Origination Date lies in the range defined in the Start Origination Date-End Origination Date fields.
8. Select a predefined prepayment model from the Prepayment model Rule list of values. Click the V**iew Prepayment Model** icon to preview the selected Prepayment Model.
   The system uses the Prepayment Model assumptions to calculate the Prepayment Amounts for each period. You need to associate a prepayment model for every Start Origination-End Origination Date range.
9. Click **Add Another Row** to add additional rows and click the corresponding **Delete** button to delete a row.
10. You can add as many rows in this table using **Add Multiple Row** Option. However, you need to enter relevant parameters for each new row.
11. You can also use the **Download Excel** feature to export the Prepayment Rate Information that is displayed on screen, modify, and copy-paste it back in the grid.
12. Enter the term to runoff tenor and multiplier for each of the date ranges.
13. Enter 'Repeat' if you want the same prepayment to occurs multiple times. By default, it is set to 1.
14. Define the source for the Market Rate by Selecting an Index (Interest Rate Code) from the list of values.
15. Enter the Spread. The spread is added to the rate from the underlying Interest Rate Curve to determine the Market Rate.
16. Select an **Associated Term** as Remaining Term, Reprice Frequency, or Original Term.
17. Define Seasonality assumptions as required to model date specific adjustments to the annual Prepayment Rate. Inputs act as a multiplier, for example, an input of 2 will double the Prepayment Rate in the indicated month.

3.15.5.1.3 Defining PSA Prepayment Method

Use this procedure to define Prepayment Assumptions using the PSA Prepayment Method. The PSA Prepayment method (Public Securities Association Standard Prepayment Model) is a Standardized Prepayment Model that is built on a single dimension, expired term. The PSA Curve is a schedule of prepayments which assumes that prepayments will occur at a rate of 0.2 percent CPR in the first month and will increase an additional 0.2 percent CPR each month until the 30th month and will prepay at a rate of 6 percent CPR thereafter ("100 percent PSA"). PSA Prepayment Speeds are expressed as a multiple of this base scenario. For example,

200 percent PSA assumes Annual Prepayment Rates will be twice as fast in each of these periods - 0.4 percent in the first month, 0.8 percent in the second month, reaching 12 percent in month 30 and remaining at 12 percent after that. A zero percent PSA assumes no prepayments. You can create your own Origination Date ranges and assign a particular PSA Speed to all the instruments with origination dates within a particular Origination Date range. PSA Speed inputs can be between 0 and 1667.

Figure 3-60 PSA Prepayment Method



Prerequisites

Performing basic steps for creating or updating a Prepayment Rule.

Procedure

Prepayment under this method occurs on Payment Dates only.

1. Select the **Payment Event Type** option.
2. Select the **Start Origination Date** using the date picker. Alternatively, you can enter the Start Origination Date in the space provided.
   The first cell in the **Start Origination Date** Column and all the cells in the **End Origination Date** Column are Read-Only. This ensures that all possible Origination Dates have supporting reference values when Prepayment Assumption Lookups occur. Each row in the End Origination Date Column is filled in by the system when you click Add Row or save the Rule.

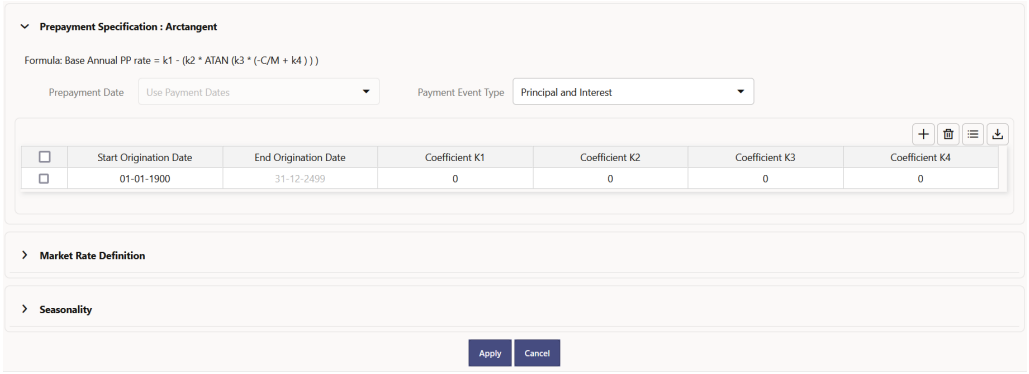
   The first Start Origination Date (in row 1) has a default value of January 1, 1900. When you enter a Start Origination Date in the next row, the system inserts a date that is a day before the previous End Origination Date Field.
3. Enter the PSA Speed that you want to apply to the instruments having Origination Dates in a particular Start Origination-End Origination Date range. The PSA Method is based on a standard PSA curve. You can view the seeded model by selecting the View Prepayment Model icon.
   The default value is 100 PSA and inputs can range from 0 to 1667.
4. Click **Add Row** to add additional rows and click the corresponding **Delete** Option to delete a row.
   You can add as many rows as possible in this table using Add Multiple Row Option. However, you need to enter relevant parameters for each new row.
5. You can also use the **Download Excel** Feature to export the Prepayment Rate Information that is displayed on screen, modify, and copy-paste it back in the grid.

6. Define Seasonality Assumptions as required to Model Date specific adjustments to the Annual Prepayment Rate. Inputs act as a multiplier, For example, an input of 2 will double the Prepayment Rate in the indicated month.

3.15.5.1.4 Defining the Arctangent Calculation Method

The Arctangent Calculation Method uses the Arctangent Mathematical Function to describe the relationship between Prepayment Rates and spreads (coupon rate less Market Rate). Use this procedure to define Prepayment Assumptions using the Arctangent Calculation Method.

Figure 3-61 Arctangent Calculation Method



Prerequisites

Performing basic steps for creating or updating a Prepayment Rule.

Procedure

Prepayment under this method occurs on Payment Dates only.

1. Select the **Payment Event Type** Option.
2. Select the Start Origination Date using the date picker. Alternatively, you can enter the Start Origination Date in the space provided.
3. Enter the values for the Arctangent Parameters (columns K1 through K4) for each Start Origination Date in the table. The valid range for each parameter is -99.9999 to 99.9999.
4. Click **Add Another Row**.
   You can add as many rows as possible in this table using **Add Multiple Row** Option. However, you need to enter relevant parameters for each new row.
5. You can also use the **Download Excel** Feature to export the Prepayment Rate Information that is displayed on screen, modify, and copy-paste it back in the grid.
6. Define the source for the Market Rate by Selecting an Index (Interest Rate Code) from the list of values.
7. Enter the Spread.
   The spread is added to the rate from the underlying Interest Rate Curve to determine the Market Rate.
8. Select an **Associated Term** as Original Term, Reprice Frequency, or Remaining Term.

9. Define the Seasonality Assumptions as required to model date specific adjustments to the Annual Prepayment Rate. Inputs act as a multiplier, For example, an input of 2 will double the prepayment rate in the indicated month.

3.15.6 View and Edit Prepayment Rule

You can view existing Prepayment Rule, and you can edit existing Prepayment Rules, provided you have read/write privileges.

To view and edit a Prepayment Rule, follow these steps:

1. Navigate to the **Assumption** and select **Prepayment Rule**.
2. Search for a Rule.
   For further information, see the Search Prepayment Rules section.
3. Click on the **Action** icon against the Prepayment Rule Name and select **View/Edit** to open the Rule you want to update.
4. Update the Rule details.
5. Click **Apply** or **Save**, depending on the Rule type.

3.15.7 Copy Prepayment Rule

You can copy Prepayment Rules to avoid having to enter data multiple times. This saves time and effort and reduces mistakes.

To copy a Prepayment Rule, follow these steps:

1. Navigate to the **Assumption** and select **Prepayment Rule**.
2. Search for a Rule.
   For more information, see the Search Prepayment Rules section.
3. Click on the **Action** icon against the Prepayment Rule Name and select **Save As** to duplicate the Rule.
4. Select a folder where you want to save the Rule copy.
5. Enter a unique name for the new Rule.
6. Enter a brief description of the Rule.
7. Click **Save**.

3.15.8 Delete Prepayment Rule

You can delete Prepayment Rules that are no longer required.

> **Note:**
>
> A Prepayment Rule cannot be retrieved after deletion.
>
> Restrictions on deleting Prepayment Rules are:
>
> You cannot delete Prepayment Rules if you have only Read privileges. Only users with Read/Write privileges and Prepayment Rule owners can delete Prepayment Rules.
>
> You cannot delete a Prepayment Rule that has a dependency.

To delete a Prepayment Rule, follow these steps:

1. Navigate to the **Assumption** and select **Prepayment Rule**.
2. Search for a Rule.
   For more information, see the Search Prepayment Rules section.
3. Click on the **Action** icon against the Prepayment Rule Name and select **Delete**.

3.15.9 Dependency Check

You can check dependencies for rules to know where a particular Prepayment Rule has been used. This also prevents accidental deletion of rules having dependencies.

To check the dependency of a rule, follow these steps:

- Navigate to the **Assumption** and select **Prepayment Rule**.
- Search for a rule. For further information, see the Search Prepayment Rules section.
- Click on the **Action** icon against the Prepayment Rule Name and select **Dependency Check** to the rule that you want to check for.

> **Note:**
>
> This is functionality will be released in future.

3.16 Prepayment Models

This module describes the procedure to build Prepayment Models. These Prepayment Models can be referenced by a Prepayment Rule to Model Prepayment Behavior of instruments based on a range of instrument level attributes.

The Prepayment Model consists of the Prepayment Dimensions and the Bucket Values for these Dimensions. To define the Prepayment Model Structure, you can select a maximum of three prepayment dimensions. After the dimensions and the number of buckets (tiers) are defined, you need to assign values to the buckets.

Topics:

- Prepayment Model Summary Page

- Search Prepayment Model
- Create Prepayment Models
- View and Edit Prepayment Models
- Copy Prepayment Model
- Delete Prepayment Model

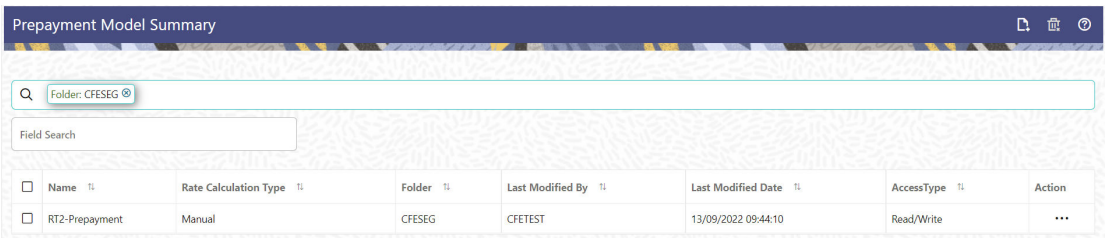
3.16.1 Prepayment Model Summary Page

This page holds all Prepayment Models and related functionality. You can navigate to other pages relating to the Prepayment Model from this page. The Prepayment Model Summary Page displays the following columns.

Table 3-42 Prepayment Model Rule – Fields and Descriptions

Column	Description
Name	Displays the Prepayment Model Rule's short name.
Rate Calculation Type	Displays the Prepayment Model type, such as Manual .
Created By	Displays the Folder name where the Prepayment Model Rule is saved.
Created Date	Displays the access type of Rule. It can be Read-Only or Read/Write.
Last Modified By	Displays the Name of the user who last modified the Prepayment Model Rule.
Last Modified Date	Displays the Date and Time when Prepayment Model was modified last.
Action	Displays the list of actions that can be performed on the Prepayment Model Rule. For more information, see Prepayment Model Rule – Icons and Descriptions.

Figure 3-62 Prepayment Model Summary page



The Action column on Prepayment Model Summary Page offers several actions that allow you to perform different functions. The following actions are available for the Prepayment Model Rule.

Table 3-43 Prepayment Model Rule – Icons and Descriptions

Fields	Description
Add	Click **Add** icon to build a new Prepayment Model Rule.
Multiple Delete	Select one or more Rules in the table and then click the (-) icon at the top right of the summary page to delete more than one Rule at the same time.
View/Edit	Click on the **Action** icon against the Prepayment Model Rule Name and select View/Edit to view or edit the contents of a Prepayment Model Rule in read/write format. Depending on user privileges the Rule will open in either View or Edit mode.
Save As	Click on the **Action** icon against the Prepayment Model Rule Name and select Save As to create a copy of an existing Prepayment Model Rule.
Delete	Click on the **Action** icon against the Prepayment Model Rule Name and select Delete to delete an existing Prepayment Model Rule.

3.16.2 Search Prepayment Models

Search for a Prepayment Model to perform any of the following tasks:

- View
- Edit
- Copy
- Delete
- Refresh

Prerequisites

Predefined Prepayment Model

Procedure

To search for a Prepayment Model Rule, follow these steps:

1. Navigate to the **Prepayment Model Summary** Page.
2. Enter the **Code, Name, Currency**, and **Description** of the Prepayment Model and click **Search** . Only Prepayment Model Rules that match the search criteria are displayed.

3.16.3 Create Prepayment Models

Creating a Prepayment Model comprises the following sub procedures:

1. Creating Prepayment Models

2. Defining the structure of the Prepayment Model.
3. Assigning Node Values

You can create Prepayment Models with following Rate Calculation options:

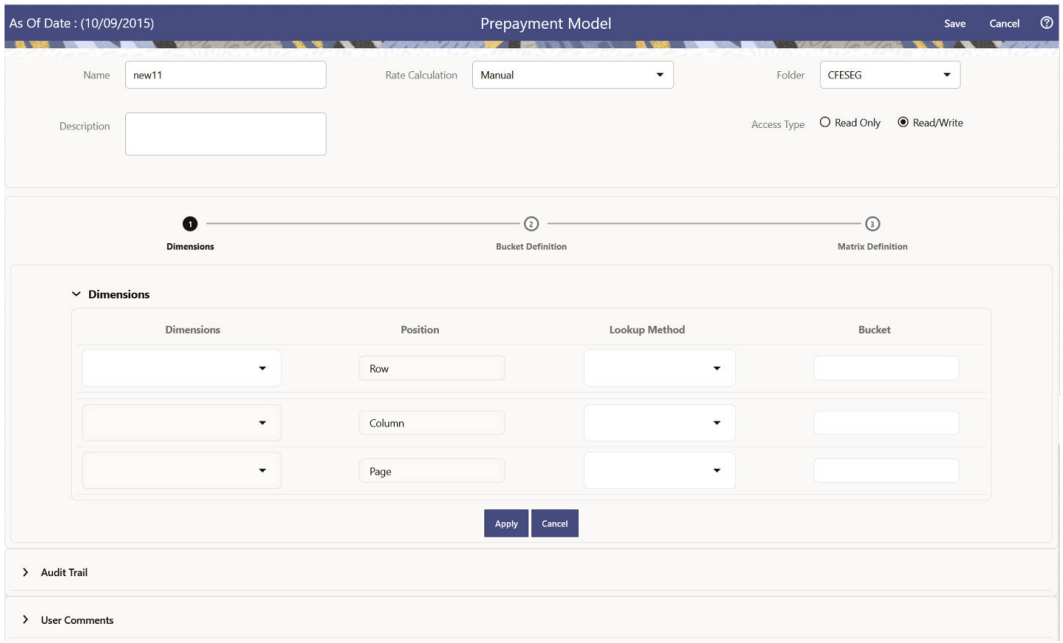
- Creating Prepayment Model with Rate Calculation as Manual
- Creating Prepayment Model with Rate Calculation as External Model

3.16.3.1 Creating Prepayment Model with Rate Calculation as Manual

To create a Prepayment Model Rule, follow these steps:

1. Navigate to the **Prepayment Model Summary** Page.
2. Click **Add**. The **Prepayment Model Details** Page is displayed.

Figure 3-63 Prepayment Model



3. Enter the following details:
   - **Name:** Enter the name and a brief description for the Prepayment Model. The name you assign to the Prepayment Model must be unique. The name can hold a maximum of 30 characters.
   - **Rate Calculation:** Select the Prepayment Model Rate Calculation Method as Manual. Using Manual Method, you can select maximum of three Prepayment Dimension and assign prepayment rates manually to selected dimension.
   - **Folder:** Select the Folder
   - **Description:** Enter the description of Prepayment Model Rule.
   - Select **Access Type**.
4. Follow below steps:
   Defining the Structure of the Prepayment Model Using Dimensions section

   Modifying the Table Structure Using Bucket Definition section

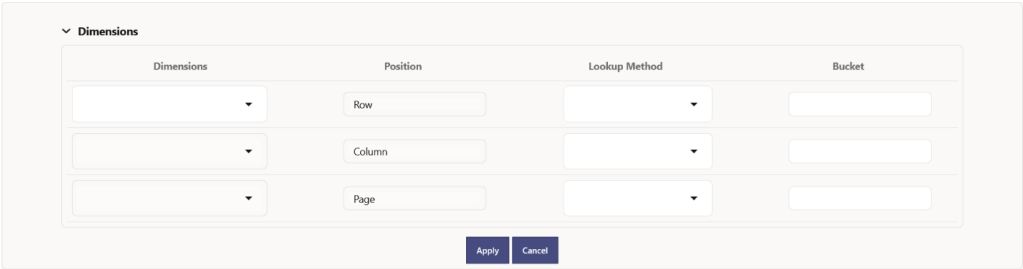
Prepayment Rates Using Matrix Definition

3.16.3.1.1 Defining the Structure of the Prepayment Model Using Dimensions section

This page consists of the Prepayment Dimensions and the Bucket Values for these Dimensions which you select on this page. To define the Prepayment Model Structure, you can select a maximum of three Prepayment Dimensions. After the dimensions and the number of buckets (tiers) are defined, you need to assign values to the buckets.

> **Note:**
>
> You can use the analogy of a three-dimensional table to understand how to deal with the Prepayment Dimensions. The first dimension you select would resemble the row (X-axis).
>
> The second dimension would act as the column (Y-axis). The final third dimension will be the page (Z-axis).

Figure 3-64 Dimensions section



1. Enter the following details in Dimension section:
   - Dimensions: Select the Dimension, such as Repricing Term, Rate Ratio, and others.
     The Dimension Section Influences the Prepayment Behavior of an instrument. You can build a Prepayment Model using up to three Prepayment Dimensions. Each dimension maps to an attribute of the underlying transaction (For example, age/term or rate and so on) so the Cash Flow Engine can apply a different Prepayment Rate based on the specific characteristics of the instrument.
   - Position: Shows the position of dimension as Row, Column or Page.
   - Lookup Method: Select the Lookup Method for selected Dimension. It is used to calculate Prepayment Rates for the Prepayment Dimension Values that do not fall exactly on the defined Prepayment Dimension Nodes. Oracle Asset Liability Management offers the following Lookup Methods:
   - Interpolation: Under this method, the Prepayment Rates are determined by calculating an exact value on an axis. This method assumes that Prepayment Speeds change on a straight-line basis between the two nodes and calculates accordingly.

- Range: Under this method, the prepayment rates are determined by calculating a range of values on an axis. This method assumes that the Prepayment Speed will remain the same for the entire range.
  The following example explains the differences between these two Lookup Methods. The following lists show the age and corresponding Prepayment Rates of instruments.

  Age

  12

  24

  36

  60

  Prepayment Rates

  5

  10

  15

  20

  Under the Interpolation method, the Prepayment Speeds increase gradually. In this example, the Interpolated Prepayment Rate of an instrument aged 30 months is 12.5%.

  This is exactly halfway between the 10% and 15% rate. However, the Range Method, the Prepayment Speeds increase in steps. Using the Range method, the Prepayment Rate is 10%, as this rate percentage would apply to the range from 24 months to 35.9999 months.
- Bucket: Enter the number of Buckets for the Dimension. This number may vary from dimension to dimension. Exact points for each dimension where attribute information has been defined.

2. If required, repeat the previous three steps for up to two additional Dimensions.

> **Note:**
>
> There are certain restrictions while defining Dimensions:
>
> - You must select the Dimension type for a row and define the values for that dimension.
> - You cannot define the second (row) dimension until you have defined the first (row) dimension. Similarly, the third dimension cannot be defined until you have defined the first two dimensions.
>
> The Define Dimensions Page is refreshed. You can now assign the Bucket Values for each dimension. At this point, you can also modify the structure of the table, if required.

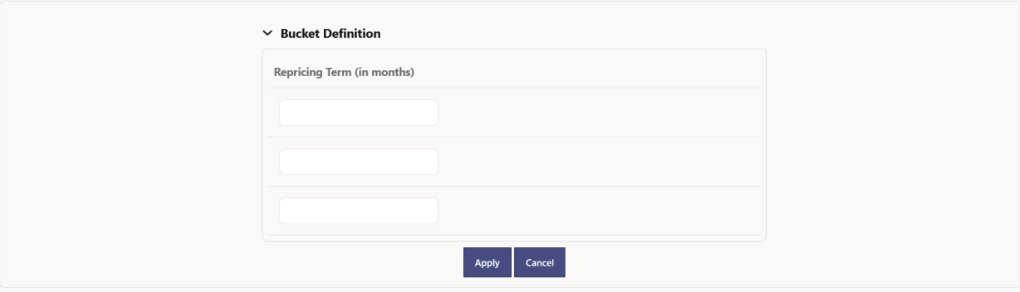
3.16.3.1.2 Modifying the Table Structure Using Bucket Definition section

The Bucket Definition section is used to perform following tasks:

- To add more buckets to a particular Dimension, update the number of buckets for the Dimension and click **Apply**.
- To delete buckets from a particular Dimension, reduce the number of buckets to the desired value and click **Apply**.

To change the Lookup Method of a particular Dimension, select the required method from the corresponding list of methods from the Dimensions Tab.

Figure 3-65 Bucket Definition Section



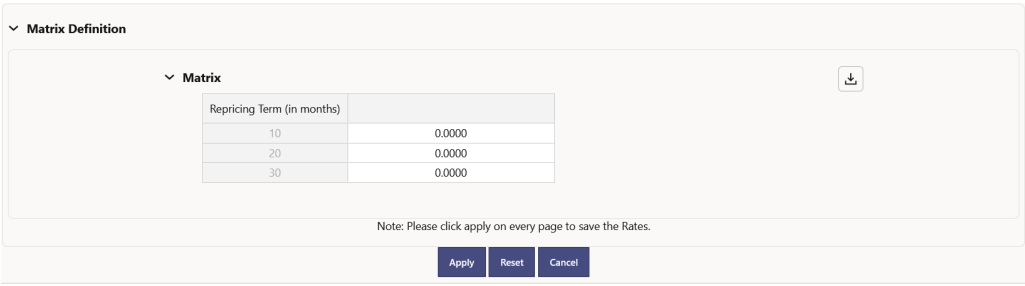
1. Assign values for each of the buckets.
2. Click **Apply**. The Prepayment Model, Prepayment Dimensions, and Buckets are saved.

3.16.3.1.3 Prepayment Rates Using Matrix Definition

1. Enter the Prepayment Rates in the Prepayment Model.

Bucket Values for the row and column dimensions are displayed as a table, while the bucket values for the page dimensions (if selected) are shown in the drop down list.

Figure 3-66 Matrix Definition Section

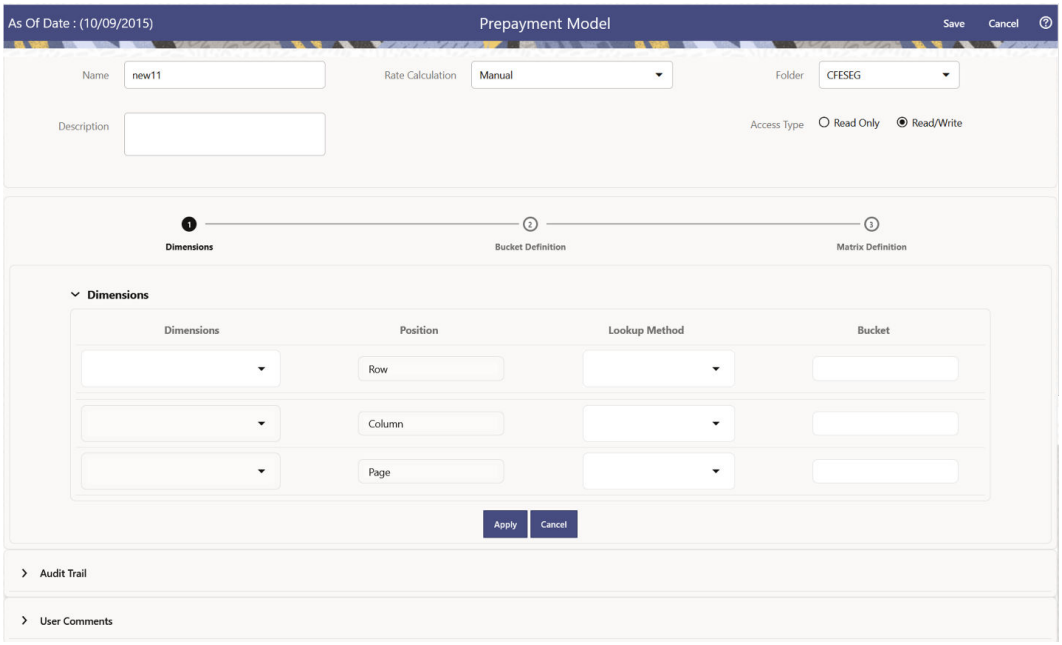


3.16.3.2 Creating Prepayment Model with Rate Calculation as External Model

To create a Prepayment Model Rule, follow these steps:

1. Navigate to the **Prepayment Model Summary** Page.
2. Click **Add**. The **Prepayment Model Details** Page is displayed.

Figure 3-67 Prepayment Model



3. Enter the following details:
   - **Name:** Enter the name and a brief description for the Prepayment Model. The name you assign to the Prepayment Model must be unique. The name can hold a maximum of 30 characters.
   - **Rate Calculation:** Select the Prepayment Model Rate Calculation Method as External Model. When you select External Model, Define Equation button will get activated to use External Prepayment Model. This is useful, when you want to do Prepayment Modelling outside PBSM and use the model equation to calculate Prepayment Rates.
   - **Folder:** Select the Folder
   - **Description:** Enter the description of Prepayment Model Rule.
   - Select **Access Type**.
4. Follow below steps:
   Defining the Structure of the Prepayment Model Using Dimensions section

   Defining Equation using Define Equation section

   Modifying the Table Structure Using Bucket Definition section

   Prepayment Rates Using Matrix Definition

3.16.3.2.1 Defining the Structure of the Prepayment Model Using Dimensions section

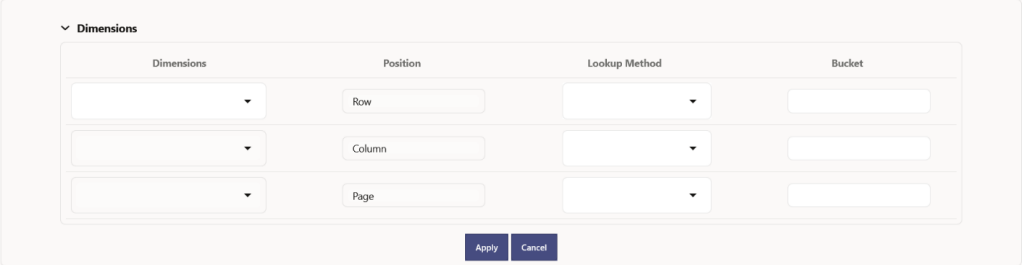
This page consists of the Prepayment Dimensions and the Bucket Values for these Dimensions which you select on this page. To define the Prepayment Model Structure, you can select a maximum of three Prepayment Dimensions. After the dimensions and the number of buckets (tiers) are defined, you need to assign values to the buckets.

Note:

You can use the analogy of a three-dimensional table to understand how to deal with the Prepayment Dimensions. The first dimension you select would resemble the row (X-axis).

The second dimension would act as the column (Y-axis). The final third dimension will be the page (Z-axis).

Figure 3-68 Dimensions section



1. Enter the following details in Dimension section:
   - Dimensions: Select the Dimension, such as Repricing Term, Rate Ratio, and others.
     The Dimension Section Influences the Prepayment Behavior of an instrument. You can build a Prepayment Model using up to three Prepayment Dimensions. Each dimension maps to an attribute of the underlying transaction (For example, age/term or rate and so on) so the Cash Flow Engine can apply a different Prepayment Rate based on the specific characteristics of the instrument.
   - Position: Shows the position of dimension as Row, Column or Page.
   - Lookup Method: Select the Lookup Method for selected Dimension. It is used to calculate Prepayment Rates for the Prepayment Dimension Values that do not fall exactly on the defined Prepayment Dimension Nodes. Oracle Asset Liability Management offers the following Lookup Methods:
   - Interpolation: Under this method, the Prepayment Rates are determined by calculating an exact value on an axis. This method assumes that Prepayment Speeds change on a straight-line basis between the two nodes and calculates accordingly.
   - Range: Under this method, the prepayment rates are determined by calculating a range of values on an axis. This method assumes that the Prepayment Speed will remain the same for the entire range.
     The following example explains the differences between these two Lookup Methods. The following lists show the age and corresponding Prepayment Rates of instruments.

     Age

     12

     24

36

60

Prepayment Rates

5

10

15

20

Under the Interpolation method, the Prepayment Speeds increase gradually. In this example, the Interpolated Prepayment Rate of an instrument aged 30 months is 12.5%.

This is exactly halfway between the 10% and 15% rate. However, the Range Method, the Prepayment Speeds increase in steps. Using the Range method, the Prepayment Rate is 10%, as this rate percentage would apply to the range from 24 months to 35.9999 months.

- Bucket: Enter the number of Buckets for the Dimension. This number may vary from dimension to dimension. Exact points for each dimension where attribute information has been defined.

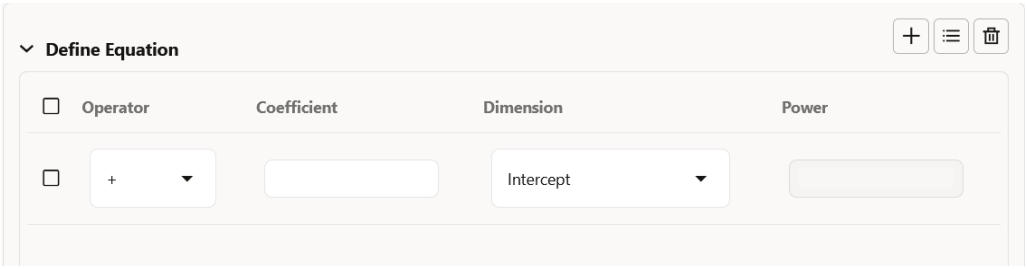
2. If required, repeat the previous three steps for up to two additional Dimensions.

> **Note:**
>
> There are certain restrictions while defining Dimensions:
>
> - You must select the Dimension type for a row and define the values for that dimension.
> - You cannot define the second (row) dimension until you have defined the first (row) dimension. Similarly, the third dimension cannot be defined until you have defined the first two dimensions.
>
> The Define Dimensions Page is refreshed. You can now assign the Bucket Values for each dimension. At this point, you can also modify the structure of the table, if required.

3.16.3.2.2 Defining Equation using Define Equation section

> **Note:**
>
> This section is not applicable to Manual Models. This section appears when you select External Model from Rate Calculation drop-down list.

Figure 3-69 Define Equation Section



To define Equation, perform the following steps:

1. Click **Define Equation**. Enter following details:
   - **Operator:** Select operator as +, -, *, or /
   - **Coefficient:** Enter the value of Coefficient
   - **Dimension:** Select the Dimension
   - **Power:** Enter the power for selected Dimension.
     For Example:

     Equation becomes:

     2 + 1.5 * original Term ^ 2 + 3 * Rate Diff ^ 2

     > **Note:**
     >
     > Before defining equation, you must select dimensions and accordingly dimensions drop-down will display values along with Intercept. For example, if you have already chosen Original term and Rate Difference as dimensions, then Dimension drop-down list would displays the following three values:
     >
     > – Intercept
     > – Original Term
     > – Rate Difference

     After defining all coefficients, Power, operators, click Equation to get the model equation.

     A confirmation message is displayed.
2. Click **Ok** to use the same for Prepayment Rate Calculations.
3. You can add new row for each term using **Add Row**. Multiple rows can be added using **Add Multiple Rows**.
4. Click **Apply**.

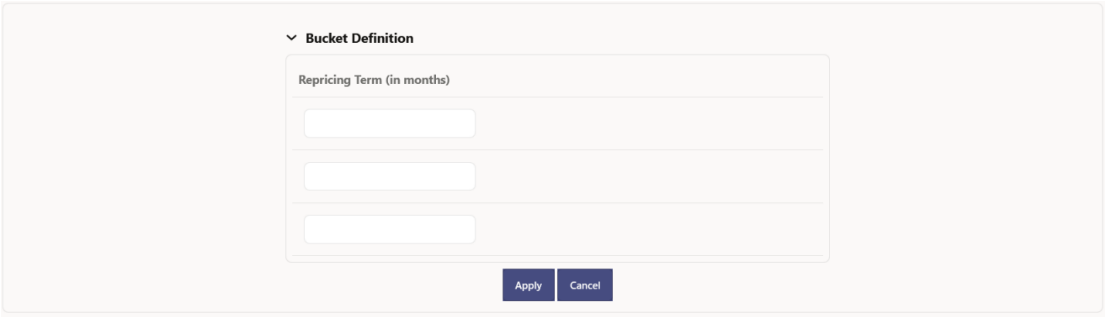
3.16.3.2.3 Modifying the Table Structure Using Bucket Definition section

The Bucket Definition section is used to perform following tasks:

- To add more buckets to a particular Dimension, update the number of buckets for the Dimension and click **Apply**.
- To delete buckets from a particular Dimension, reduce the number of buckets to the desired value and click **Apply**.

To change the Lookup Method of a particular Dimension, select the required method from the corresponding list of methods from the Dimensions Tab.

Figure 3-70 Bucket Definition Section



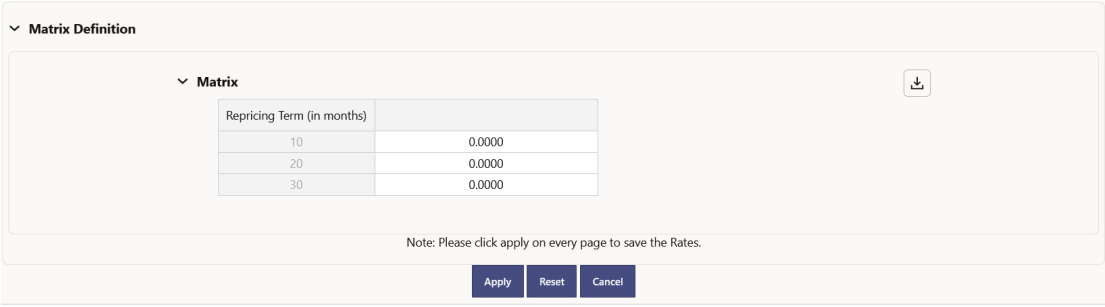
1. Assign values for each of the buckets.
2. Click **Apply**. The Prepayment Model, Prepayment Dimensions, and Buckets are saved.

3.16.3.2.4 Prepayment Rates Using Matrix Definition

1. Enter the Prepayment Rates in the Prepayment Model.

Bucket Values for the row and column dimensions are displayed as a table, while the bucket values for the page dimensions (if selected) are shown in the drop down list.

Figure 3-71 Matrix Definition Section



3.16.4 View and Edit Prepayment Model Rule

You can view existing Prepayment Model, and you can edit existing Prepayment Model Rules, provided you have Read/Write privileges.

To view and edit a Prepayment Model, follow these steps:

1. Navigate to the Assumption and select Prepayment Model.
2. Search for a Rule. For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the Prepayment Model Rule Name and select View/Edit to open the Rule you want to update.
4. Update the Rule details.
5. Click Apply or Save, depending on the Rule Type.

3.16.5 Copy Prepayment Model Rule

You can copy Prepayment Model Rules to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes.

To copy a Prepayment Model, follow these steps:

1. Navigate to the Assumption and select Prepayment Model.
2. Search for a Rule. For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Prepayment Model Rule Name and select Save As to duplicate the Rule.
4. Select a folder where you want to save the Rule copy.
5. Enter a unique name for the new Rule.
6. Enter a brief description of the Rule.
7. Click the Save button.

3.16.6 Delete Prepayment Model Rule

You can delete Prepayment Model Rules that are no longer required.

> **Note:**
>
> A Prepayment Model cannot be retrieved after deletion.
>
> Restrictions on deleting patterns are:
>
> You cannot delete Prepayment Model Rules if you have only Read privileges. Only users with Read/Write privileges and Prepayment Model owners can delete Prepayment Model Rules.
>
> You cannot delete a Prepayment Model that has a dependency.

To delete a Prepayment Model, follow these steps:

1. Navigate to the Assumption and select Prepayment Model.
2. Search for a Rule. For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Prepayment Model Rule Name and select Delete.

3.16.7 Dependency Check

You can check dependencies for rules to know where a particular Prepayment Model Rule has been used. This also prevents accidental deletion of rules having dependencies.

To check the dependency of a rule, follow these steps:

1. Navigate to the Assumption and select Prepayment Model.
2. Search for a rule. For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the Prepayment Model Rule Name and select Dependency Check to the rule that you want to check for.

> **Note:**
>
> This is functionality will be released in future.

3.17 Behavior Pattern Rule

The Behavior Pattern (BP) functionality works similarly to amortization types. The Behavior Pattern code is assigned at the detail instrument level, and these designations are evaluated by the cash flow engine (CFE) for calculations. However, Behavior Patterns are portfolio level property rather than instrument level. Generally, a bank processes aggregated data for non-maturing products. In this case, the Behavior Pattern is assigned effectively at the portfolio level. If you are using CFE with any other service, then data is required at the instrument level and BP is also assigned accordingly.

In this case, you must track the changes to Behavior Patterns and assign appropriate codes to affected instruments. Due to this, only one BP can be used by the CFE in the CFE processes for current business. If you want to model multiple types of BP under varying scenarios, then you can use a Behavior Pattern Rule.

The Behavior Pattern Rule UI allows you to group Behavior Pattern codes (behavioral assumptions) together in a set at the Product/Currency level which then can be rotated to select a value on a combination. You can select which behavior assumption pattern to use and the underlying Behavior Pattern in that set will affect the data on processing

This chapter describes the procedure for working with and managing the Behavior Pattern rules.

Topics

- Behavior Pattern Rule Summary Page
- Search Behavior Pattern Rule
- Create Behavior Pattern Rule
- View and Edit Behavior Pattern Rule
- Copy Behavior Pattern Rule
- Delete Behavior Pattern Rule

3.17.1 Behavior Pattern Rule Summary Page

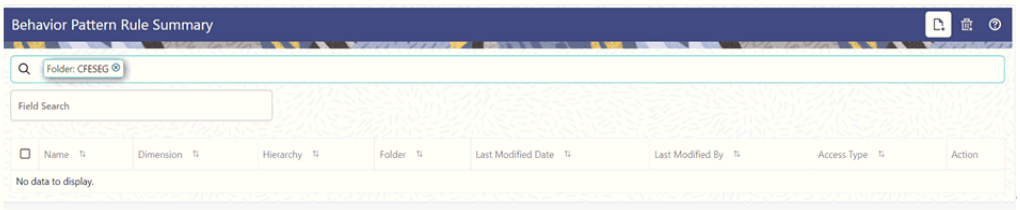
This page is the gateway to all Behavior Pattern Rules and related functionality. You can navigate to other pages relating to Behavior Pattern Rules from this point.

The Behavior Pattern Rule Page displays the following columns.

Table 3-44 Behavior Pattern Rule – Fields and Descriptions

Column	Description
Name	Displays the Behavior Pattern Rule's Short Name. Mouse over the Name field to view the Code and Description details.
Dimension	Displays the Dimension used to define the Behavior Pattern Rule
Hierarchy	Displays the Hierarchy used to define the Behavior Pattern Rule
Folder	Displays the Folder name where the Behavior Pattern Rule is saved.
Last Modified By	Displays the Name of the user who last modified the Behavior Pattern Rule.
Last Modified Date	Displays the Date and Time when Behavior Pattern Rule was modified last.
Action	Displays the list of actions that can be performed on the Behavior Pattern Rule. For more information, see Behavior Pattern Rule – Icons and Descriptions.

Figure 3-72 Figure 1: Behavior Pattern Rule Summary Page



The Action column on the Behavior Pattern Rule Summary Page offers several actions that allow you to perform different functions. The following actions are available for the Behavior Pattern Rule.

Table 3-45 Behavior Pattern Rule – Icons and Descriptions

Fields	Description
Add	Click Add icon at the top right of the Summary Page to build a new Behavior Pattern Rule.

Table 3-45 (Cont.) Behavior Pattern Rule – Icons and Descriptions

Fields	Description
Multiple Delete	Select one or more rules in the table and then click the Delete icon at the top right of the Summary Page to delete more than one rule at the same time.
View/Edit	Click on the **Action** icon against the Behavior Pattern Rule Name and select View/Edit to view or edit the contents of a Behavior Pattern Rule in Read/Write format. Depending on User Privileges the rule will open in either View or Edit Mode.
Save As	Click on the **Action** icon against the Behavior Pattern Rule Name and select Save As to create a copy of an existing Behavior Pattern Rule.
Delete	Click on the **Action** icon against the Behavior Pattern Rule Name and select Delete to delete an existing Behavior Pattern Rule.
Dependency Check	Click on the **Action** icon against the Behavior Pattern Rule Name and select Dependency Check to view objects where selected Behavior Pattern Rule is used.

3.17.2 Search for Behavior Pattern Rules

Search for a Behavior Pattern Rule to perform any of the following tasks:

- View
- Edit
- Copy
- Delete
- Check Dependencies

Prerequisites

- Predefined Behavior Pattern Rules

Procedure

To search for Behavior Pattern Rules, do the following:

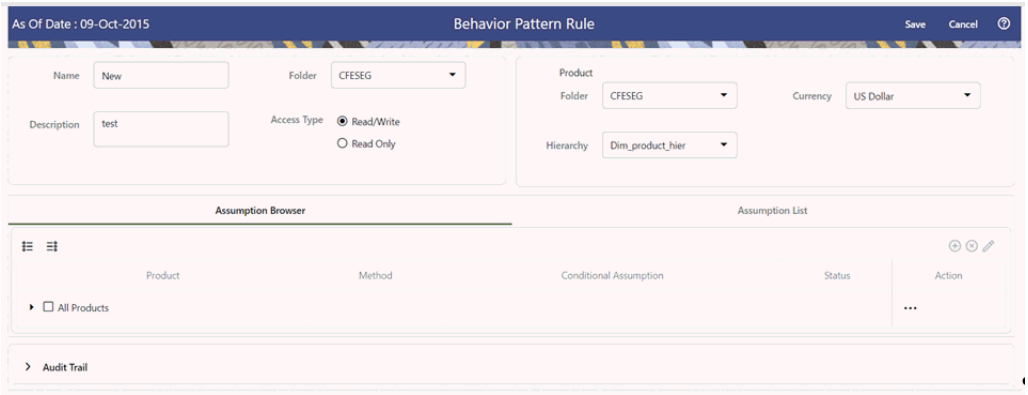
1. Navigate to the **Behavior Pattern Rule Summary** page.
2. Enter the **Code, Name, Description, Dimension, Hierarchy**, or **Folder** of the rule in Search Criteria.
3. Click the **Search** icon.

Only rules that match the search criteria are displayed.

3.17.3 Create Behavior Pattern Rules

You create behavior pattern rules to capture the principal run-off behavior of product types that do not have contractual maturities.

Figure 3-73 Behavior Pattern Rule Page



To create a Behavior Pattern rule, follow these steps:

1. Click **Add** icon from the top of the **Behavior Pattern Rule Summary** Page.
2. Enter the following Details.
   Table: Create Behavior Pattern Rule

Fields	Description
Name	Enter the name of the Behavior Pattern Rule.
Description	Enter the description of the Behavior Pattern Rule. This is an optional field.
Folder	Select the Folder where the Behavior Pattern Rule needs to be saved.
Access Type	Select the Access Type as Read-Only or Read/Write.

3. Select a **Product Folder**.
4. Select a **Product Hierarchy**. You can define methodologies at any level of the Hierarchical Product Dimension. The Hierarchical Relationship between the nodes allows the inheritance of methodologies from Parent nodes to Child nodes.
5. Select a **Currency**.
6. Select **Product(s)** from Assumption Browser.
7. Click **Add** from Assumption Browser Section.

3.17.3.1 Defining Behavior Pattern Rule

The definition of a Behavior Pattern rule is part of the Create or Edit Behavior Pattern rule process. When you click **Save** in the Create Behavior Pattern Rule process, the rule is saved and the **Behavior Pattern Rule Summary** page is displayed.

However, Behavior Pattern assumptions have not yet been defined for any of your products at this point. Typically, you would start defining your Behavior Pattern assumptions for product-currency combinations before clicking Save.

3.17.3.1.1 Defining Behavior Pattern Rule Using Node Level Assumptions

Node Level Assumptions allow you to define assumptions at any level of the Product dimension Hierarchy. The Product dimension supports a hierarchical representation of your chart of accounts, so you can take advantage of the parent-child relationships defined for the various nodes of your product hierarchies while defining rules. Children of parent nodes on a hierarchy automatically inherit the assumptions defined for the parent nodes. However, assumptions explicitly defined for a child take precedence over those at the parent level.

> **Note:**
>
> Using the default currency to setup assumptions can save data input time. At run time, the calculation engine uses assumptions explicitly defined for a product currency combination. If assumptions are not defined for a currency, the engine uses the assumptions defined for the product and the default currency. If the assumptions are the same across some or all currencies for a specific product, you can input assumptions for the default currency. Be careful using this option on screens where an Interest Rate.

Prerequisites

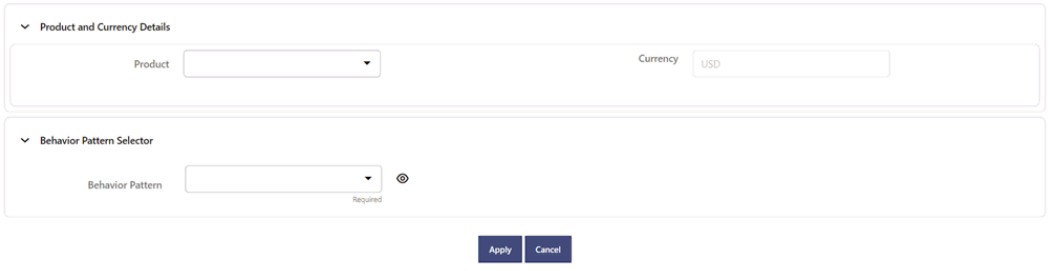
Performing basic steps for creating or editing a Behavior Pattern rule.

Procedure

To define Behavior Pattern Rule using Node Level Assumptions, follow these steps:

1. Navigate to the Behavior Pattern Rule Assumption Details Page after selecting a Currency and one or more products from the hierarchy.

Figure 3-74 Behavior Pattern Rule Assumption Details



2. Select a Product.
3. Select the Behavior Pattern from Behavior Pattern drop-down list. Here, the Behavior Pattern drop-down list shows the list of existing Behavior Patterns.
   Click below icon to view the details of selected Behavior Pattern.

Figure 3-75 View Behavior Pattern



You can select only one Behavior Pattern at a time.

4. Click Apply.
   The Assumption Browser Definition Page is displayed.

   At this point you can:

   - Continue selecting BP for other product-currency combinations by repeating the above procedure.
   - Complete the process by clicking Save.

When you click Save, the Behavior Pattern Rule assumptions are saved and the Behavior Pattern Rule Summary Page is displayed.

3.17.4 View and Edit Behavior Pattern Rule

You can view existing Behavior Pattern Rule, and you can edit existing Behavior Pattern Rules, provided you have read/write privileges.

To view and edit a Behavior Pattern Rule, follow these steps:

1. Navigate to the **Assumption** and select **Behavior Pattern Rule**.
2. Search for a Rule.
   For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the Behavior Pattern Rule Name and select **View/ Edit** to open the Rule you want to update.
4. Update the Rule details.
5. Click **Apply** or **Save**, depending on the Rule type.

3.17.5 Copy Behavior Pattern Rule

You can copy Behavior Pattern Rules to avoid having to enter data multiple times. This saves time and effort and reduces mistakes.

To copy a Behavior Pattern Rule, follow these steps:

1. Navigate to the **Assumption** and select **Behavior Pattern Rule**.
2. Search for a Rule.
   For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Behavior Pattern Rule Name and select **Save As** to duplicate the Rule.
4. Select a folder where you want to save the Rule copy.
5. Enter a unique name for the new Rule.
6. Enter a brief description of the Rule.
7. Click **Save**.

3.17.6 Delete Behavior Pattern Rule

You can delete Behavior Pattern Rules that are no longer required.

> **Note:**
>
> A Behavior Pattern Rule cannot be retrieved after deletion.
>
> Restrictions on deleting Behavior Pattern Rules are:
>
> You cannot delete Behavior Pattern Rules if you have only Read privileges. Only users with Read/Write privileges and Behavior Pattern Rule owners can delete Behavior Pattern Rules.
>
> You cannot delete a Behavior Pattern Rule that has a dependency.

To delete a Behavior Pattern Rule, follow these steps:

1. Navigate to the **Assumption** and select **Behavior Pattern Rule**.
2. Search for a Rule.
   For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Behavior Pattern Rule Name and select **Delete**.

3.18 Volatility Surface

The Volatility Curve UI allows you to select the curve. The curve selected will contain volatility rates. If you select this option, all other curve attributes become disabled and the curve is used exclusively for managing volatility details.

> **Note:**
>
> For FTP Volatility, both the Terms tab and Historical Rates tab are available with this option. Volatility curves are used in FTP to calculate the Rate Lock Option Costs.

For ALM Volatility, only the Historical Rates tab is available. After you have saved the Yield Curve, you cannot change the selected Volatility Curve.

ALM Volatility is used to evaluate embedded options for the Black 76 market valuation.

For more information, see the Cash Flow Engine Referernce Guide.

Topics:

- Volatility Surface Summary Page
- Search Volatility Surface Rule
- Create Volatility Surface Rule
- View and Edit Volatility Surface Rule
- Copy Volatility Surface Rule

- Delete Volatility Surface Rule

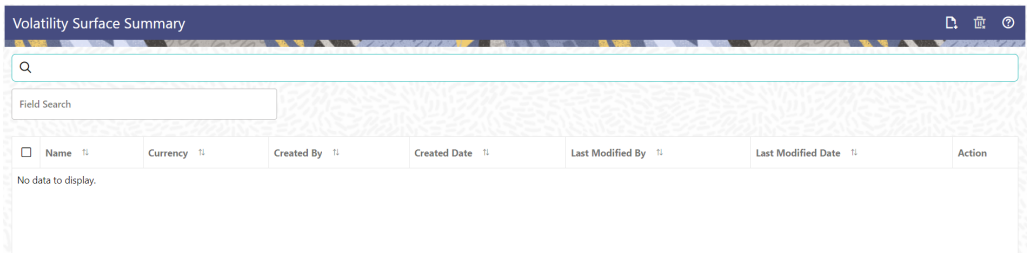
3.18.1 Volatility Surface Summary Page

This page is the gateway to all Volatility Surface Rules and related functionality. You can navigate to other pages relating to Volatility Surface Rules from this point. The Volatility Surface Summary page displays the following columns:

Table 3-46 Volatility Surface Rule Summary– Fields and Descriptions

Columns	Description
Name	Displays the Volatility Surface Rule's short name.
Currency	Displays the Volatility Surface Rule's currency.
Created By	Displays the Name of the user who created the Volatility Surface Rule.
Created Date	Displays the Date and Time when Volatility Surface was created.
Last Modified By	Displays the Name of the user who last modified the Volatility Surface Rule.
Last Modified Date	Displays the Date and Time when Volatility Surface was modified last.
Access Type	Displays the access type of rule. It can be Read-Only or Read/Write.
Action	Displays the list of actions that can be performed on the Volatility Surface Rule. For more information, see Volatility Surface Rule – Icons and Descriptions.

Figure 3-76 Volatility Surface Rule Summary Page



The Action column on the Volatility Surface Rule Summary page offers several actions that allow you to perform different functions. The following actions are available for the Volatility Surface Rules.

Table 3-47 Volatility Surface Rule – Icons and Descriptions

Fields	Description
Add	Click Add icon at the top right of the Summary page to build a new Volatility Surface Rule.

Table 3-47 (Cont.) Volatility Surface Rule – Icons and Descriptions

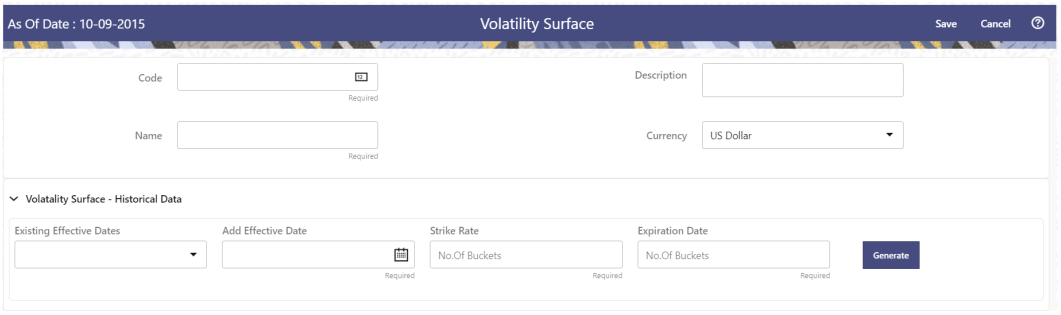
Fields	Description
Multiple Delete	Select one or more rules in the table and then click the (-) icon at the top right of the summary page to delete more than one rule at the same time.
View/Edit	Click on the **Action** icon against the Rule Name and select View/Edit to view or edit the contents of a Volatility Surface Rule in Read/ Write format. Depending on user privileges the rule will open in either View or Edit mode.
Save As	Click on the **Action** icon against the Rule Name and select Save As to create a copy of an existing Volatility Surface Rule.
Delete	Click on the **Action** icon against the Rule Name and select Delete to delete an existing Volatility Surface Rule.

3.18.2 Create Volatility Surface Rule

To create a Volatility Surface Rule, follow these steps:

1. Navigate to the **Volatility Surfaces Rule Summary** page.
2. Click **Add**. The Volatility Surface Rule page is displayed.

Figure 3-77 Volatility Surface Rule

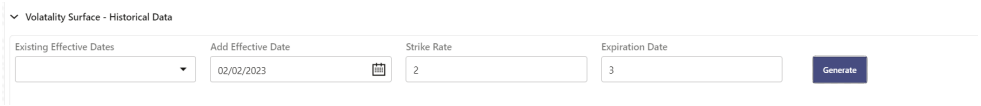


3. Enter the following details:
Table: Volatility Surface Details

Fields	Description
Code	Enter the code of the Volatility Surface Rate Rule.
Name	Enter the name of the Volatility Surface Rate Rule.
Description	Enter the description of the Volatility Surface Rule. This is an optional field.
Currency	Select the currency of the Volatility Surface Rate Rule.

4. Navigate to **Volatility Surface Historical Data** section.

Figure 3-78 Volatility Surface Section

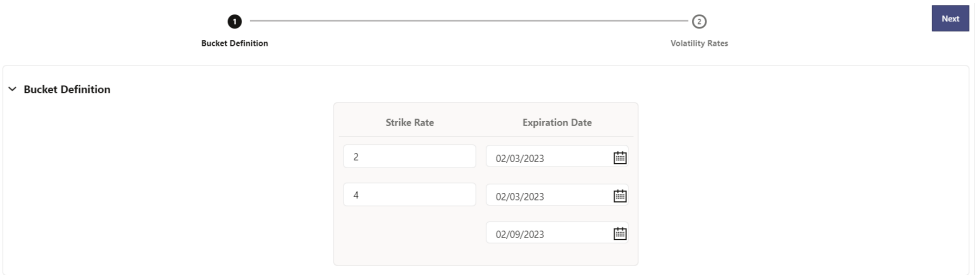


5. Enter the following details:
Table: Volatility Surface sections

Fields	Description
Existing Effective Dates	Select the existing Effective Dates.
Add Effective Dates	Select the As of Date as Effective Dates using Add Effective Dates field.
Strike Rate	This is the Vertical Axis dimension of historical rates for an ALM Volatility Surface
Expiration Date	This is the Horizontal Axis dimension of historical rates for an ALM Volatility Surface. Select the desired Expiration Term from the drop-down list to complete the Volatility Matrix

6. Click **Generate**. Enter the Strike Rate and Expiration Date in Bucket Definition section. Effective Dates must be entered for each Expiration Term.

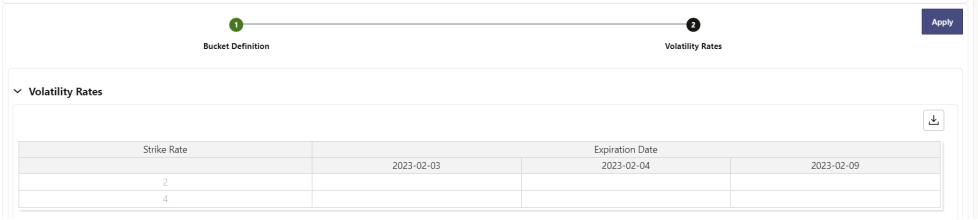
Figure 3-79 Bucket Definition



7. Click **Next**.

8. Enter the breakpoints for Strike Rate and Expiration Date in **Volatility Rates** section. For Strike Rate, enter values in ascending order. For Expiration Date, enter values in ascending order with values greater than the currently specified As of Date. At every intersection of Strike Rate and Expiration Date, enter a volatility amount in percent (that is, 25 = 25%).

Figure 3-80 Volatility Rates



9. Click **Apply**.
10. Click **Save**.

3.18.3 View and Edit Volatility Surface Rule

You can view existing Volatility Surface Rule, and you can edit existing Volatility Surface Rules, provided you have Read/Write privileges.

To view and edit a Volatility Surface Rule, follow these steps:

- Navigate to the **Reference Data** and select **Volatility Surface**.
- Search for a Rule. For further information, see the Search Volatility Surface section.
- Click on the **Action** icon against the Rule Name and select **View/Edit** to open the rule you want to update.
- Update the rule details.
- Click **Apply** or **Save**, depending on the rule type.

3.18.4 Copy Volatility Surface Rule

You can copy Volatility Surface Rules to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes.

To copy a Volatility Surface Rule, follow these steps:

1. Navigate to the **Reference Data** and select **Volatility Surface**.
2. Search for a Rule.
   For more information, see the Search Volatility Surface section.
3. Click on the **Action** icon against the Rule Name and select **Save As** to duplicate the rule.
4. Select a folder where you want to save the rule copy.
5. Enter a unique name for the new rule.
6. Enter a brief description of the rule. (Optional)
7. Select the access type.
8. Click the **Save** button.

3.18.5 Delete Volatility Surface Rule

You can delete Volatility Surface Rules that are no longer required.

> **Note:**
>
> A Volatility Surface Rule cannot be retrieved after deletion.
>
> Restrictions on deleting Volatility Surface Rules are:
>
> - You cannot delete Volatility Surface Rules if you have only Read privileges. Only users with Read/Write privileges and pattern owners can delete Volatility Surface Rules.
> - You cannot delete a Volatility Surface Rule that has a dependency.

To delete a Volatility Surface Rule, follow these steps:

1. Navigate to the **Reference Data** and select **Volatility Surface**.
2. Search for a Rule.
   For more information, see the Search Volatility Surface section.
3. Click on the **Action** icon against the Rule Name and select **Delete**.

3.19 IRRBB Standardized Approach

This module allows you to view, add, or delete currencies (or related shocks and parameters) to the Standardized Approach shocks table or to the IRRBB Standardized Approach Prepayment/Early Redemption scenario scalars.

The IRRBB Standardized Approach UI allows you to view, edit, and delete currencies, shocks, or other parameters currently stored in the IRRBB Standardized Approach shocks table FSI_IRC_STDAPRCH_SHOCKS as well as the Standardized Approach Prepayment/Early Redemption scalars table FSI_IRC_STDAPRCH_CPRER. This UI allows you to add, edit, or remove a currency along with its required parameters used in the Standardized Approach.

Allow Forecast Rates rules that are enabled for IRRBB forecasting to flag, highlight or otherwise signify that an IRC's currency is or is not presently defined in the above Standardized Approach table if the scenario is defined as a Standardized Approach shock.

3.19.1 Currency Shocks

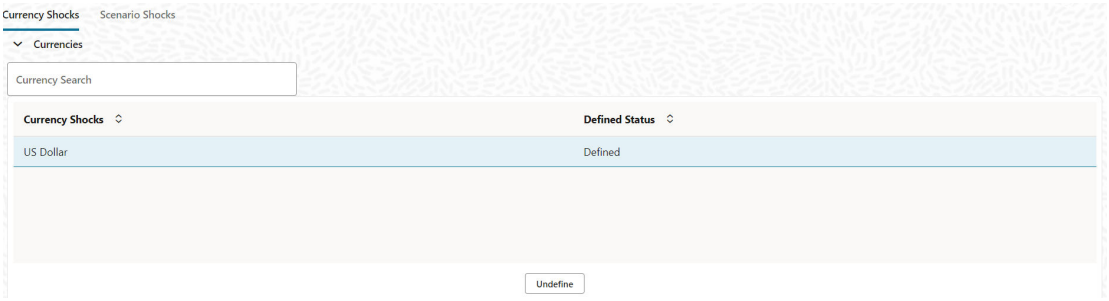
The Standardized Approach specifies that yield curves of specific currencies must be shocked in differing manners. There are 14 predefined currencies, however it is expected that these default values may be modified or that new currencies may be added/removed at the client's discretion.

Here, you can search, sort, and filter a Currency. "Defined Status" can only sort capability.

This section is divided into two blocks:

- The top block shows the list of available currenies.
- The bottom block allows you to View/Edit The Standardized Approach settings for this currency.

Figure 3-81 Currency Shocks



The top block lists all active, defined currencies as defined in Rate Management (FSI_CURRENCIES).

The status of Currency Shock is also displayed as Defined or Undefined. If the Currency details are matches to the IRRBB Standardized Approach table (FSI_IRC_STDAPRCH_SHOCKS), then the status of currency is "Defined" . Else, the status of currency is "Undefined".

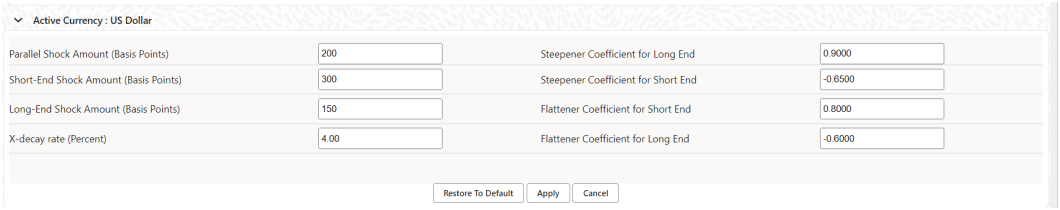
When you click Undefine button, a confirmation message is displayed: "The active currency will be permanently removed from IRRBB Standardized Approach Shocks. Continue?". Once you confirm, the active currency is deleted from the standardized Approach table FSI_IRC_STDAPRCH_SHOCKS and its status becomes "Undefined".

3.19.1.1 Editing of Currency Shocks

You can edit only one Currency Shock at a time.

1. Select a Currency Shock. The bottom block will display the details of the selected Currency Shock.
2. Edit the details of Active Currency Shock.

Figure 3-82 Editing of Currency Shocks



3. Click **Apply**.

The **Restore To Default** button will restore the currency to the original Basel Committee definition.

3.19.2 Scenario Shocks

The Scenario Shocks window allows you to view and edit the Standardized Approach prepayment and deposit early redemption scalars as stored in table FSI_IRC_STDAPRCH_CPRER. These values are Standardized Approach scenario dependent and not dependent on currency. The Conditional Prepayment Rate column holds a

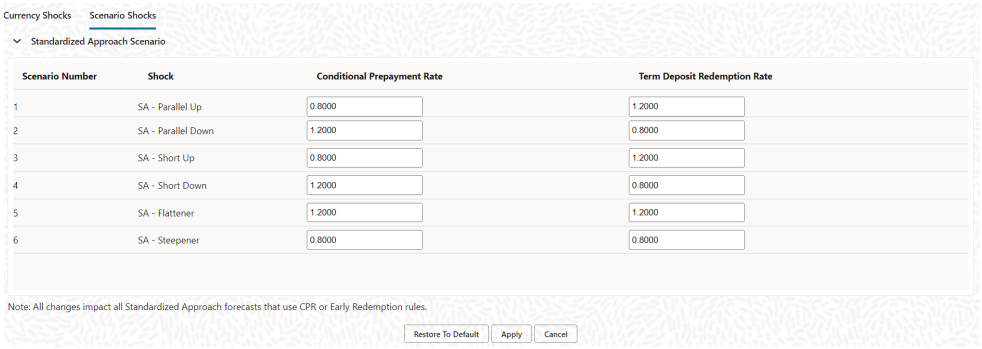
scaling value for prepayments for each Standardized Approach scenario. The Term Deposit Redemption Rate or early redemption holds a scaling value for Term Deposit Redemption for each Standardized Approach scenario.

3.19.2.1 Editing of Scenario Shocks

To edit a Scenario Shock, follow these steps.

1. Select Conditional Prepayment Rate field.
2. Edit the Conditional Prepayment Rate value.

Figure 3-83 Editing of Scenario Shocks



For Scenario Shocks, the input Conditional Prepayment Rate limit for is between 0 to 999.999999.

3. Edit the Term Deposit Redemption Rate value.
   For Scenario Shocks, the input limit for Term Deposit Redemption Rate is between 0 to 999.999999.
4. Click **Apply**.

3.20 Forecast Rates

Forecast Rate Scenario Assumptions allow you to define future interest rates, future economic indicators, future currency exchange rates, future interest rate volatility, and select behavior pattern rule for cash flow calculation. Interest rate forecasts are used to project cash flows, including pricing new business, repricing existing business, calculating prepayments, and determining discount methods. Interest rate volatility forecast are used for option valuation. Economic Indicator forecasts are used to calculate cash flow for inflation-indexed instruments, included in Behavioral Modeling and scenario or stress analysis. Currency Exchange Rate Forecasts are used to account for the effects of currency fluctuations on income.

The Forecast Rate Assumptions use interest rate curve, volatility surface, economic indicator, active and reporting currencies, and behavior pattern rule.

This module describes how to create a Forecast Rates Assumption Rule to forecast Cash Flows and, if you work with multiple currencies, to model relationships between Interest Rates and Exchange Rates.

Topics:

- Forecast Rates Rule Summary Page
- Search Forecast Rate Rule
- Create Forecast Rate Rule
- View and Edit Forecast Rate Rule
- Copy Forecast Rate Rule
- Delete Forecast Rate Rule
- Dependency Check

3.20.1 Forecast Rates Rule Summary Page

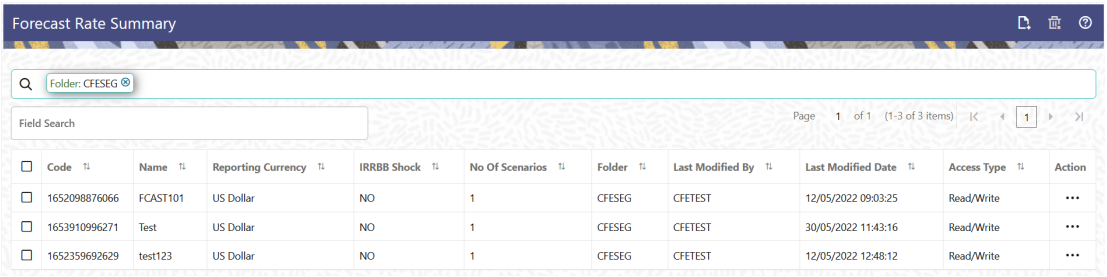
This page holds all Forecast Rate Rules and related functionality. You can navigate to other pages relating to the Forecast Rate Rule from this page.

The Forecast Rate Summary Page displays the following columns.

Table 3-48 Forecast Rate Rule Summary– Fields and Descriptions

Column	Description
Code	Displays the System ID of Forecast Rate Rule.
Name	Displays the Forecast Rate Rule's short name.
Reporting Currency	Displays the Reporting Currency selected in the Forecast Rates Rule.
IRRBB Shock	Displays Yes if IRRBB (Interest Rate Risk in Banking Book) scenario type is defined in the Forecast Rates Rule, Otherwise No is displayed.
No. of Scenario	Displays number of scenarios defined in the Forecast Rates Rule
Folder	Displays the Folder name where the Forecast Rate Rule is saved.
Last Modified By	Displays the Name of the user who last modified the Forecast Rate Rule.
Last Modified Date	Displays the Date and Time when Forecast Rate was modified last.
Access Type	Displays the access type of rule. It can be Read-Only or Read/Write.
Action	Displays the list of actions that can be performed on the Forecast Rate Rule. For more information, see Forecast Rule – Icons and Descriptions.

Figure 3-84 Forecast Rate Summary Page



The Action column on the Forecast Rate Summary Page offers several actions that allow you to perform different functions. The following actions are available for the Forecast Rate Summary Page.

Table 3-49 Forecast Rate rule – Icons and Descriptions

Fields	Description
Add	Click Add icon at the top right of the Summary Page to build a new Forecast Rate Rule.
Multiple Delete	Select one or more rules in the table and then click the (-) icon at the top right of the Summary Page to delete more than one rule at the same time.
Help	Click icon to view the Holiday Calendar Rule Help.
View/Edit	Click on the Action icon against the Forecast Rate Rule Name and select View/Edit to view or edit the contents of a Forecast Rate Rule in Read/Write format. Depending on user privileges the rule will open in either View or Edit Mode.
Save As	Click on the Action icon against the Forecast Rate Rule Name and select Save As to create a copy of an existing Forecast Rate Rule.
Delete	Click on the Action icon against the Forecast Rate Rule Name and select Delete to delete an existing Forecast Rate Rule.
Dependency Check	Click on the Action icon against the Forecast Rate Rule Name and select Dependency Check to generate a report on all rules that utilize your selected Forecast Rate.

3.20.2 Search Forecast Rate Rule

Search for a Forecast Rate Rule to perform any of the following tasks:

- View
- Edit
- Copy
- Delete
- Check Dependencies

Prerequisites

Predefined Forecast Rate Rule

Procedure

To search for a new Forecast Rate Rule, follow these steps:

1. Navigate to the **Forecast Rates Summary** Page.
2. Enter the **Code, Name**, and **Description** of the Forecast Rate Rule and click **Search** . Only Forecast Rate Rules that match the search criteria are displayed.

3.20.3 Create Forecast Rate Rule

To create a new Forecast Rate Rule, follow these steps:

1. Navigate to **Forecast Rates Summary** Page.
2. Click **Add** icon. The **Forecast Rates Details** Page is displayed.
3. Enter the following Details

Table 3-50 Forecast Rate Rule – Fields and Descriptions

Field	Description
Name	Enter the name of the Forecast Rate Rule.
Description	Enter the description of the Forecast Rate Rule. This is an optional field.
Folder	Select the Folder where the Forecast Rate Rule needs to be saved.
Access Type	Select the Access Type as Read-Only or Read/ Write.
IRRBB Shock	Select this checkbox if you want to define IRRBB Scenario. This option is available only in Asset Liability Management Cloud Service. If selected, IRRBB standardized and enhanced approach scenario types can be created.
Reporting Currency	Currencies that were marked as 'Reporting Currency' in Rate Management appear for selection here. Select one Reporting Currency.

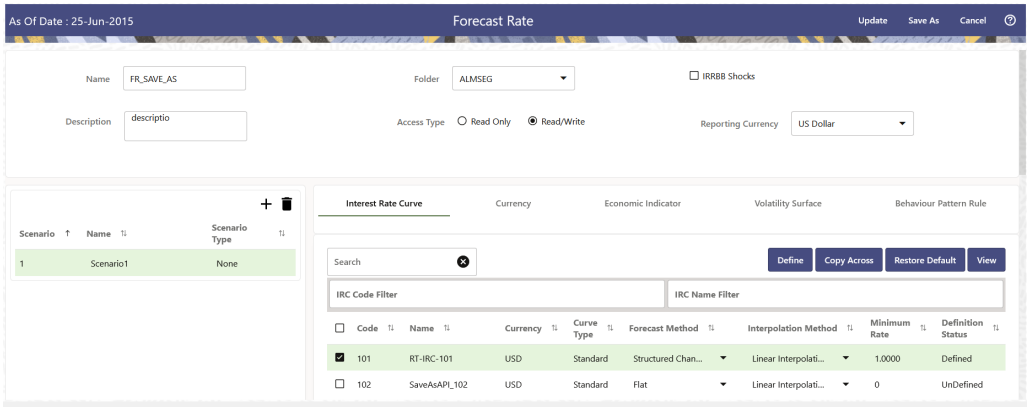
.

4. Scenario 1 is selected by default. You can change the name of scenario. Click + to add more scenario, if needed. More than one scenario can be created only in Asset Liability Management Cloud Service.
5. Scenario Type is 'None' by default. When IRRBB Shock is enabled then you can select one of the available values from second scenario onwards.
6. Click **Save**, if you want to save the Forecast Rate Rule and update it later.

3.20.3.1 Interest Rate Forecast Methods

The IRCs for all active currencies are listed under Interest Rate Curve Section. The options under Interest Rate Curve Forecast Method provide multiple ways to model the effects on portfolio Cash Flows due to Interest Rate changes.

Figure 3-85 Interest Rate Curve Forecast Rates



You can define Interest Rate Forecast for the following methods:

Table 3-51 Forecast Rate rule – Methods and Descriptions

Method	Description
Flat	Forecast no change in the Interest Rate for all dates beginning with the As-of Date.
Direct Input	Type Interest Rates directly for any modeling period or Interest Rate term.
Structured Change	Forecast exchange rates as an incremental change from the previous period. Forecast rate changes in terms of absolute or percent change, for any modeling period or interest rate term, such as: +100 basis points on Day 1 -200 basis points over the first 6 months Yield curve rotation (short point decreasing, long point increasing). This option is available only in Asset Liability Management Cloud Service.
Implied Forward	Forecast interest rates based on the yield-curve interest rates in effect at the as-of date and consistent with the modeling bucket definitions. This option is available only in Asset Liability Management Cloud Service.
Yield Curve Twist	Flatten or steepen the yield curve around a specific point on the curve. This option is available only in Asset Liability Management Cloud Service.
Change from Base	Make incremental changes to an existing forecast scenario. This option is available only in Asset Liability Management Cloud Service.

Table 3-51 (Cont.) Forecast Rate rule – Methods and Descriptions

Method	Description
IRRBB Standardized Approach Shocks	Forecast an interest rate shock according to one of the BCBS IRRBB Standardized Approach shock specifications (Scenario-level specification). This option is available only in Asset Liability Management Cloud Service
IRRBB Enhanced Approach Shocks	Forecast an interest rate shock according to user specifications that will flow into IRRBB Table B reporting. This option is available only in Asset Liability Management Cloud Service.

For more information, see the Cash Flow Engine Reference Guide.

The following Interpolation Methods are available.

Table 3-52 Forecast Rate Rule – Interpolation Methods and Descriptions

Method	Description
Linear Interpolation	Linear interpolation uses Linear Yield Curve smoothing. Linear Yield Curves are continuous but not smooth; at each knot point, there is a kink in the yield curve. You may not want to use a Linear Yield Curve with a model that assumes the existence of a continuous Forward Rate Curve, due to the nonlinear and discontinuous knot points of a Linear Yield Curve.
Cubic Spline of Yields	A cubic spline is a series of third-degree polynomials that have the form: $y = a + bx + cx^2 + dx^3$ These polynomials are used to connect the dots formed by observable data. The polynomials are constrained so they fit together smoothly at each knot point (the observable data point.) This means that the slope and the rate of change in the slope with respect to time to maturity have to be equal for each polynomial at the knot point where they join. If this is not true, there is a kink in the yield curve and they are continuous but not differentiable. Two more constraints make the Cubic Spline Curve unique. The first restricts the zero-maturity yield to equal the 1-day interest rate. The second restricts the yield curve at the longest maturity to be either straight (y''=0) or flat (y'=0).

Table 3-52 (Cont.) Forecast Rate Rule – Interpolation Methods and Descriptions

Method	Description
Quartic Spline	Quartic interpolation requires a minimum of 4 knot points. The quartic interpolation equation can be represented as: $Y = a + bX + cX^2 + dX^3 + eX^4$ The end knot points satisfy equations for one curve and all intermediate points satisfy two curves. Therefore, in a scenario with a minimum number of knot points, there are 6 equations. For n number of knot points, the number of equations is 2n-2. If n is the number of points to be interpolated, the order of the matrix to be formed is 5*(n-1) x 5*(n-1). The matrix is formed according to the following logic: The second derivative at the endpoints and the first derivative of the last point is Zero. At the points other than the endpoints, the value of the first derivatives, second derivatives, and the third derivatives of the function are equal.

In looking up the Forecast Rates, the Cash Flow Engine (where necessary) performs an interpolation between yield curve term points. For example, in determining a three-month rate from a yield curve that contains only a one-month rate and a six-month rate, the Cash Flow Engine performs an interpolation to determine the implied three-month rate. The Interpolation method used is defined by the selected interpolation method for the Interest Rate Curve.

Forecast rates for 360 calendar months starting from As-of-Date are generated.

Following options are available for Interest Rate Curve Forecast Rule:

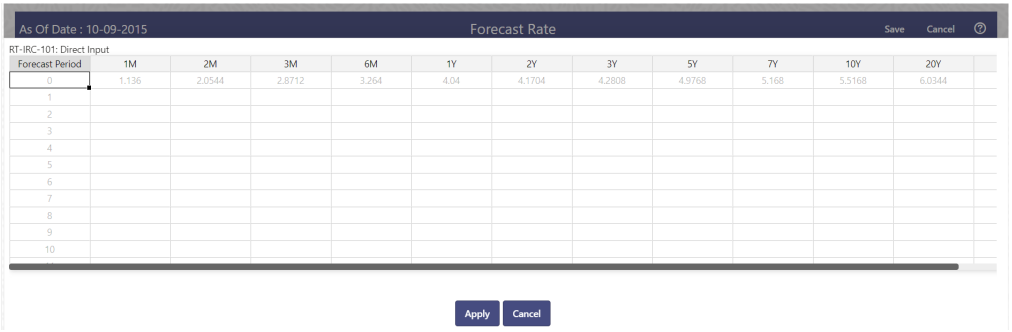
- Define
- Copy Across
- Restore Default
- View

Define

- **Flat Method**
  1. Select Interest Rate Curve using corresponding checkbox and select **Forecast Method** as **Flat**.
  2. Select the Interpolation method.
  3. Input Minimum Rate, if required.
  4. Click **Define**.
     The status of the Interest Rate Curve is changed to **Defined**.
- **Direct Input**
  1. Select Interest Rate Curve using corresponding checkbox and select **Forecast Method** as **Direct Input**.

2. Select the **Interpolation Method**.
3. Input Minimum Rate, if required.
4. Click **Define**.
   The **Direct Input** window is displayed:

Figure 3-86 Direct Input

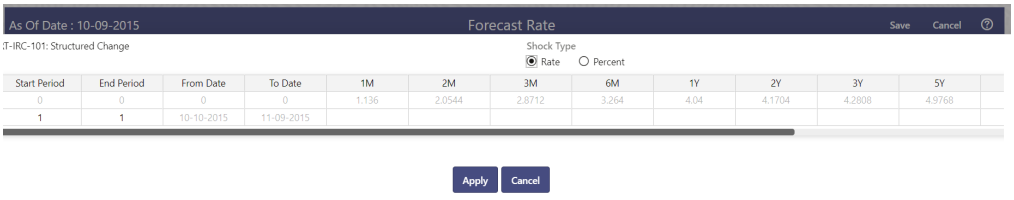


5. Enter data and click **Apply**. Right click on data grid and select 'Export to Excel' to save visible data to excel file. You can also copy directly from the grid and paste data from an excel file to the grid.
6. The status of the Interest Rate Curve is changed to **Defined**.

- **Structured Change**

1. Select Interest Rate Curve using corresponding checkbox and select **Forecast Method** as **Structured Change** .
2. Select the **Interpolation Method**.
3. Input Minimum Rate, if required.
4. Click **Define**.
   The **Structured Change** window is displayed:

Figure 3-87 Structured Change

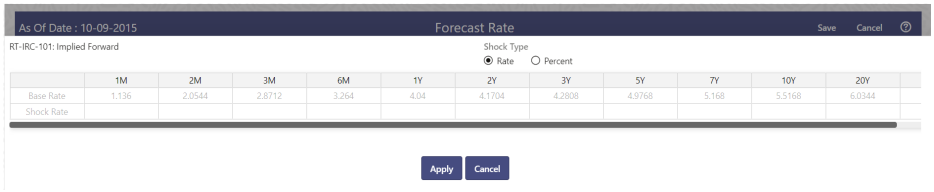


5. Select the Shock Type as Rate or Percent. Shock Type as Rate designates to absolute rate change and Shock Type as Percent designates to percent rate change.
6. Enter a shock amount to apply to the IRC in absolute rate or percentage change. Enter Start and End period from 1 to 360 months and corresponding shock amount to apply to the IRC. Right click on data grid to all more rows or delete rows. Use the Excel Import or Export feature to add the interest rate changes.
7. Click **Apply** to save.
8. The status of the Interest Rate Curve is changed to **Defined**.

- **Implied Forward**

  1. Select Interest Rate Curve using corresponding checkbox and select Forecast Method as Implied Forward.
  2. Select the **Interpolation** Method.
  3. Input Minimum Rate, if required.
  4. Click **Define**.
     The Implied Forward window is displayed:

Figure 3-88 Implied Forward

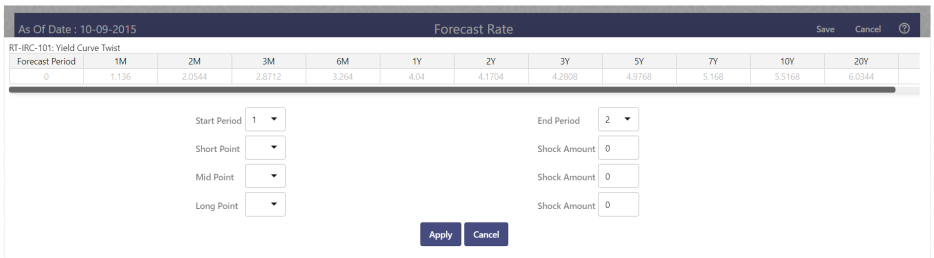


  5. Select the Shock Type as Rate or Percent. Shock Type as Rate designates to absolute rate change and Shock Type as Percent designates to percent rate change.
  6. Enter a shock amount to apply to the IRC in absolute rate or percentage change. If no change is required to the base curve, leave at 0.0, and click **Apply**.
  7. The status of the Interest Rate Curve is changed to Defined.

- **Yield Curve Twist**

  1. Select Interest Rate Curve using corresponding checkbox and select Forecast Method as Yield Curve Twist.
  2. Select the **Interpolation** Method.
  3. Input Minimum Rate, if required.
  4. Click **Define**.
     The Yield Curve Twist window is displayed:

Figure 3-89 Yield Curve Twist



  5. Select Start and End Period. Start Period must 1 or higher while highest End Period can be 360.
  6. Select the tenors using the Short Point, Mid Point, and Long Point.
  7. Add the required shock amounts for each tenor. At runtime and display time, the rate changes are added to the As-of-Date rates to create a future scenario.

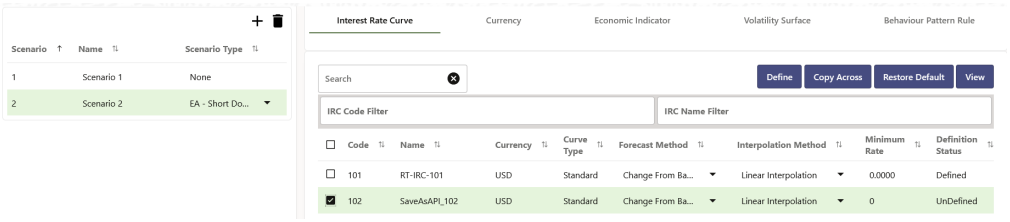
8. Click **Apply**.
   The status of the Interest Rate Curve is changed to Defined.

- **Change From Base**

> **Note:**
>
> This method is available from second scenario onwards.

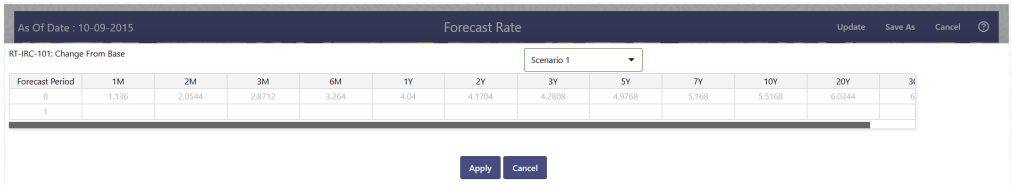
1. Select Scenario 2 or higher as Scenario.

Figure 3-90 Change From Base



2. Select Interest Rate Code using corresponding checkbox and select Forecast Method as Change from Base.
3. Select the Interpolation Method.
4. Input Minimum Rate, if required.
5. Click Define. The Change From Base window is displayed.

Figure 3-91 Change From Base



6. Scenario 1 is used as base scenario.
7. Enter the Forecast Period from 1 to 360 months and the corresponding change amount to apply to the base forecasts IRC. Right click on data grid to all more rows or delete rows. Use the **Excel Import or Export** feature to add the interest rate changes.
8. The status of the Interest Rate Curve is changed to Defined.

- **Standardized Approach Shocks**
  Standardized Approach shocks are different than other Interest Rate Rules as these are applied at the scenario level instead of at the IRC level. When you create a new Forecast Rates rule, the default Scenario 1 is always the base scenario for Standardized Approach purposes and cannot have a Standardized Approach shock definition.

1. In Forecast Rates window, select the IRRBB Shocks. This allows you to define either Standardized or Enhanced Approach Scenarios, or both for a single Forecast Rates Rule. Once a forecast rates rule is designated as IRRBB Shocks, this checkbox

cannot be unselected unless there are no defined scenarios as either Standardized or Enhanced Approach scenario type.

2. To apply a Standardized Approach scenario, click the Add Scenario.
3. In the Add Forecast Rates Scenario section, select the Scenario Type to apply the scenario. The following are the shock scenarios:
   - Standardized Approach Shock - Parallel UP
   - Standardized Approach Shock - Parallel DOWN
   - Standardized Approach Shock - Short UP
   - Standardized Approach Shock - Short DOWN
   - Standardized Approach Shock - Flattener
   - Standardized Approach Shock - Steppener
4. Only one Standardized Approach shock can be applied to a single scenario, and no two SA shocks of the same type may be applied to the same Forecast Rates rule. All qualifying IRCs will inherit this SA shock and cannot be changed except for their interpolation method and minimum rate.
5. Click Apply to make scenario as Standardized Approach shock.

- **Enhanced Approach Shocks**
  Like Standardized Approach shocks, Enhanced Approach shocks are scenario-level rules, and Scenario 1 is always referred to as the Base scenario for reporting purposes. However, unlike Standardized Approach shocks, the Forecast method for each IRC is not pre-established. This means that users must define the Forecast method, interpolation method and minimum rate for all Interest Rates in each scenario. Once defined and processed, the results will flow through into the Table B reporting.

  1. In the Forecast Rates window, select the IRRBB Shocks. This allows you to define either Standardized or Enhanced Approach scenarios, or both for a single Forecast Rate rule. After a Forecast Rate rule is designated as IRRBB Shocks, this checkbox cannot be unselected unless there are no defined scenarios as either Standardized or Enhanced Approach Scenario Type.
  2. To apply an Enhanced Approach scenario, click the Add Scenario. The following are the shock scenarios:
     a. Enhanced Approach Shock - Parallel UP
     b. Enhanced Approach Shock - Parallel DOWN
     c. Enhanced Approach Shock - Short UP
     d. Enhanced Approach Shock - Short DOWN
     e. Enhanced Approach Shock - Flattener
     f. Enhanced Approach Shock - Steppener
  3. Only one Enhanced Approach shock can be applied to a single scenario, and no two EA shocks of the same type can be applied to the same Forecast Rates rule. All IRCs in this scenario remain fully editable for the Forecast method, Interpolation method, and Minimum Rate.
  4. Click Apply to make the scenario as Enhanced Approach shock.

Copy Across

This allows you to copy Forecast Method and related details from one IRC to another.

For example, if you have 10 IRCs enabled in the application and you must input only one set of assumptions, then copy those assumptions across all enabled IRCs, instead of having to input 10 full sets, thereby saving a significant amount of input time.

> **Note:**
>
> You must select a defined IRC to Copy Across. For more information, see the Define section of Interest Rate Curve.

- **Flat Method**
  1. Select Interest Rate Curve using corresponding checkbox and select **Forecast Method** as **Flat**.
  2. Click **Copy Across**.
  3. Click **Apply Copy Across**.
  4. You can click **Cancel Copy Across** to cancel the Copy Across function.
- **Structured Change**
  1. Select Interest Rate Curve using the corresponding checkbox and select **Forecast Method** as **Structured Change.**.
  2. Click **Copy Across**.
  3. Click **Apply Copy Across**.
  4. You can click **Cancel Copy Across** to cancel the Copy Across function.
- **Implied Forward**
  1. Select Interest Rate Curve using corresponding checkbox and select Forecast Method as Implied Forward.
  2. Click Copy Across.
  3. Click Apply Copy Across.
  4. You can click Cancel Copy Across to cancel the Copy Across function.
- **Change From Base**
  1. Select Interest Rate Curve using corresponding checkbox and select Forecast Method as Change From Base.
  2. Click Copy Across.
  3. Click Apply Copy Across.
  4. You can click Cancel Copy Across to cancel the Copy Across function.

Restore Default

Use this action to reset previously entered details to Undefined status.

- **Flat Method**
  1. Select Interest Rate Curve using corresponding checkbox and select **Forecast Method** as **Flat**.

2. Click **Restore Default**.
3. The status of the Interest Rate Curve is changed to **Undefined**.

- **Direct Input**
  1. Select Interest Rate Curve using corresponding checkbox and select **Forecast Method** as **Direct Input**.
  2. Click **Restore Default**.
  3. The status of the Interest Rate Curve is changed to **Undefined**.
- **Structured Change**
  1. Select Interest Rate Curve using corresponding checkbox and select Forecast Method as Structured Change.
  2. Click **Restore Default**.
  3. The status of the Interest Rate Curve is changed to Undefined.
- **Implied Forward**
  1. Select Interest Rate Curve using corresponding checkbox and select Forecast Method as Implied Forward.
  2. Click **Restore Default**.
  3. The status of the Interest Rate Curve is changed to Undefined.
- **Yield Curve Twist**
  1. Select Interest Rate Curve using corresponding checkbox and select Forecast Method as Yield Curve Twist.
  2. Click **Restore Default**.
  3. The status of the Interest Rate Curve is changed to Undefined.
- **Change From Base**
  1. Select Interest Rate Curve using corresponding checkbox and select Forecast Method as Change From Base.
  2. Click **Restore Default**.
  3. The status of the Interest Rate Curve is changed to Undefined.

View

After defining Forecast Method and other parameters for an IRC you can view the forecasted interest rates by clicking this button.

- **Flat Method**
  1. Select Interest Rate Curve using corresponding checkbox and select **Forecast Method** as **Flat**.
  2. Click **View** to see the output table.
- **Direct Input**
  1. Select Interest Rate Curve using corresponding checkbox and select **Forecast Method** as **Direct Input.**
  2. Click **View** to see the Output Table.
- **Structured Change**

1. Select Interest Rate Curve using corresponding checkbox and select Forecast Method as S**tructured Change**.
2. Click **View** to see the Output Table.

- **Yield Curve Twist**
  1. Select Interest Rate Curve using corresponding checkbox and select Forecast Method as **Yield Curve Twist**.
  2. Click **View** to see the Output Table.
- **Implied Forward**
  1. Select Interest Rate Curve using corresponding checkbox and select Forecast Method as **Implied Forward**.
  2. Click **View** to see the Output Table.
- **Change From Base**
  1. Select Interest Rate Curve using corresponding checkbox and select Forecast Method as **Change From Base**.
  2. Click **View** to see the Output Table.

3.20.3.2 Define Currency Forecast Methods

The following Currency Forecast methods are available when you select a currency (other than the reporting currency) from the **Currency Codes** list. Currency forecast methods is available in Asset Liability Management Cloud Service only.

Figure 3-92 Currency Forecast Methods

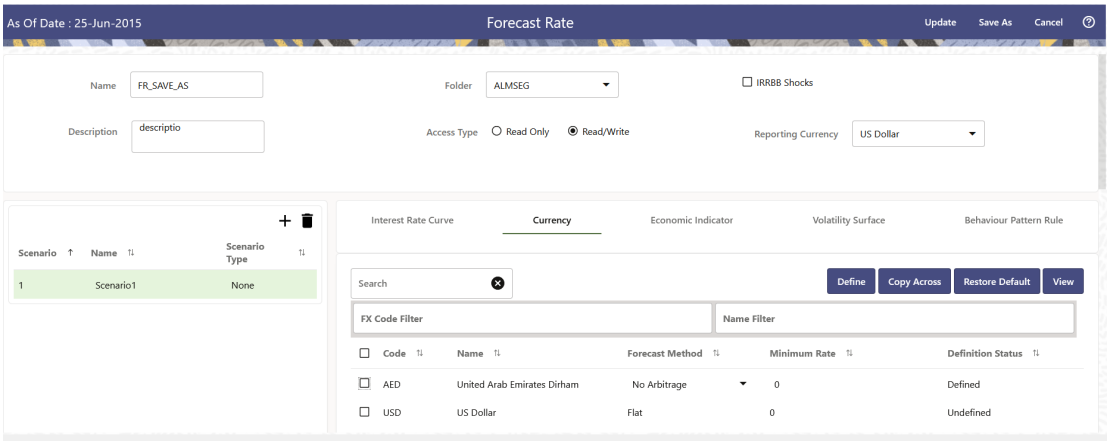


Table 3-53 Currency Forecast Methods

Method	Description
Flat	Forecast no change in the exchange rate for all dates beginning with the as-of date.
Structured Change	Forecast exchange rates as an incremental change from the previous period.
Direct Input	Type exchange rates to use in forecasting.

Table 3-53 (Cont.) Currency Forecast Methods

Parity	Forecast the exchange rate between two currencies based on forecasted interest rate associated with the currencies. The parity method can be used only if both the reporting currency and the selected currency have a Reference IRC. If reference IRC is not available for both or any one currency then flat method is used.
No Arbitrage	Forecast the exchange rate required to maintain a no-arbitrage condition between two currencies. The No Arbitrage method can be used only if both the reporting currency and the selected currency have a Reference IRC. If reference IRC is not available for both or any one currency then flat method is used.

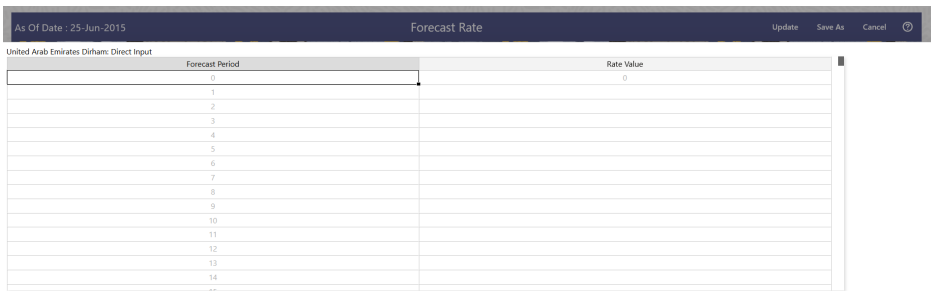
Following options are available for Currency Forecast Rule:

- Define
- Copy Across
- Restore Default
- View

Define

- **Flat Method**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Flat**.
  2. Input Minimum Rate, if required.
  3. Click **Define**.
  4. The status of the Currency Code is changed to **Defined**.
- **Direct Input**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Direct Input**.
  2. Input Minimum Rate, if required.
  3. Click **Define**. The **Direct Input** window is displayed:

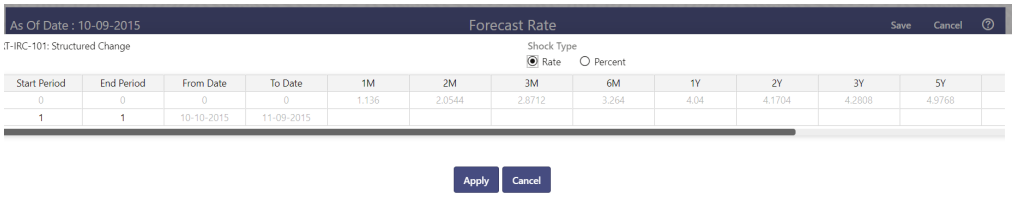
Figure 3-93 Direct Input window



4. Right click on data grid and select ‘Export to excel’ to save visible data to excel file. You can also copy directly from the grid and paste data from an excel file to the grid. Enter data and click **Apply**.
5. The status of the Currency Code is changed to **Defined**.

- **Structured Change**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Structured Change**.
  2. Input Minimum Rate, if required.
  3. Click **Define**. The **Structured Change** window is displayed:

Figure 3-94 Structured Change window



  4. Select the Shock Type as Rate or Percent. Shock Type as Rate designates to absolute rate change and Shock Type as Percent designates to percent rate change.
  5. Enter Start and End period from 1 to 360 months and corresponding shock amount to apply to the Currency. Right click on data grid to all more rows or delete rows. Use the **Excel Import or Export** feature to add the interest rate changes. Click **Apply**.
  6. The status of the Currency Code is changed to **Defined**.
- **Parity**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Parity**.
  2. Input Minimum Rate, if required.
  3. Click **Define**.
  4. The status of the Currency Code is changed to **Defined**.
- **No Arbitrage**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **No Arbitrage**.
  2. Input Minimum Rate, if required.
  3. Click **Define**.
  4. The status of the Currency Code is changed to **Defined**.

Copy Across

This allows you to copy Forecast Method and related details from one Currency to another.

For example, if you have 10 Currency codes enabled in the application and you must input only one set of assumptions, then copy those assumptions across all enabled Currency codes, instead of having to input 10 full sets, thereby saving a significant amount of input time.

You must select a defined Currency to use Copy Across. For more information, see the Define section of Currency.

- **Flat Method**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Flat**.
  2. Click **Copy Across**.
  3. Click **Apply Copy Across**.
  4. You can click **Cancel Copy Across** to cancel the Copy Across function.
- **Structured Change**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Structured Change**.
  2. Click **Copy Across**.
  3. Click **Apply Copy Across**.
  4. You can click **Cancel Copy Across** to cancel the Copy Across function.
- **Parity**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Parity**.
  2. Click **Copy Across**.
  3. Click **Apply Copy Across**.
  4. You can click **Cancel Copy Across** to cancel the Copy Across function.
- **No Arbitrage**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **No Arbitrage**.
  2. Click **Copy Across**.
  3. Click **Apply Copy Across**.
  4. You can click **Cancel Copy Across** to cancel the Copy Across function.

Restore Default

Use this action to reset previously entered details to Undefined status.

- **Flat Method**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Flat**.
  2. Click **Restore Default**.
  3. The status of the Currency Code is changed to **Undefined**.
- **Direct Input**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Direct Input**.
  2. Click **Restore Default**.
  3. The status of the Currency Code is changed to **Undefined**.
- **Structured Change**

1. Select Currency Code using corresponding checkbox and select Forecast Method as **Structured Change**.
2. Click **Restore Default**.
3. The status of the Currency Code is changed to **Undefined**.

- **Parity**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Parity**.
  2. Click **Restore Default**.
  3. The status of the Currency Code is changed to **Undefined**.
- **No Arbitrage**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **No Arbitrage**.
  2. Click **Restore Default**.
  3. The status of the Currency Code is changed to **Undefined**.

View

After defining Forecast Method and other parameters for a Currency you can view the forecasted Currency by clicking this button.

- **Flat Method**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Flat**.
  2. Click **View** to see the output table.
- **Direct Input**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Direct Input**.
  2. Click **View** to see the Output Table.
- **Structured Change**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Structured Change**.
  2. Click **View** to see the Output Table.
- **Parity**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **Parity**.
  2. Click **View** to see the Output Table.
- **No Arbitrage**
  1. Select Currency Code using corresponding checkbox and select Forecast Method as **No Arbitrage**.
  2. Click **View** to see the Output Table.

3.20.3.3 Define Economic Indicator Forecast Rule

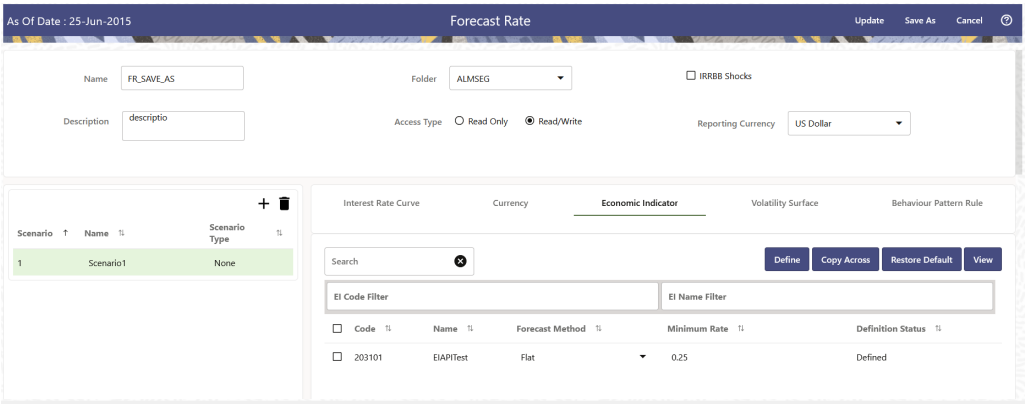
The Economic Indicators (EI) defined previously are listed under EI Section. The options under EI Forecast Method provide multiple ways to model the effects on Portfolio Cash Flows due to changes in inflation index and other micro or macro-economic parameters.

The following Economic Indicator Methods are available.

Table 3-54 Forecast Rate Rule – Economic Indicator Methods and Descriptions

Method	Description
Flat	Forecast no change in the EI rate for all dates beginning with the As-of Date.
Direct Input	Type-specific Economic Index Rates to use in forecasting.
Structured Change	Forecast the economic index as an incremental change from the previous period. This option is available only in Asset Liability Management Cloud Service.

Figure 3-95 Economic Indicator Forecast Rates



Following options are available for Economic Indicator Forecast Rule:

- Define
- Copy Across
- Restore Default
- View

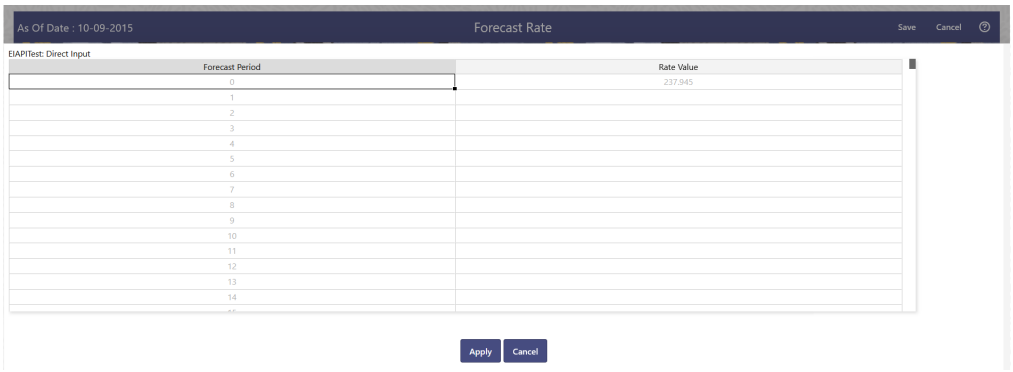
Define

- **Flat Method**
  1. Select Economic Indicator Code using corresponding checkbox, select **Forecast Method** as **Flat** and enter minimum rate.
  2. Click **Define**. The status of Economic Indicator Code is changed to **Defined**.

- **Direct Input**

  1. Select Economic Indicator Code using corresponding checkbox, select Forecast Method as **Direct Input** and enter minimum rate.
  2. Click **Define**. The **Direct Input** window is displayed:

Figure 3-96 Direct Input window

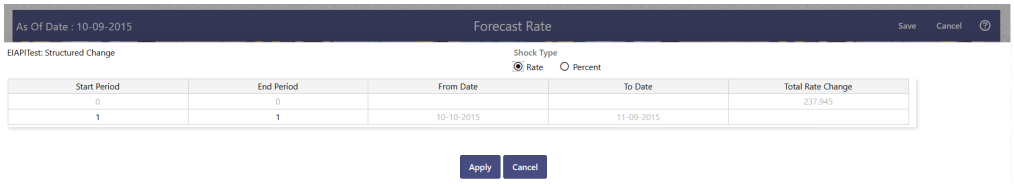


  3. Right click on data grid and select 'Export to Excel' to save visible data to excel file. You can also copy directly from the grid and paste data from an excel file to the grid. Enter data and click **Apply**.
  4. The status of Economic Indicator Code is changed to **Defined**.

- **Structured Change**

  1.
  2. Select Economic Indicator Code using corresponding checkbox, select Forecast Method as **Structured Change** and enter minimum rate.
  3. Click **Define**. The **Structured Change** window is displayed:

Figure 3-97 Structured Change window



  4. Enter Start and End period from 1 to 360 months and corresponding shock amount to apply to the Currency. Right click on data grid to all more rows or delete rows. Use the **Excel Import or Export** feature to add the interest rate changes. Enter data and click Apply.
  5. The status of Economic Indicator Code is changed to Defined.

Copy Across

This allows you to copy Forecast Method and related details from one Economic Indicator Code to another.

For example, if you have 10 Economic Indicator Codes enabled in the application and you must input only one set of assumptions, then copy those assumptions across all enabled

Economic Indicator Codes, instead of having to input 10 full sets, thereby saving a significant amount of input time.

> **Note:**
>
> You must select a defined Economic Indicator Code to use Copy Across. For more information, see the Define section of Economic Indicator.

- **Flat Method**
  1. Select Economic Indicator Code using corresponding checkbox and select Forecast Method as Flat.
  2. Click **Copy Across**.
  3. Click **Apply Copy Across**.
  4. You can click **Cancel Copy Across** to cancel the Copy Across function.
- **Direct Input**
  1. Select Economic Indicator Code using corresponding checkbox and select Forecast Method as Direct Input.
  2. Click **Copy Across**.
  3. Click **Apply Copy Across**.
  4. You can click **Cancel Copy Across** to cancel the Copy Across function.
- **Structured Change**
  1. Select Economic Indicator Code using corresponding checkbox and select Forecast Method as **Structured Change**.
  2. Click **Copy Across**.
  3. Click **Apply Copy Across**.
  4. You can click **Cancel Copy Across** to cancel the Copy Across function.

Restore Default

Use this action to reset previously entered details to Undefined status.

- **Flat Method**
  1. Select Economic Indicator Code using the corresponding checkbox and select **Forecast Method** as **Flat**.
  2. Click **Restore Default**.
  3. The status of the Economic Indicator Code is changed to **Undefined**.
- **Direct Input**
  1. Select Economic Indicator Code using the corresponding checkbox and select **Forecast Method** as **Direct Input**.
  2. Click **Restore Default**.
  3. The status of the Economic Indicator Code is changed to **Undefined.**
- **Structured Change**

1. Select Economic Indicator Code using the corresponding checkbox and select **Forecast Method** as **Structured Change**.
2. Click **Restore Default**.
3. The status of the Economic Indicator Code is changed to **Undefined.**

View

After defining forecast method and other parameters for an Economic Indicator Code you can view the forecasted interest rates by clicking this button.

- **Flat Method**
  1. Select Economic Indicator Code using corresponding checkbox and select **Forecast Method** as **Flat**.
  2. Click **View** to see the output table.
- **Direct Input**
  1. Select Economic Indicator Code using corresponding checkbox and select **Forecast Method** as **Direct Input**.
  2. Click **View** to see the output table.
- **Structured Change**
  1. Select Economic Indicator Code using corresponding checkbox and select **Forecast Method** as **Structured Change**.
  2. Click **View** to see the output table.

3.20.3.4 Define Volatility Surface Forecast Methods

The following Volatility Surface Forecast methods are available when you select a Volatility Surface from the **Volatility Surface Codes** list. Volatility Surface forecast method is available in Asset Liability Management Cloud Service only.

Figure 3-98 Volatility Surface Forecast Methods

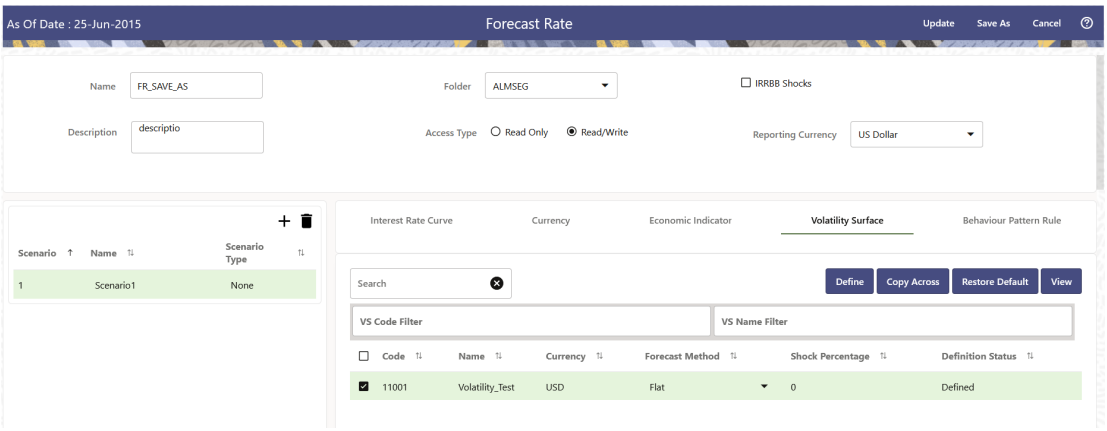


Table 3-55 Volatility Surface Forecast Methods

Method	Description

Table 3-55 (Cont.) Volatility Surface Forecast Methods

Flat	Forecast no change in the exchange rate for all dates beginning with the as-of date.
Global Shock	Single shock rate is defined and applied to base volatility matrix
Detail Shock	Shock rate is defined for every intersection of Strike & Expiry Date
Direct Input	Implied volatility is given as input for every intersection of Strike & Expiry Date

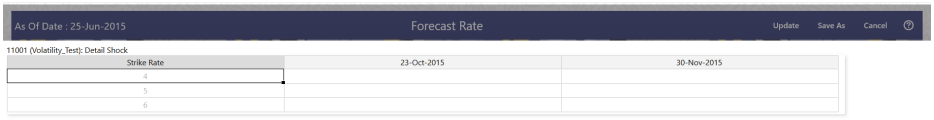
Following options are available for Volatility Surface Forecast Rule:

- Define
- Copy Across
- Restore Default
- View

Define

- **Flat Method**
  1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Flat.
  2. Click Define.
  3. The status of the Volatility Surface Code is changed to Defined.
- **Global Shock**
  1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Global Shock.
  2. Input Shock Percentage, if required.
  3. Click Define.
  4. The status of the Volatility Surface Code is changed to Defined.
- **Detail Shock**
  1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Detail Shock.
  2. Click Define. The Detail Shock window is displayed:

Figure 3-99 Detail Shock window



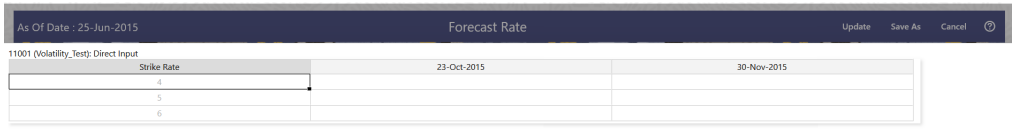
  3. Right click on data grid and select 'Export to Excel' to save visible data to excel file. You can also copy directly from the grid and paste data from an excel file to the grid. Enter data and click Apply.

4. The status of the Volatility Surface Code is changed to Defined.

- **Direct Input**

1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Direct Input.
2. Click Define. The Direct Input window is displayed:

Figure 3-100 Direct Input window



3. Enter a shock amount to apply to the Volatility Surface. Right click on data grid and select 'Export to Jexcel' to save visible data to excel file. You can also copy directly from the grid and paste data from an excel file to the grid.
4. Click Apply.
5. The status of the Volatility Surface Code is changed to Defined.

Copy Across

This allows you to copy Forecast Method and related details from one Volatility Surface to another.

For example, if you have 10 Volatility Surface codes enabled in the application and you must input only one set of assumptions, then copy those assumptions across all enabled Volatility Surface codes, instead of having to input 10 full sets, thereby saving a significant amount of input time.

You must select a defined Volatility Surface to use Copy Aross. For more information, see the Define section of Volatility Surface.

- **Flat Method**

1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Flat.
2. Click Copy Across.
3. Click Apply Copy Across.
4. You can click Cancel Copy Across to cancel the Copy Across function.

- **Global Shock**

1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Global Shock.
2. Click Copy Across.
3. Click Apply Copy Across.
4. You can click Cancel Copy Across to cancel the Copy Across function.

- **Detail Shock**

1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Detail Shock.

2. Click Copy Across.
3. Click Apply Copy Across.
4. You can click Cancel Copy Across to cancel the Copy Across function.

- **Direct Input**
  1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Direct Input.
  2. Click Copy Across.
  3. Click Apply Copy Across.
  4. You can click Cancel Copy Across to cancel the Copy Across function.

Restore Default

Use this action to reset previously entered details to Undefined status.

- **Flat Method**
  1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Flat.
  2. Click Restore Default.
  3. The status of the Volatility Surface Code is changed to Undefined.
- **Global Shock**
  1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Global Shock.
  2. Click Restore Default.
  3. The status of the Volatility Surface Code is changed to Undefined.
- **Detail Shock**
  1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Detail Shock.
  2. Click Restore Default.
  3. The status of the Volatility Surface Code is changed to Undefined.
- **Direct Input**
  1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Direct Input.
  2. Click Restore Default.
  3. The status of the Volatility Surface Code is changed to Undefined.

View

After defining Forecast Method and other parameters for a Volatility Surface you can view the forecasted Volatility Surface by clicking this button.

- **Flat Method**
  1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Flat.
  2. Click View to see the output table.
- **Global Shock**

1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Global Shock.
2. Click View to see the Output Table.

- **Detail Shock**
  1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Detail Shock.
  2. Click View to see the Output Table.
- **Direct Input**
  1. Select Volatility Surface Code using corresponding checkbox and select Forecast Method as Direct Input.
  2. Click View to see the Output Table.

3.20.4 Map Behavior Pattern Rule

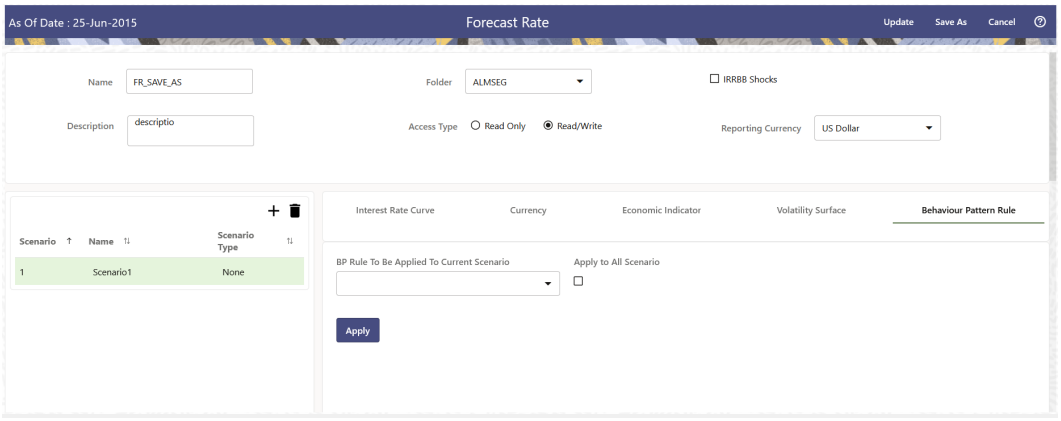
The Behavior Pattern Rule section allows you to map an existing Behavior Pattern Rule to current forecast scenario.

The BP Rule drop-down list shows the list of existing Behavior Pattern Rule. Select any behavior pattern rule to map with the current forecast scenario. To map a Behavior pattern to all the forecast scenarios, use the Apply to All Scenarios check box (applicable only to Asset Liability Management Cloud Service). For more information about the Behavior Pattern Rule, see the Behavior Pattern Rule section.

To map Behavior Pattern Rule with Forecast Scenario, follow these steps:

1. Navigate to **Forecast Rate Summary** Page.
2. Navigate to the Behavior Pattern Rule section.
3. Select Behavior Pattern Rule from **BP Rule To Be Applied To Current Scenario** drop-down list. Enable **Apply to All Scenarios** check box if you want to apply the selected Behavior Pattern Rule to all scenarios.

Figure 3-101 Map Behavior Pattern Rule



4. Click **Apply**.

3.20.5 View and Edit Forecast Rate Rule

You can view existing Forecast Rate Rule, and edit existing Forecast rules, provided you have Read/Write privileges.

To view and edit a Forecast Rate Rule, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Rate**.
2. Search for a Rule. For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the Forecast Rate Rule Name and select **View/ Edit** to open the rule you want to update.
4. Update the rule details.
5. Click **Apply** or **Save**, depending on the rule type.

3.20.6 Copy Forecast Rate Rule

You can copy Forecast Rate rules to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes.

To copy a Forecast Rate Rule, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Rate**.
2. Search for a Rule.
   For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Forecast Rate Rule Name and select **Save As** to duplicate the rule.
4. Select a folder where you want to save the rule copy.
5. Enter a unique Name for the new rule.
6. Enter a brief Description of the rule.
7. Click **Save**.

3.20.7 Delete Forecast Rate Rule

You can delete Forecast Rate Rules that are no longer required.

> **Note:**
>
> A Forecast Rate Rule cannot be retrieved after deletion.
>
> Restrictions on deleting Rules are:
>
> - You cannot delete Forecast Rate Rules if you have only Read privileges. Only users with read/write privileges and Rule owners can delete Rules.
> - You cannot delete a Forecast Rate that has a dependency.

To delete a Forecast Rate, follow these steps:

- Navigate to the **Assumption** and select **Forecast Rate**.
- Search for a Rule. For more information, see the Searching for Rules section.
- Click on the **Action** icon against the Forecast Rate Rule Name and select **Delete**.

3.20.8 Dependency Check

You can check dependencies for rules to know where a particular Forecast Rate Rule has been used. This also prevents accidental deletion of rules having dependencies.

To check the dependency of a rule, follow these steps:

1. Navigate to the Assumption and select Forecast Rate.
2. Search for a rule. For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the Forecast Rate Rule Name and select **Dependency Check** to the rule that you want to check for.

3.21 Discount Methods

This module describes the procedure for working with and managing Discount Method Rules. Discount Method Rules allow users to define the method for discounting projected Cash Flows for market value and duration calculation purposes. For each combination of product and currency, you can choose one of the following discount methods:

- Spot Input
- Spot Interest Rate Code
- Forecast (Original Term)
- Forecast (Remaining Term)

The following table describes the methods and rate choices:

Table 3-56 List of Discount Methods

Method	Single Rate	Yield Curve
Spot Input	Discounts all cash flows by the Input Rate	Not applicable
Spot Interest Rate Code	Not applicable	Discounts each Cash Flow period by the equivalent term rate on the base Yield Curve chosen (the Yield Curve as of the start date). The term is defined by the remaining term of the cash flow. Refer Note
Forecast (Original Term)	Not applicable	Discounts each Cash Flow period by the Forecasted Value of the point on the yield curve corresponding to each transaction record's original term (fixed rate instrument) or repricing term (variable rate instrument). Refer Note

Table 3-56 (Cont.) List of Discount Methods

Method	Single Rate	Yield Curve
Forecast (Remaining Term)	Not applicable	Discounts each Cash Flow period by the Forecasted Value of the point on the Yield Curve corresponding to the remaining term until each cash flow. Refer Note
Effective Interest Rate	Effective Interest Rate (EIR) of account is used as discount rate.	Not applicable

> **Note:**
>
> In the case of Spot Interest Rate Code, if term point is not available, engine will use linear interpolation to determine the interest rate to discount cashflows.
>
> When Discounting method of Forecast (Original Term) and Forecast (Remaining Term) is used, if term point is not available, engine will use Interpolation method defined for Interest rate code within Forecast Rate Rule. If Interpolation method defined in Forecast rate rule is Linear, engine will use Linear Interpolation. If Interpolation Method is cubic, engine will use Cubic Interpolation to determine interest rate to discount Cash Flows.

Topics:

- Discount Method Summary Page
- Search Discount Method Rule
- Create Discount Method Rule
- View and Edit Discount Method Rule
- Copy Discount Method Rule
- Delete Discount Method Rule

3.21.1 Discount Method Summary Page

This page is the gateway to all Discount Method Rules and related functionality. You can navigate to other pages relating to Discount Method Rules from this point. The Discount Method Summary Page displays the following columns.

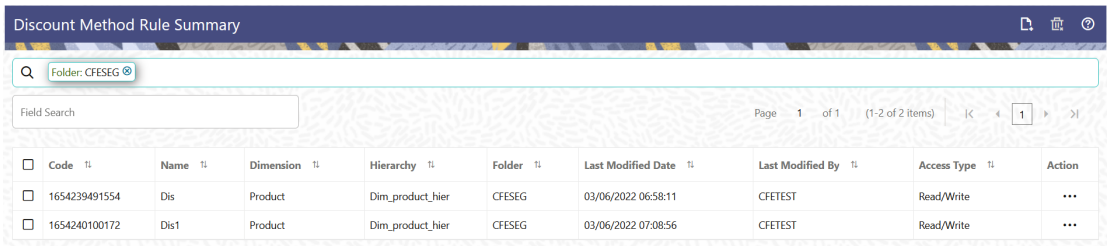
Table 3-57 Discount Method Rule summary– Fields and Descriptions

Columns	Description
Code	Displays the Code of Discount Method Rule.
Name	Displays the Discount Method Rule's short name.

Table 3-57 (Cont.) Discount Method Rule summary– Fields and Descriptions

Columns	Description
Dimension	Displays the Dimension used to define Discount Method Rule.
Hierarchy	Displays the Hierarchy used to define Discount Method Rule.
Folder	Displays the Folder name where the Discount Method rule is saved.
Last Modified By	Displays the Name of the user who last modified the Discount Method Rule.
Last Modified Date	Displays the Date and Time when Discount Method was modified last.
Access Type	Displays the access type of rule. It can be Read-Only or Read/Write.
Action	Displays the list of actions that can be performed on the Discount Method Rule. For more information, see Discount Method Rule – Icons and Descriptions.

Figure 3-102 Discount Method Rule Summary Page



The Action column on the Discount Method Rule Summary Page offers several actions that allow you to perform different functions. The following actions are available for the Discount Method Rules.

Table 3-58 Discount Method rule – Icons and Descriptions

Fields	Description
Add	Click Add icon at the top right of the Summary Page to build a new Discount Method Rule.
Multiple Delete	Select one or more rules in the table and then click the Multiple Delete icon at the top right of the summary page to delete more than one rule at the same time.
View/Edit	Click on the **Action** icon against the Discount Method Rule Name and select View/Edit to view or edit the contents of a Discount Method Rule in read/write format. Depending on user privileges the rule will open in either View or Edit mode.

Table 3-58 (Cont.) Discount Method rule – Icons and Descriptions

Fields	Description
Save As	Click on the **Action** icon against the Discount Method Rule Name and select Save As to create a copy of an existing Discount Method Rule.
Delete	Click on the **Action** icon against the Discount Method Rule Name and select Delete to delete an existing Discount Method Rule.
Dependency Check	Click on the **Action** icon against the Discount Method Rule Name and select Dependency Check to generate a report on all rules that utilize your selected Discount Method Rule.

3.21.2 Search Discount Method Rule

Search for a Discount Method Rule to perform any of the following tasks:

- View
- Edit
- Copy
- Delete
- Refresh

Prerequisites

Predefined Discount Method rule

Procedure

To search for a new Discount Method Rule, follow these steps:

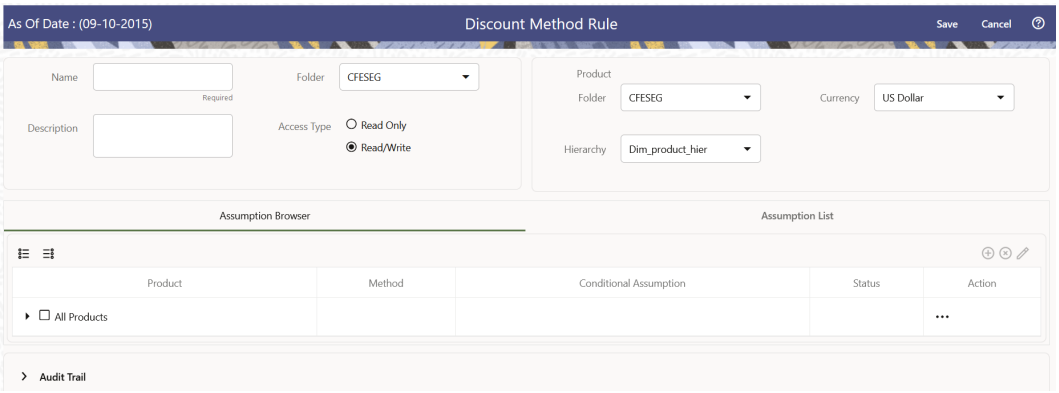
1. Navigate to the **Discount Method Rule Summary** Page.
2. Enter the **Code, Name, Description, Dimension, Hierarchy**, and **Folder** of the Discount Method rule and click Search .
3. Only Discount Method Rules that match the search criteria are displayed.

3.21.3 Create Discount Method Rule

You create a Discount Methods rule to assign Discounting Methods to your products. To create a Discount Method Rule, follow these steps:

1. Navigate to the **Discount Methods Rule** Summary Page.
2. Click **Add**. The **Discount Method Rule** Page is displayed.

Figure 3-103 Discount Method Rule



3. Enter the following details:

Table 3-59 Discount Method Details

Fields	Description
Name	Enter the name of the Discount Method Rate Rule.
Description	Enter the description of the Discount Method Rule. This is an optional field.
Folder	Select the Folder where the Discount Method Rule needs to be saved.
Access Type	Select the Access Type as Read-Only or Read/ Write.

4. Select a **Product Hierarchy**. You can define methodologies at any level of the hierarchical product dimension. The hierarchical relationship between the nodes allows inheritance of methodologies from Parent Nodes to Child Nodes. Enter the following details for **Product Hierarchy** selection:

Table 3-60 Product Hierarchy Details section

Fields	Description
Folder	Select the Folder where Product Hierarchy is previously created
Hierarchy	Select the Hierarchy of the product
Currency	Select the Currency.

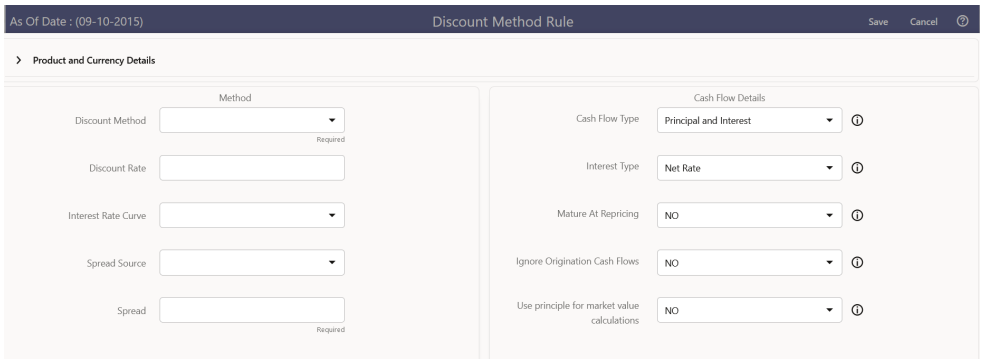
5. Navigate to **Assumption Browser** Section to define the Discount Method for your product-currency combination.

> **Note:**
>
> Node Level Assumptions allow you to define assumptions at any level of the Product dimension Hierarchy. The Product dimension supports a hierarchical representation of your chart of accounts, so you can take advantage of the parent-child relationships defined for the various nodes of your product hierarchies while defining rules. Children of parent nodes on a hierarchy automatically inherit the assumptions defined for the parent nodes. However, assumptions directly defined for a child take precedence over those at the parent level.
>
> - Select the product(s) and the currency for which you want to define a discount method(s).
> - Select the **Add** icon to launch the **Discount Method Details** Window..

> **Note:**
>
> Using the Default Currency to setup assumptions can save data input time. At Run Time, the calculation engine uses assumptions explicitly defined for a Product Currency combination. If assumptions are not defined for a currency, the engine uses the assumptions defined for the product and the default currency. If the assumptions are the same across some or all currencies for a specific product, you can input assumptions for the Default Currency. Be careful using this option on screens where an Interest Rate Code is a required input. In most cases, you will want to use a currency specific discount curve for discounting instruments within each specific Base Currency. The Default Currency option, if used will apply a selected Interest Rate Code across all currencies.

6. Navigate to **Discount Method** Section.

Figure 3-104 Discount Method Section



7. Enter the following details:

Table 3-61 Discount Method Section

Fields	Description
Discount Method	Select the Discount Method from Discount Method List
Discount Rate	Enter Discount Rate if Spot Input Method is selected
Interest Rate Curve	From Interest Rate Code List, select an appropriate Interest Rate Code. The list of Interest Rate Codes depends on the selected currency. If the selected currency is the default currency, all Interest Rate Codes appear. For other currency selections, the list of interest rate codes includes only interest rate codes whose reference currency is the same as the selected currency.
Spread Source	You can optionally choose to add a spread of margin over the Interest Rate derived from IRC. Spread can be defined in the Discount Method Rule or it can be given along with Instrument record. You can select source of the spread as Discount Rule or Account Data is method is Spot IRC, Forecast (Original Term) and Forecast (Remaining Term).
Spread	When Discount Rule is selected as Spread Source then you can specify the amount of spread/margin here. Type the percentage difference (+ or -) between the selected rate index and the value you want to use for the discount rate(s) within market value calculations. Input a Rate Spread, type 1.0000. A spread of 1% returns a discount rate of 1.00% above the reference interest rate. Type a negative number for a spread below the reference interest rate.

8. Navigate to **Cash Flow Details** section. The **Cash Flow Definition Details** Section is used in unique instances to specify the portion of the Cash Flow that is used to calculate a Market Value.
9. Enter the following details:

Table 3-62 Cash Flow Details Section

Fields	Description
Cash Flow Type	a. **Interest Only** - ignores all principal runoff for market value purposes. Use this option for Off-balance sheet items where principal is equal to Notional Principal and is therefore not a true Cash Flow. b. **Principal & Interest** - calculates principal and interest both for Market Value purposes. c. **Principal Only** - ignores all interest rate Runoff for market value purposes.
Interest Type	The Cash Flow Interest Type determines which interest component is included in the cash flow definition. The Cash Flow Interest Type can be one of three values: • Net Rate • Gross Rate For typical processing, you will use the Net Rate for the interest component of the cash flow. Special processing objectives, such as valuation of the funding center, may require you to use the other cash flow interest types.
Mature at Repricing	Calculates a market value and YTM for a given transaction up to the repricing date. For market value and YTM purposes the transaction is assumed to mature on the repricing date. Duration is always calculated to the next reprice date, not to maturity, regardless of the mature at repricing selection.
Ignore Origination Cash Flows for Forward-Starting Instruments	This feature allows the cash flow engine to ignore the origination Principal Cash Flows of any forward-starting instrument. The corresponding market value, duration, convexity and yield calculations will not reflect the Origination Amount. Origination principal Cash Flow will still be reported.
Use Principal in Market Value Calculations (Off-Balance Sheet Only)	This feature allows the Cash Flow Engine to consider principal in the calculation of market value, duration, convexity and yield calculations, even if principal is not actually exchanged.

10. Click **Apply**.

3.21.4 View and Edit Discount Method Rule

You can view existing Discount Method Rule, and you can edit existing Discount Method Rules, provided you have read/write privileges.

To view and edit a Discount Method Rule, follow these steps:

- Navigate to the **Assumption** and select **Discount Method**.
- Search for a Rule. For further information, see the Searching for Rules section.
- Click on the **Action** icon against the Discount Method Rule Name and select **View/Edit** to open the rule you want to update.
- Update the rule details.
- Click **Apply** or **Save**, depending on the rule type.

3.21.5 Copy Discount Method Rule

You can copy Discount Method Rules to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes.

To copy a Discount Method Rule, follow these steps:

1. Navigate to the **Assumption** and select **Discount Method**.
2. Search for a Rule.
   For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Discount Method Rule Name and select **Save As** to duplicate the rule.
4. Select a folder where you want to save the rule copy.
5. Enter a unique name for the new rule.
6. (Optional) Enter a brief description of the rule.
7. Select the access type.
8. Click the **Save** button.

3.21.6 Delete Discount Method Rule

You can delete Discount Method Rules that are no longer required.

> **Note:**
>
> A Discount Method Rule cannot be retrieved after deletion
>
> Restrictions on deleting Discount Method Rules are:
>
> - You cannot delete Discount Method Rules if you have only Read privileges. Only users with read/write privileges and pattern owners can delete Discount Method Rules.
> - You cannot delete a Discount Method Rule that has a dependency.

To delete a Discount Method Rule, follow these steps:

1. Navigate to the **Assumption** and select **Discount Method**.
2. Search for a Rule.
   For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Discount Method Rule Name and select **Delete**.

3.21.7 Discount Method Examples

The following examples assume the Interest Rate has a format of zero-coupon yield with annual compounding. The instrument used in each example is an annual-pay, 2-year instrument originated on the As_of_Date. See the Oracle Financial Services Cash Flow Engine Reference Guide for details on discount factor derivation used in Cash Flow Calculations.

- Spot Input
- Spot Interest Rate Code
- Forecast Remaining Term
- Forecast Original Term

3.21.7.1 Spot Input

In the Spot Input Method, the discount factor does not vary with Forecast Rate - interest rate scenarios. The discount factor calculations assume the input interest rate to reflect a format of zero coupon yield, annual compounding, and actual/actual accrual basis.

Spot Input Rate = 6.00%

The formula for the market value of the account, for any rate scenario, is:

Market Value = Cash Flow1/ (1 + 0.06) + Cash Flow 2 / ((1 + 0.06)^2)

Cash Flow1 is the cash flow at the end of year 1. Cash Flow2 is the Cash Flow at the end of year 2.

3.21.7.2 Spot Interest Rate Code

(Required) <Enter a short description here.>

In the Spot Interest Rate Code Method, the discount factor depends on the term of the Cash Flow, but does not vary with interest rate scenario.

Interest Rate Code = Treasury Yield Curve

The formula for the Market Value of the account, for any rate scenario, is:

Market Value = Cash Flow1/ (1 + 1 Year Treasury) + Cash Flow2/ ((1 + 2 Year Treasury)^2)

Cash Flow1 is the Cash Flow at the end of year 1. Cash Flow2 is the Cash Flow at the end of year 2. The values for 1 Year Treasury and 2 Year Treasury reflect the values from the Historical Interest Rate Data, beginning with the As_of_Date.

3.21.7.3 Forecast Original Term

The Forecast Original Term Method uses the forecasted Interest Rate Data to determine the discount factor.

Interest Rate Code = Treasury Yield Curve

The formula for the market value of the account is:

Market Value = Cash Flow1/ (1+ 2 Year Treasury Rate at the 1 year point in the forecast) + Cash Flow2/ ((1+ 2 Year Treasury Rate at the 2 year point in the forecast)^2)

Cash Flow1 is the Cash Flow at the end of year 1. Cash Flow2 is the cash flow at the end of year 2. Note that Cash Flow1 is discounted at the 2 year Treasury rate. The 2 Year rate is used with this method, because the Forecast Original Term method always uses the term equivalent to the original term of the instrument.

3.21.7.4 Forecast Remaining Term

The Forecast Remaining Term Method uses forecasted Interest Rate Data to determine the discount factor.

Interest Rate Code = Treasury Yield Curve

The formula for the market value of this account is:

Market Value = Cash Flow1/ (1+ 1Year Treasury Rate at the 1 year point in the forecast) + Cash Flow2/ ((1+ 2 Year Treasury Rate at the 2 year point in the forecast)^2)

Cash Flow1 is the Cash Flow at the end of year 1. Cash Flow2 is the cash flow at the end of year 2. The values for 1 Year Treasury and 2 Year Treasury reflect the scenario specific values from the forecast rates - interest rate data. Cash Flow1 is discounted at the 1 year Treasury rate, from the 1 year point of the forecast and Cash Flow2 is discounted at the 2 year Treasury rate, from the 2 year point of the forecast.

3.22 Pricing Margin

The Pricing Margin Rules allow users to define pricing margins (or spreads) for your new business originations. As with all forecasting rules, Pricing Margins are based on the Multi Dimensional Balance Sheet Structure (MDBSS). Pricing margins are defined period by period using your selected Time Bucket definition for each MDBSS node and, potentially, each currency. Pricing margins work together with an underlying base interest rate curve (specified in Product Characteristics) to determine note rate pricing for new business volumes. New business assumptions are defined based on the combined inputs from the following forecast related business Rules:

- Product Characteristics
- Pricing Margins
- Forecast Balance

All forecast Rules use the MDBSS. Rules intended to be processed together must share a common MDBSS.

When you require more complex definitions of pricing margins to model unique account pricing details, user-defined repricing patterns can be used. For more information, see the Forecast - Pricing Margins section.

3.22.1 Pricing Margin Summary Page

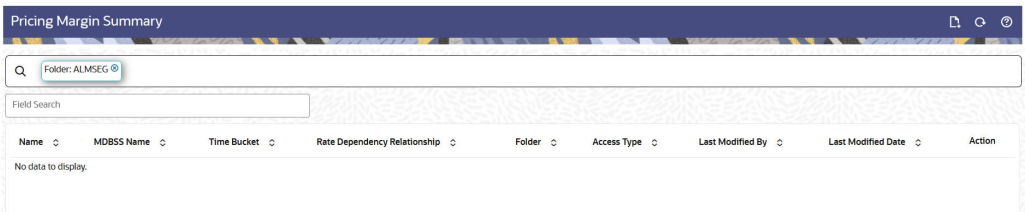
This page is the gateway to all Pricing Margins and related functionality. You can navigate to other pages relating to Pricing Margins from this point.

The Pricing Margin Summary Page displays the following columns.

Table 3-63 Pricing Margin Rule – Fields and Descriptions

Column	Description
Name	Displays the Pricing Margin Rule's Short Name.
MDBSS Name	Displays the instrument table selection for processing of data.
Time Bucket	Displays the Time Bucket of Pricing Margin Rule.
Rate Dependency Relationship	Displays the Rate Dependency Relationship of Pricing Margin Rule.
Folder	Displays the folder of Pricing Margin rule.
Access Type	Displays the Access Type of Pricing Margin rule.
Last Modified By	Displays the Name of the user who last modified the Pricing Margin Rule.
Last Modified Date	Displays the Date and Time when Pricing Margin was modified last.
Action	Displays the list of actions that can be performed on the Pricing Margin Rule. For more information, see Pricing Margin – Icons and Descriptions.

Figure 3-105 Pricing Margin Summary Page



The Action column on the Pricing Margin Summary Page offers several actions that allow you to perform different functions. The following actions are available for the Pricing Margin Rule.

Table 3-64 Pricing Margin Rule – Icons and Descriptions

Fields	Description
Add	Click **Add** icon at the top right of the Summary Page to build a new Pricing Margin Rule.
Multiple Delete	Select one or more rules in the table and then click the **Delete** icon at the top right of the Summary Page to delete more than one rule at the same time.

Table 3-64 (Cont.) Pricing Margin Rule – Icons and Descriptions

Fields	Description
View/Edit	Click on the **Action** icon against the Rule Name and select **View/Edit** to view or edit the contents of a Pricing Margin Rule in Read/ Write format. Depending on User Privileges the rule will open in either View or Edit Mode.
Save As	Click on the **Action** icon against the Rule Name and select **Save As** to create a copy of an existing Pricing Margin Rule.
Delete	Click on the **Action** icon against the Rule Name and select **Delete** to delete an existing Pricing Margin Rule.
Dependency Check	Click on the **Action** icon against the Rule Name and select **Dependency Check** to view objects where selected Pricing Margin Rule is used.

3.22.2 Search for Pricing Margins

Search for a Pricing Margin to perform any of the following tasks:

- View
- Edit
- Copy
- Delete
- Check Dependencies

Prerequisites

- Predefined Pricing Margins

Procedure

To search for Pricing Margins, do the following:

1. Navigate to the **Pricing Margin** summary page.
2. Enter the Name, MDBSS Name, or Folder of the rule in Search Criteria.
3. Click the **Search** icon.

Only Rules that match the search criteria are displayed.

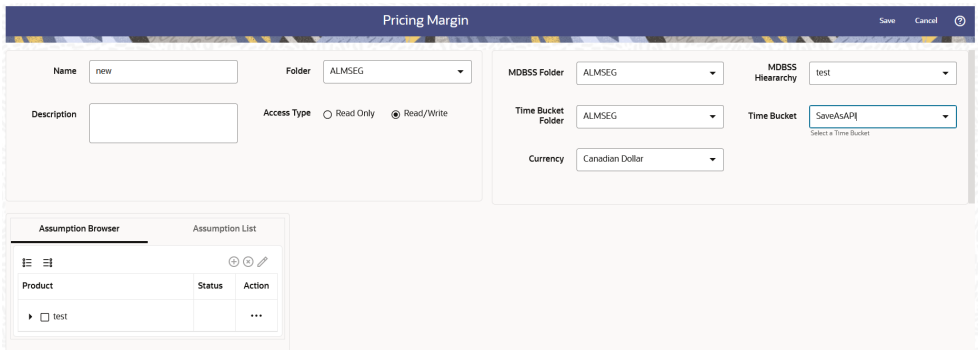
You can control the number of rows to display on-screen by selecting the "Pagination Options" icon from the action bar.

3.22.3 Create Pricing Margin

To create the Pricing Margin, do the following:

1. Navigate to the **Pricing Margin** summary page.
2. Click **Add** icon. The **Add** Pricing Margin page is displayed.

Figure 3-106 Pricing Margin Page



3. Enter the following Details.

Table 3-65 Create Pricing Margin Rule

Fields	Description
Name	Enter the name of the Pricing Margin Rule.
Description	Enter the description of the Pricing Margin Rule. This is an optional field.
Folder	Select the Folder where the Pricing Margin Rule needs to be saved.
Access Type	Select the Access Type as Read-Only or Read/Write.
MDBSS Folder	Select the MDBSS folder
MDBSS Hierarchy	Select the MDBSS hierarchy
Time Bucket Folder	Select the Folder from which you want to apply Time Bucket Rule.
Time Bucket Rule	Select the time horizon/aggregation for rule.
Currency	Select the currency for Pricing Margin

4. Select an MDBSS hierarchy. You can define methodologies at any level of the MDBSS. The Hierarchical Relationship between the nodes allows the inheritance of methodologies from Parent nodes to Child nodes.
5. Select MDBSS node(s) from Assumption Browser.
6. Click Add from Assumption Browser Section.
7. Click Save

3.22.4 Defining Pricing Margin Rule

When you click Save in the Create Pricing Margin Rules Process, the Rule is saved and the Pricing Margin Rule Summary Page is displayed. However, Pricing Margin assumptions have not yet been defined for any of your products at this point. Typically, you would start defining your Forecast Balance assumptions for MDBSS before clicking Save.

The Pricing Margin Rule supports the definition of Forecast Balance assumptions for MDBSS.

Once you have created a Pricing Margin Rule, you can assign Pricing Margin to MDBSS using Node Level Assumption. For more information, see Defining Pricing Margin Using Node Level Assumptions section.

3.22.4.1 Defining Pricing Margins Using Node Level Assumptions

Node Level Assumptions allow you to define assumptions at any level of the Multi Dimensional Balance Sheet Structure (MDBSS) hierarchy. The MDBSS supports a hierarchical representation of your chart of accounts, so you can take advantage of the parent-child relationships defined for the various nodes of your MDBSS hierarchies while defining rules. Children of parent nodes on an MDBSS automatically inherit the assumptions defined for the parent nodes. However, assumptions directly defined for a child take precedence over those at the parent level. In an income simulation scenario, you may want to price new business for an account at a margin above or below a market interest rate code. For example, you can model a premium paid on CDs in relation to a market yield curve by adding a pricing margin to the interest rate code assigned to the product in the Product Characteristics rule. If you want a rate that is 25 bps above the market yield curve, you will type "0.25" as the pricing margin for the appropriate modeling period. The Pricing Margin rule uses the modeling period defined in the "active" Time Bucket rule. You should always verify that your modeling horizon and related assumptions are consistent with the As of Date and active Time Bucket rule before processing.

Prerequisites

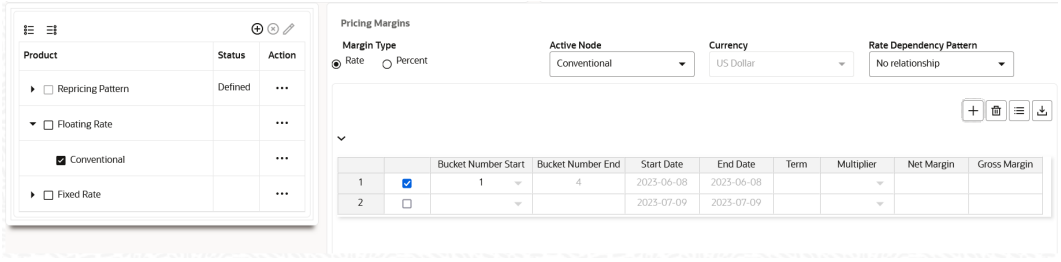
Performing basic steps for creating or editing a Pricing Margin Rule.

Procedure

To define Pricing Margin Rule, follow these steps:

1. Navigate to Pricing Margin Rule page.

Figure 3-107 Pricing Margin Rule section



2. Enter following details:

Table 3-66 Pricing Margin

Fields	Description
Margin Type	Select Margin Type as Rate or Percent.
Active Node	Shows the name of the selected Active Node

Table 3-66 (Cont.) Pricing Margin

Fields	Description
Rate Dependency Pattern	Rate Dependency Patterns allow you to establish relationships between the level of interest rates, economic indicators or rate spreads and ALM forecast assumption rules. There are four rate dependency options to choose from: No Relationship Rate Level Dependent Rate Spread Dependent Economic Indicator Dependent
Bucket Number Start and Bucket Number End	The bucket number input allows you to select a range of buckets over which the pricing margin assumption will apply. Start Date and End Date values are updated automatically based on the Bucket Number input for each row.
Start Date and End Date	When the Pricing Margins detail page opens, the Start Date (min value) and End Date (max value) columns are automatically populated and are read-only values. The date ranges represent the Income Simulation Date buckets as defined in the "active" Time Bucket rule. See Time Bucket Rules, page 20-1 for more information. Any new business originated within these dates is modeled using the pricing margins defined in the Pricing Margin rule. New business added for each date bucket will have the same net and gross margin for its life. The margins for a particular instrument will not change as the instrument ages.
Term	In conjunction with the Multiplier, this field allows you to specify the value for the Term, for a given lookup tier.
Multiplier	The unit of time applied to the Term. The choices are: Days, Months, Years.
Net Margin	The Net Rate is affected by setting the Net Margin Flag in the Product Characteristics rule. If Net Margin Flag is set to Floating Net Rate, then Net Rate is equal to the Interest Rate Code plus the Net Margin specified here. If the Net Margin Flag is set to Fixed Net Rate, then Net Rate is equal to Net Margin.
Gross Margin	The Gross Margin you define is added to the Interest Rate Code specified in the Product Characteristics rule to define the gross rate on new business.

3. You can more Rows using the **Add Row** icon. You can multiple Rows at a time using the **Add Multiple Row** icon.
4. Click **Apply**.

You can also use the Excel Export feature to download the data in Excel format.

3.22.5 View and Edit Pricing Margin

You can view existing Pricing Margin, and you can edit existing Rules, provided you have Read/Write privileges.

To view and edit a Pricing Margin, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Assumptions**, and then select **Pricing Margin**.
2. Search for a Rule. For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the Rule Name and select **View/Edit** to open the rule you want to update.
4. Update the Rule details.
5. Click **Apply** or **Save**, depending on the Rule type.

3.22.6 Copy Pricing Margin

You can copy Rules to avoid having to enter data multiple times. This saves time and effort and also reduces mistakes.

To copy a Pricing Margin, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Assumptions**, and then select **Pricing Margin**.
2. Search for a Rule.
   For more information, see the Searching for Rules section.
3. Click on the **Action** icon against the Rule Name and select **Save As** to duplicate the rule.
4. Select a folder where you want to save the Rule Copy.
5. Enter a unique name for the new Rule.
6. (Optional) Enter a brief description of the Rule.
7. Select the access type.
8. Click **Save**.

3.22.7 Delete Pricing Margin

You can delete Rules that are no longer required.

> **Note:**
>
> A Rule cannot be retrieved after deletion.
>
> Restrictions on deleting Rules are:
>
> - You cannot delete Rules if you have only Read privileges. Only users with Read/Write privileges and Rule owners can delete Rules.
> - You cannot delete a Rule that has a dependency.

To delete a Pricing Margin, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Assumptions**, and then select **Pricing Margin**.
2. Search for a Rule. For more information, see the Searching for Rules section.
3. Click on the Action icon against the Rule Name and select **Delete**.

3.22.8 Dependency Check

You can check dependencies for rules to know where a particular Rule has been used. This also prevents accidental deletion of rules having dependencies.

To check the dependency of a rule, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Assumptions**, and then select Rule.
2. Search for a Rule. For further information, see the Searching for Rules section.
3. Click on the **Action** icon against the Rule and select **Dependency Check** to the Rule that you want to check for.

> **Note:**
>
> This is functionality will be released in future.

3.23 Forecast Balance Rules

This module discusses modeling of new business activity through the Forecast Balance rules. Included are assumption setup and processing.

Within a Forecast Balance rule, you specify the amount of new activity generated per modeling bucket on each MDBSS node within each active currency. To create a new business assumption, you select from following available forecasting methods. You can further tailor the new business assumptions to meet your expectations of future originations, including the effect of interest rates on new business amounts.

Topics:

- Forecasting Methods
- Search Forecast Balance Rule
- Forecast Balance Summary Page
- Creating a Forecast Balance Rule
- View and Edit Forecast Balance Rule
- Copy Forecast Balance Rule
- Delete Forecast Balance Rule

> **Note:**
>
> All forecast rules and dynamic processing in ALMCS use the Multi Dimensional Balance Sheet Structure (MDBSS) instead of a single dimension hierarchy, like Product. Forecast rules that are intended to be processed together must all share a common MDBSS.
>
> For more information on the MDBSS, see Multi Dimensional Balance Sheet Structure

3.23.1 Forecasting Methods

The new business methods within the Forecast Balance rule determine how new business assumptions are applied per MDBSS node within each active currency. They consist of:

- No New Business
- Target Growth Percent
- New Add Balance

All forecast methods use the Distributed timing option.

Distributed Timing Option: Solves for the origination date of the new business account to reach an expected average balance, assuming even distribution of new business throughout the modeling bucket. For each modeling bucket, this calculation results in an average balance amount that is midway between the beginning balance and the ending balance.

For the Target Average method, the system automatically determines the timing of new originations to ensure that the user-input target is achieved. For Rollover business, the system assumes that the rollover occurs at the time of runoff of existing accounts.

> **Note:**
>
> For distributed originations of Target Growth and Target End balances, Transaction Strategies and future origination in the current position may impact the distributed originations calculation. Because the origination date on Transaction Strategy and current position accounts cannot be modified, the timing algorithm may not be able to find an origination date for the remaining new business which achieves the expected average balance.

The application of each new business method, including how different timing options are applied, is described below:

Forecasting at a Mid-Branch Node

Forecast Methods can be assigned at any node on the MDBSS. When assigning a Forecast Method to a non-terminal MDBSS node it may require the Application to consider the balance effects of all the child nodes. For example, when using Target Growth Percent at a non-terminal node, that target node will consider the balances of its child nodes when calculating the forecast amount. The target node's new business originations will occur on the target node.

Forecast Methods that must consider the balances of any child nodes:

- Target Growth Percent

Because the MDBSS can retain balances on any node at any level, the forecasting at a parent node must account for the consolidated balances of its child nodes. These balances in aggregation will be taken into consideration when computing the amount of new originations needed at the target node. All child balances includes both existing and new business originations.

Child nodes may also use any forecast method supported. If one or more child nodes of the target nodes contains a forecast method then those new originations will be computed first and, working up the branch, will be included when the parent node is reached.

In this hypothetical MDBSS branch, all planning and evaluation starts at node "L4" first, then systematically works its way up the branch to L1 which will be evaluated last. Each node's existing an new business originations, if any, are evaluated in this manner.

For all target types there is only one timing option to indicate when new business for a new account should be originated.

- Distributed: Solves for the origination date of the new business account to reach an expected average balance, assuming even distribution of new business throughout the modeling bucket. For each modeling bucket, this calculation results in an average balance amount that is midway between the beginning balance and the ending balance.

Forecasting from an MDBSS Currency Node

In the MDBSS one or more nodes may be of the currency dimension. Any currency dimension member and all of its child nodes inherit this identity for all forecasting. For example, if an MDBSS node is currency member "GBP" then all forecast balances placed on this node (or its child nodes, if any) will also be GBP. If the currency of the Forecast Balances page filter is not the same as the MDBSS node currency then that node or its child nodes cannot be modified.

No New Business

No New Business (forecasting zero changes in balances) is the default method for the Forecast Balance rule. This method allows runoff without replacement of the paid-down balances.

Target Growth Percent

Use the Target Growth Percent method to define the expected percentage change in the balance over each modeling bucket, expressed as a percent of the bucket's initial balance. Target Growth can be used to model flat balance sheet by assuming a growth rate of 0%.

This method can be placed on any node of the MDBSS, even if that node has no existing balances for itself. If the method is placed at a node that has one or more child nodes then the balances of those child nodes are taken into account when calculating the amount of new originations. The new business generated will appear on that node and not on its child nodes. If the target node and all of its child nodes have no new or existing balances then the target node will return no new business.

The new origination amount and the timing of origination are determined during processing, as described below:

- **New Origination Amount**
  The new origination amount per bucket depends upon whether the MDBSS node has one or more child nodes.

  MDBSS Node with no child nodes:

  (Beginning Balance * Target Growth Percent + Total Runoff - Transaction Strategy

  MDBSS Node with one or more child nodes:

  (Sum(Beginning Balance * Target Growth Percent) + Sum(Total Runoff) - Sum(Transaction Strategy) - Sum(Current position originations + child New Add balances)
- **New Business Timing**
  As will all forecast methods only the distributed originations is supported

  Distributed: The new origination amount is added on the calculated date(s) which allow the average balance to equal the beginning balance plus the ending balance divided by two. This calculation accounts for timing of runoff and other originations occurring during the modeling bucket.

New Add Balance

The New Add Balance method defines the absolute amount of new business that is added within a bucket. This forecast method can be placed on any node in the MDBSS. The new origination amount and the timing of origination are determined during processing, as described below:

- **New Origination Amount**
  The new origination amount is equal to the user-input new add balance.
- **New Business Timing**
  As will all forecast methods only the distributed originations is supported.

  Distributed: The new origination amount is added at the mid-point of the modeling bucket. If the modeling bucket contains an uneven number of days, the origination is apportioned evenly over the two days in the middle of the bucket.

Target End Balance

Use the Target End Balance method to define the total expected balance by the end of each modeling bucket. The new origination amount and the timing of originations within each modeling bucket are determined during processing, as described below:

- **New Origination Amount**
  The new origination amount per bucket is calculated as: Target Ending Balance - Beginning Balance + Total Runoff - Transaction Strategy Originations - Current Position Originations
- **New Business Timing**
  For the Target End method, you can choose either the At Bucket End timing option or the Distributed timing option.
  - **At Bucket End:** The new origination amount is added on the final date in the bucket. Interest starts accruing on the next day, the first date of the next bucket.
  - **Distributed:** The new origination amount is added on the calculated date(s) which allow the average balance to equal the beginning balance plus the ending balance

divided by two, accounting for timing of runoff and other originations occurring during the modeling bucket.

Account Types and New Business

All MDBSS nodes may use all available Forecast Methods regardless of the Account Type attribute.

3.23.2 Forecast Balance Summary Page

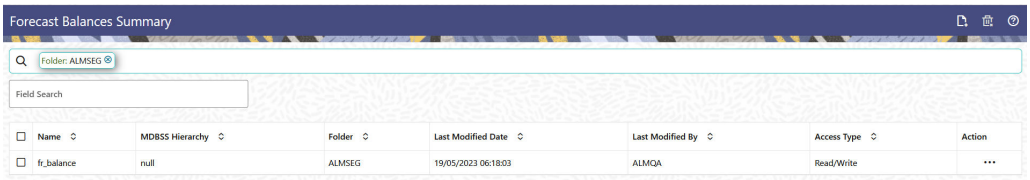
This page is the gateway to all Forecast Balance Rules and related functionality. You can navigate to other pages relating to Forecast Balance Rules from this point.

The Forecast Balance Summary Page displays the following columns.

Table 3-67 Forecast Balance Rule – Fields and Descriptions

Column	Description
Name	Displays the Forecast Balance Rule's Short Name.
MDBSS Hierarchy	Select the MDBSS Hierarchy of Forecast Balance rule
Folder	Displays the folder of Forecast Balance rule.
Last Modified By	Displays the Name of the user who recently modified the Forecast Balance Rule.
Last Modified Date	Displays the Date and Time when Forecast Balance Rule was modified recently.
Action	Displays the list of actions that can be performed on the Forecast Balance Rule. For more information, see Forecast Balance – Icons and Descriptions.
Access Type	Displays the Access Type of Forecast Balance rule.

Figure 3-108 Forecast Balance Summary Page



The Action column on the Forecast Balance Summary Page offers several actions that allow you to perform different functions. The following actions are available for the Forecast Balance Rule.

Table 3-68 Forecast Balance Rule – Icons and Descriptions

Fields	Description
Add	Click Add icon at the top right of the Summary Page to build a new Forecast Balance Rule.
Multiple Delete	Select one or more rules in the table and then click the Delete icon at the top right of the Summary Page to delete more than one rule at the same time.
View/Edit	Click on the Action icon against the Forecast Balance Name and select View/Edit to view or edit the contents of a Forecast Balance Rule in Read/ Write format. Depending on User Privileges the rule will open in either View or Edit Mode.
Save As	Click on the Action icon against the Forecast Balance Name and select Save As to create a copy of an existing Forecast Balance Rule.
Delete	Click on the Action icon against the Forecast Balance Name and select Delete to delete an existing Forecast Balance Rule.
Dependency Check	Click on the Action icon against the Forecast Balance Name and select Dependency Check to view objects where selected Forecast Balance Rule is used.

3.23.3 Search for Forecast Balance

Search for a Forecast Balance to perform any of the following tasks:

- View
- Edit
- Copy
- Delete
- Check Dependencies

Prerequisites

- Predefined Forecast Balance

Procedure

To search for Forecast Balance, do the following:

1. Navigate to the Forecast Balance summary page.
2. Enter the Code, Name, Description, MDBSS Hierarchy, or Folder of the rule in Search Criteria.
3. Click the **Search** icon.

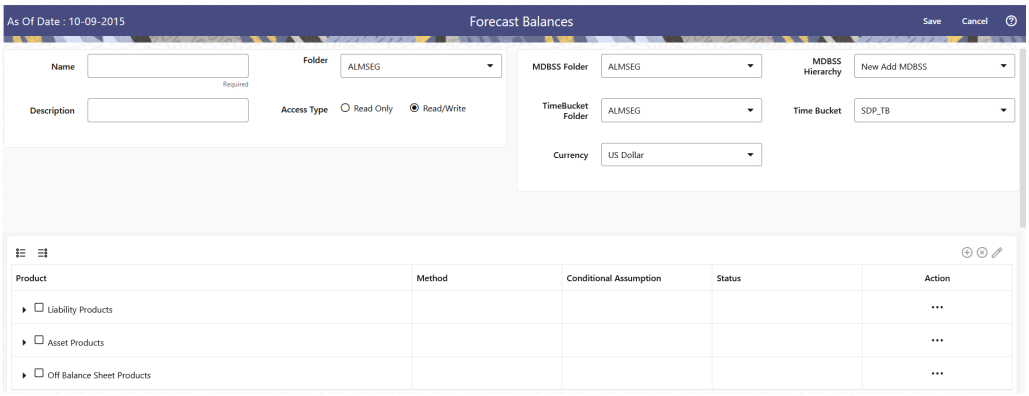
Only Forecast Balance that match the search criteria are displayed.

You can control the number of rows to display on-screen by selecting the "Pagination Options" icon from the action bar.

3.23.4 Creating a Forecast Balance Rule

To create a new Forecast Balance rule, complete the following steps:

Figure 3-109 Create Forecast Balance Rule



1. Click the **Add** on the **Forecast Balances** summary page to add a new rule.
2. Enter the following Details.

Table 3-69 Create Forecast Balance Rule

Fields	Description
Name	Enter the name of the Forecast Balance Rule.
Description	Enter the description of the Forecast Balance Rule. This is an optional field.
Folder	Select the Folder where the Forecast Balance Rule needs to be saved.
Access Type	Select the Access Type as Read-Only or Read/Write.
MDBSS Folder	Select the MDBSS folder
MDBSS Hierarchy	Select the MDBSS hierarchy
Time Bucket Folder	Select the Folder from which you want to apply Time Bucket Rule.

Table 3-69 (Cont.) Create Forecast Balance Rule

Fields	Description
Time Bucket Rule	Select the time horizon/aggregation for rule. Assumptions that you define when creating a forecast balance are based on a specific modeling horizon, which is defined in the Time Buckets. Example If you define a forecast balance based on a Time Bucket with a monthly modeling horizon, your results are calculated in monthly time periods. If you redefine that same forecast balance, using a different time bucket with a weekly modeling horizon, your results are calculated in weekly time periods. If assumptions in your Forecast Balance are based on a modeling horizon that is different from the horizon defined in the active time bucket, inaccurate data will result. You should verify that date-sensitive rules are consistent with the active Time Bucket.
Currency	Select the currency for Forecast Balance

3. Select an MDBSS hierarchy. You can define methodologies at any level of MDBSS. The Hierarchical Relationship between the nodes allows the inheritance of methodologies from Parent nodes to Child nodes.
4. Select MDBSS node(s) from Assumption Browser.
5. Click Add from Assumption Browser Section.
6. Click Save

3.23.5 Defining Forecast Balance Rule

When you click Save in the Create Forecast Balance Rules Process, the Rule is saved and the Forecast Balance Rule Summary Page is displayed. However, Forecast Balance assumptions have not yet been defined for any of your MDBSS at this point. Typically, you would start defining your Forecast Balance assumptions for MDBSS before clicking Save.

The Forecast Balance Rule supports the definition of Forecast Balance assumptions for MDBSS.

For more information, see Defining Forecast Balance Using Node Level Assumptions section.

3.23.5.1 Defining Forecast Balances Using Node Level Assumptions

Node Level Assumptions allow you to define assumptions at any level of the Multi Dimensional Balance Sheet Structure (MDBSS) hierarchy. The MDBSS supports a hierarchical representation of your chart of accounts, so you can take advantage of the parent-child relationships defined for the various nodes of your MDBSS hierarchies while defining rules. Children of parent nodes on an MDBSS automatically inherit the assumptions defined for the parent nodes. However, assumptions directly defined for a child take precedence over those at the parent level.

Prerequisites

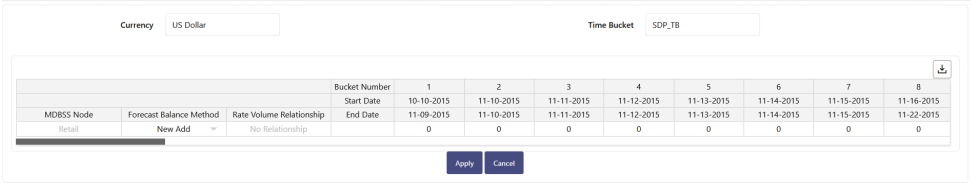
Performing basic steps for creating or editing a Forecast Balance Rule.

Procedure

To define Forecast Balance, follow these steps:

1. Navigate to Forecast Balance page.

Figure 3-110 Forecast Balance Page



2. Select Forecast Balance Method.
3. Enter Balance values for Buckets.
4. Click Apply.

You can also use the Excel Export feature to download the data in Excel format.

3.23.6 View and Edit Forecast Balance Rule

You can view existing Forecast Balance Rule, and you can edit existing Forecast Balance Rules, provided you have read/write privileges.

To view and edit a Forecast Balance Rule, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Balance Rule**.
2. Search for a Rule.
   For further information, see the Search Forecast Balance Rules section.
3. Click on the **Action** icon against the Forecast Balance Rule Name and select **View/Edit** to open the Rule you want to update.
4. Update the Rule details.
5. Click **Apply** or **Save**, depending on the Rule type.

3.23.7 Copy Forecast Balance Rule

You can copy Forecast Balance Rules to avoid having to enter data multiple times. This saves time and effort and reduces mistakes.

To copy a Forecast Balance Rule, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Balance Rule**.
2. Search for a Rule.
   For more information, see the Search Forecast Balance Rules section.
3. Click on the **Action** icon against the Forecast Balance Rule Name and select **Save As** to duplicate the Rule.
4. Select a folder where you want to save the Rule copy.

5. Enter a unique name for the new Rule.
6. Enter a brief description of the Rule.
7. Click **Save**.

3.23.8 Delete Forecast Balance Rule

You can delete Forecast Balance Rules that are no longer required.

> **Note:**
>
> A Forecast Balance Rule cannot be retrieved after deletion.
>
> Restrictions on deleting Forecast Balance Rules are:
>
> You cannot delete Forecast Balance Rules if you have only Read privileges. Only users with Read/Write privileges and Forecast Balance Rule owners can delete Forecast Balance Rules.
>
> You cannot delete a Forecast Balance Rule that has a dependency.

To delete a Forecast Balance Rule, follow these steps:

1. Navigate to the **Assumption** and select **Forecast Balance Rule**.
2. Search for a Rule.
   For more information, see the Search Forecast Balance Rules section.
3. Click on the **Action** icon against the Forecast Balance Rule Name and select **Delete**.

3.24 Filter

Filters allow you to view and select data using the defined expressions.

3.24.1 Filter Definition Types

Filter definitions are created based on the different object types.

The following filter definition types are supported:

- Attribute Filter - filters based on one or more Dimension Type Attributes. For each attribute, you can select one or more values.
- Data element filter -filters the columns based on specific data constraint. These filters are used within other rule types such as Allocation Rules, Transfer Pricing Rules, Asset and Liability Management Rules.
- Group filter - combined filter containing multiple Data element filters logically connected using the **AND** operator.
- Hierarchy filter - filters using Rollup Nodes within a Hierarchy and exclude or include data within an OFSAA Rule.

3.24.2 Accessing Filter Feature

The **Filters Summary Page** shows the list of available filters.

- To access the Filter Summary page, click **Maintenance** and select **Filter**.

  The Filter Summary Page provides the list of already created Filter definitions with the following details.

  - **Name** - The unique Filter Name. You can mouse-over the filter name to view more details such as the description of the filter.
  - **Folder** - The folder in which the Filter Definition is stored.
  - **Filter Type** - One of the following Filter Types associated with the Filter Definition. The filter type is selected based on the type of the object that needs to filtered.
    - Attribute Filter
    - Data element filter
    - Group filter
    - Hierarchy filter
  - **Modified By** - The login name of the User who has modified the Filter Definition.
  - **Modification Date** - The date of modification.
  - **Action** - Using **Action** (**three dots**), you can perform the following tasks on a selected filter definition.
    - View - View the details of selected filter definition.
    - Edit - Edit a filter definition.
    - Copy - Copy a filter definition.
    - Delete - Delete a filter definition.
    - View SQL - View the SQL statement for a filter definition.
    - Check Dependency - Check the dependent objects associated with the filter definition.

3.24.2.1 Searching Summary

You can search for a specific Definition based on the following criteria. Select/Enter one or more unique values/tag associated with the definition and click **Search**.

- **Name** - Enter unique filter name, to search for a specific definition based on the entered name,
- **Folder** - Select a specific folder to view the definitions stored in that folder.
- **Filter Type** - Select the Filter type, to view all the definitions associated with it.
- **Description** - Enter one or more keywords, to view the definitions containing those keywords.

3.24.2.2 Sorting a Summary Page

Sorting helps to view/group the filter definitions sequentially based on the selected criteria

You can sort/group the Definitions based on the following parameters:

- Filter Type
- Folder
- Name

3.24.3 Creating Filter Definitions

To create a Filter definition, complete the following steps:

1. To create a Filter Definition, click the **Add** in the Filter Summary.

   The **Add Filter Definition** Page with the following details is displayed.

   - **Name** - The unique Filter Definition Name.

     > **Note:**
     >
     > You can enter up to 120 characters. All allowed characters are **blank space ( )** , **Underscore (_)**,**comma (,)**, **dot (.)** and " **hyphen (-)** .

   - **Folder** - Select the Folder, to save the Filter definition.
   - **Description** - A brief description about the Filter Definition.

     > **Note:**
     >
     > You can enter up to 250 characters. All characters are allowed except **" & ", "+ ", "@" and "~"**.

   - **Read-Only** - Select this option to give other users the access to only view the Filter Definition.
   - **Filter Type** - Select one of the following filter types, based on the type of the object that needs to filtered. For more information about creating a filter based on the filter type refer, to the respective sections.
     - Attribute Filter
     - Data Element filter
     - Group filter
     - Hierarchy filter
2. After including all the filters, Click **Save**.

   The new Filter Definition is created successfully and added to the Filter Summary.

3.24.3.1 Defining an Attribute Filter

Attribute Filters are created using defined Attributes. Attribute filters facilitates you to filter on one or more Dimension Type Attributes.

For each attribute, you can select one or more values.

1. Select the Filter Type as **Attribute**.
2. Select the required **Dimension** from the drop-down list.
3. Select the associated **Attribute** from the drop-down list.

   Only those attributes associated with the selected Dimension are displayed.
4. In the **Attributes Value** pane, click **Search**. The list of attribute values associated with the selected Attribute are displayed.
5. Click the **Action** adjacent to the attribute to be added and click **Copy**.

   The selected Attribute value is added the **Attribute Values** pane.
6. After adding the required filters, click **Save**, to add the Filter definition to the Filter Summary page.

   The filter definition is added and a confirmation message is displayed.

   To Delete a Filter, highlight the filter and click **Delete**.

   To view the SQL Query for a filter, highlight the filter and click **View SQL**.

3.24.3.2 Defining a Data Element Filter

Data Element Filter is a stored rule that expresses a set of constraints.

Data Element Filters can access most instrument columns and most columns in the Management Ledger. Data Element Filters are used within other rule types such as Allocation Rules, Transfer Pricing Rules, Asset and Liability Management Rules.

Only columns that match the data type of your Data Element selection are displayed in the drop-down list. For example, Balances between 10,000 and 20,000 Accounts opened in the current month Loans with amortization terms greater than 20 years.

Refer to the following steps, to create a Data Element filter:

1. Select the required database table from the **Table Name** drop-down list.
2. Select one or more columns from the **Column Name** to be included in the filter for viewing specific values.

   The columns that are present in the selected Database table are only listed.
3. Select the **Data Element** from the drop-down list.

   The Data elements are listed as a combination of the selected Database table and the selected column
4. Select one of the following Filter Methods to be applied to each data element, add the filter conditions based on the selected method.
   - Specific Values Filter
   - Ranges Filter
   - Another Element Filter

- Expressions Filter

5. After adding the required filters, click **Save**, to add the Filter definition to the Filter Summary page.

   The filter definition is added and a confirmation message is displayed.

   To Delete a Filter, highlight the filter and click **Delete**.

   To view the SQL Query for a filter, highlight the filter and click **View SQL**.

3.24.3.2.1 Specific Values Filter

You can match a selected database column to a specified value or values, using the Specific Value filter.

You may either include or exclude Specific Values, to view the data.

To create a specific value filter, proceed with the following steps, after selecting the Database table name, column name and the Data element.

1. Select **Specific Values** in the Filter Methods.
2. Enter the required filter value in the **Values** column.
   - When comparing Specific Values for a date type column, select the date using the Calendar control.
   - When comparing Specific Values for a character type column, enter only Character strings.
3. To add another row click **Add** (Plus sign) on the right hand side corner of the **Specific Values** pane. Repeat the previous step, to enter multiple values.
4. To include or exclude the specific values, in the results:
   - To view the results containing the entered specific value, select the value and select **Include**. Click **Add** to add the expression to the filter condition.
   - To view the results without the entered specific value, select the value and select **Exclude**. Click **Add** to add the expression to the filter condition.
5. To delete a value, select the value by clicking the check-box adjacent to the value. Click **Delete**.
6. To view the SQL statement for the specific value, select the value and click **View SQL**.

3.24.3.2.2 Ranges Filter

You can match a selected database column to a specified range/ranges of values or to ranges of values.

You may either include or exclude Specific Values, to view the data.

To create a Ranges filter, proceed with the following steps, after selecting the Database table name, column name and the Data element.

1. Select **Ranges** in the Filter Methods.
2. Refer to the following steps, and create a range or multiple ranges, view require data.

   You can use Ranges for data types - Term, Frequency, Leaf, Code, Identity, Date, Numeric and Varchar.

   a. Select the **From Operator** (> or >=), to include the lower limit of the range.

b. Enter the **Value From** which the Range begins.

c. Select the **To Operator** (< or <=), to indicate whether to include the specified value in the higher limit of the range.

d. Enter the **Value To** , to include the higher limit of that range.

3. To include or exclude the specific range, in the results:
   - To view the results containing the entered specific range, select the range and select **Include**. Click **Add** to add the range to the filter condition.
   - To view the results without the entered specific range, select the range and select **Exclude**. Click **Add** to add the range to the filter condition.
4. To delete a range, select the range by clicking the check-box adjacent to the value. Click **Delete**.
5. To view the SQL statement for the specific range, select the range and click **View SQL**.

3.24.3.2.3 Creating Another Element Filter

You can match a selected database column to another database column.

When creating an Another Data Element Filter Method, you may only compare a column to other columns that you have already selected (the Data Element drop-down list box will only contain columns that you have already selected).

.

To create an Another Element filter, proceed with the following steps, after selecting the Database table name, column name and the Data element.

1. Select **Another Element** in the Filter Methods.
2. Select a **Table Column**, that needs to be compared with the Data Element Column.
3. Select one of the following mathematical operators for comparison.
   - **=** - Equal to
   - **<>** = Not equal to
   - **<** - Lesser than
   - **>** - Greater than
   - **<=** - Lesser than or equal to
   - **>=** - Greater than or equal to
4. Select a **Data Element**, that needs to be compared with the Table Column.
5. Click **Add** to add the expression to the filter condition.

   To edit an existing Another Element Filter entry, select the entry listed in the **Filter Condition** pane. Modify the expression in the Another Element Pane and click **Update**.

3.24.3.2.4 Expressions Filter

Expressions filters help to include calculated conditions in filters.

To create an Expression filter, proceed with the following steps, after selecting the Database table name, column name and the Data element.

Refer to the following steps, to create a Expressions filter:

1. Select **Expressions** in the Filter Methods.
2. Refer to the following steps, to include an expression and filter the data based on the calculated output.
   a. Select one of the **Operator** (> or >=), to process the data in the specific column.
      - **=** - Equal to
      - **<>** - Not equal to
      - **<** - Lesser than
      - **>** - Greater than
      - **<=** - Lesser than or equal to
      - **>=** - Greater than or equal to
   b. Select the **Expression** for comparing the data in the selected table column.
3. Click **Add** to add the expression to the filter condition.

   To edit an existing Expression Filter entry, select the entry listed in the **Filter Condition** pane. Modify the expression in the Expressions pane and click **Update**.
4. To delete a range, select the range by clicking the check-box adjacent to the value. Click **Delete**.
5. To view the SQL statement for the specific range, select the range and click **View SQL**.

3.24.3.3 Defining Group Filter

Group Filters can be used to combine multiple Data Element Filters with a logical "AND".

For each attribute, you can select one or more values.

1. Select the Filter Type as **Group**.
2. Select the checkbox(s) adjacent to the required Data Element Filters in the **Available Filters** pane, and click **Move Selected Available Filters to Selected Filters**, to move them to **Selected Filters** pane.

   To select all the filters, click **Select All**.

   To search for a specific filter, enter the few letters from the filter name, and click the **Search**
3. To remove a filter from the **Selected Filters** pane, select the filter and click **Move Selected Filters to Available Filters**. Click Select All to move all the selected filters.
4. After adding the required filters, click **Save**, to add the Filter definition to the Filter Summary page.

   The filter definition is added and a confirmation message is displayed.

3.24.3.4 Defining Hierarchy Filter

Hierarchy Filter allows you to utilize Rollup Nodes within a Hierarchy to help you exclude (filter out) or include data within an OFSAA Rule.

For each attribute, you can select one or more values.

1. Select the Filter Type as **Hierarchy**.
2. Select the required **Dimension** from the drop-down list.
3. Select the required **Folder** from which you want to select the Hierarchy.
4. Select the **Hierarchy** from the list of Hierarchies displayed based on the selected Folder.
5. Click **Launch Hierarchy Browser**, access the Hierarchy Browser and select/ unselect the Child/Sibling Members to be included in the Filter.

   For more information about Hierarchy browser, refer Hierarchy Browser .
6. After adding the required filters, click **Save**, to add the Filter definition to the Filter Summary page.

   The filter definition is added and a confirmation message is displayed.

3.24.3.4.1 Hierarchy Browser

The Hierarchy Browser contains the list of available Members associated with the selected Hierarchy.

You can view the list of available members and the child nodes associated with the members, in the **Show Hierarchy** tab.

- To select a Member, click the check-box adjacent to the member.

  > **Note:**
  >
  > When a Member is selected, all the associated child members are also included in the Hierarchy filter. To include only a specific child member, expand the node and selected the required child member.

- To search for a specific member, click **Search**. Enter the keyword in the **Search Value** and click **Search** adjacent to the Search box.
  The searched members are displayed in the **Search Results** tab.
- You can view a selected tree member in a flat list, in the **Show Members** tab.
- To navigate through the list of available members.
  - Click **Expand/Collapse** to expand/collapse all the nodes. You can also click **Node** next to a member, to expand or collapse a Member node.
  - Click **Sort Ascending/Descending**, to view the list Members in alphabetical order.
  - In Search Results tab, click **Focus/Unfocus**, to select/deselect any specific node.

3.24.4 Managing Filter Definitions

You can view, edit, copy, delete and view SQL for the existing Filter Definitions from the Filter Summary.

In the Filter Summary Page, highlight a specific Filter Definition and click the **Action** (three dots). The following Options are displayed.

- View - View the details of selected filter definition.
- Edit - Edit a filter definition.
- Copy - Copy a filter definition
- Delete - Delete a filter definition.
- View SQL - View the SQL statement for a filter definition.
- Check Dependency - Check the dependent objects associated with the filter definition.

3.24.4.1 Viewing Filter Definition Details

You can view the details of an individual Filter Definition, using the following procedure:

1. Highlight the Filter Definition and click **Action** (three dots).
2. Click **View** .

   The Filter Definition page is displayed with the details such as Name, Description, Folder, Filter Type, Filter Conditions and Audit Info.

3.24.4.2 Editing Filter Definition Details

You can edit individual Filter Definition details at any given point. To edit the existing Filter Definition details:

1. Highlight the Filter Definition and click **Action** (three dots).
2. Click **Edit**.

   The Filter Definition Page is displayed with the details: Name, Description, Folder, Filter Type, Filter Conditions and Audit Info. Edit the required information and click **Save**.

3.24.4.3 Copying Filter Definition Details

You can copy individual Filter Definition Details, to recreate another new Member Definition. To copy the Member Definition Details as follows:

1. Highlight the Filter Definition and click **Action** (three dots).
2. Click **Copy** button.

   The Filter Definition Page is displayed with the details Name, Description, Folder, Filter Type and Filter Conditions.

   Edit the unique information such as Name, Description, Folder, Filter Type and Filter Conditions, and click **Save**.

3.24.4.4 Deleting Filter Details

To delete a Filter Definition:

1. Highlight the Filter Definition and click **Action** (three dots).
2. Click **Delete** .

   The Filter Definition is deleted after confirmation.

> **Note:**
>
> You cannot delete a definition if any dependency like Attribute, Hierarchy or Filter is attached to it. Detach the dependency before deleting the definition.

3.24.4.5 Checking Dependencies

To check the dependencies of a Filter Definition from the Filters Summary:

1. Click **Action** adjacent to the filter definition.
2. Click the **Check Dependency** .

   The list of Dependent Objects is displayed with Object ID, Name, and ID Type of the dependent Objects.

3.24.4.6 View SQL

To view SQL of a Filter Definition, perform the following steps:

1. Highlight the Filter Definition and click **Action** .
2. Click the **View SQL** button.

   The SQL statement of Filter Definition is displayed.

3.25 Static Deterministic Process

This module discusses the procedure for creating and executing a Static Deterministic Process (existing business only). When all the required assumptions are defined, The processing performs the Static Cashflow Calculations and generates an aggregated result set. The process allows you to perform the following tasks:

- Determine the source data that you want to process and the modeling horizon
- Specify the calculation elements; Valuation, Income Simulation, Interest Rate and Liquidity Gaps
- Include the market rate forecast and behavioral assumptoins
- Define your output dimensions for aggregation, and/or output raw cashflows

Execute the Cash Flow Process and generate results.

Topics:

- Static Deterministic Process Summary page

- Search Static Deterministic Process
- Create Static Deterministic Process
- Execute Static Deterministic Process
- View Static Deterministic Process log

3.25.1 Static Deterministic Process Summary page

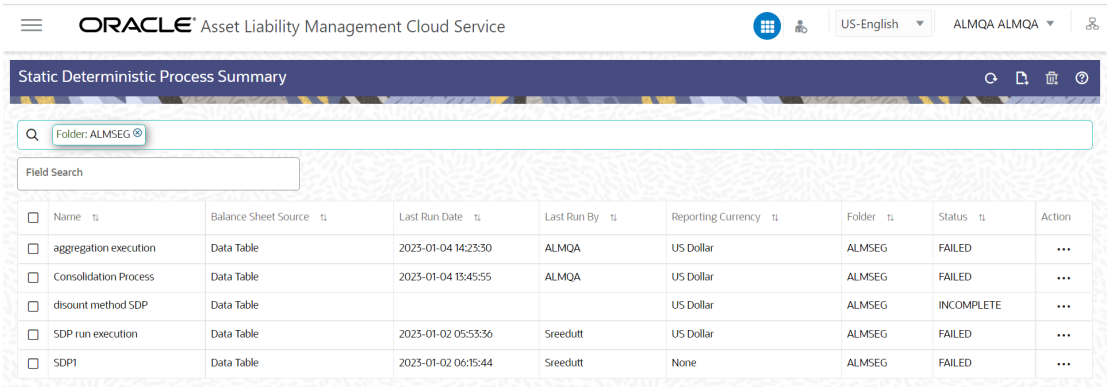
This page is the gateway to all Static Deterministic Processes and related functionality. You can navigate to other pages relating to Static Deterministic Process from this point.

The Static Deterministic Process Summary page displays the following columns:

Table 3-70 Static Deterministic Process – Fields and Descriptions

Column	Description
Name	Displays the Static Deterministic Process's short name.
Balance Sheet Source	Displays the insturment table selection for processing of data.
Last Run Date	Displays the Date and Time when Static Deterministic Process was run last.
Last Run By	Displays the Name of the user who last runs the Static Deterministic Process.
Reporting Currency	Displays the currency for consolidated resutls to be aggregted.
Folder	Displays the Folder name where the Static Deterministic Process is saved.
Status	Displays the status of the Static Deterministic Process.
Action	Displays the list of actions that can be performed on the Static Deterministic Process . For more information, see Static Deterministic Process – Icons and Descriptions.

Figure 3-111 Static Deterministic Process Summary



The Action column on the Static Deterministic Process Summary page offers several actions that allow you to perform different functions. The following actions are available for the Static Deterministic Process.

Table 3-71 Static Deterministic Process – Icons and Descriptions

Column	Description
Refresh	Click Refereh to refresh the Summary page.
Add	Click Add icon to build a new Static Deterministic Process.
Multiple Delete	Select one or more rules in the table and then click the Delete icon at the top right of the Summary Page to delete more than one rule at the same time.
Help	Click Help icon to view the Static Deterministic Process help.
View/Edit	Click on the Action icon against the Process Name and select View/Edit to view or edit the contents of a Static Deterministic in Read/ Write format.
Save As	Click on the Action icon against the Process Name and select Save As to create a copy of an existing Static Deterministic Process.
Delete	Click on the Action icon against the Process Name and select Delete to delete an existing Static Deterministic Process.
Run	Click on the Action icon against the Process Name and select Run to execute an existing Static Deterministic Process. After clicking Run, the Run Parameter Execution window is displayed. Select As of Date (Execution Date) and Legal Entity, and then click Ok. For more information, see Executing Static Deterministic Process section.
Execution Details	Click on the Action icon against the Process Name and select Executin Details to view execution details of the Static Deterministic Process.
Dependency Check	Reserved for future use.

3.25.2 Search Static Deterministic Process

Search for a Static Deterministic Process to perform any of the following tasks:

- View
- Edit
- Copy (Save As)
- Delete

Prerequisites

Predefined Static Deterministic Process

Procedure

To search the Static Deterministic Process , follow these steps:

1. Navigate to the Static Deterministic Process Summary page.
2. Enter the Name, Folder, Description, or Reporting Currency in Search Criteria.
3. Click the Search.

Only Static Deterministic Process that match the search criteria are displayed.

3.25.3 Create Static Deterministic Process

To create a new Static Deterministic Process, perform the following steps:

1. Navigate to the **Static Deterministic Process** Summary page.
2. Click Add . The **Create Static Deterministic Process** page is displayed.
3. Enter the details in the **Process Details** section.

Figure 3-112 Static Deterministic Process

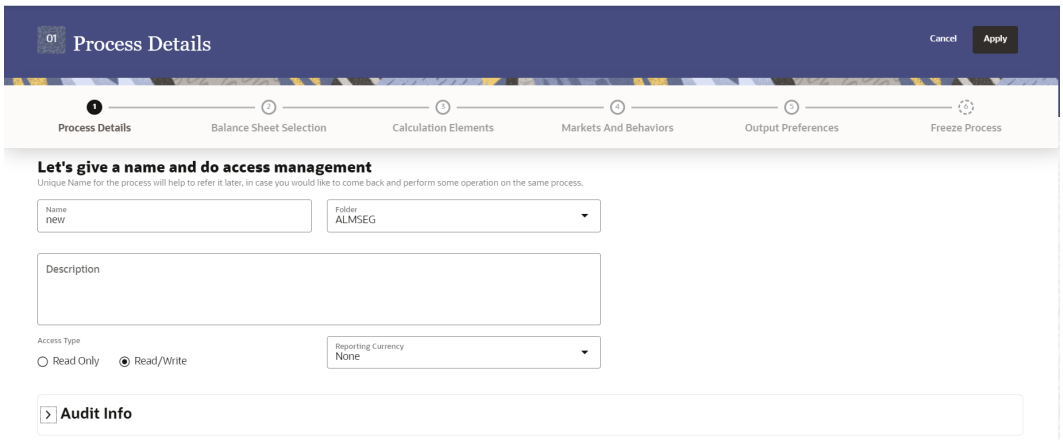
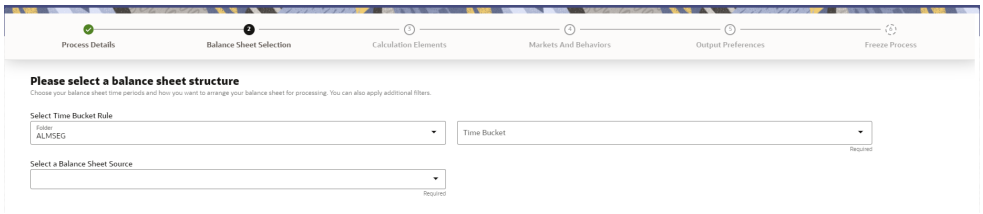


Table 3-72 List of process details used for Creating Static Deterministic Process

Parameter	Description
Name	Enter the name of the Static Deterministic Process.
Folder	Select the Folder where the Static Deterministic Process needs to be saved.
Description	Enter the description of the Static Deterministic Process.
Access Type	Select the Access Type as Read-Only or Read/ Write.
Reporting Currency	Select the currency for consolidation of resluts
Curency Provider	This field will be active once you select Reporting Currency. Select the Currency Provider as Default.

4. Click **Apply** to navigate to the **Balance Sheet Selection** section.

Figure 3-113 Balance Sheet Selection



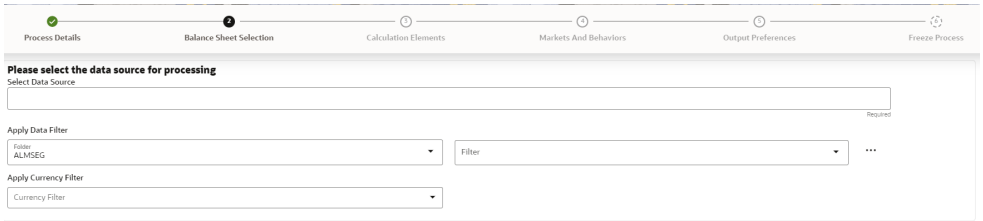
5. Enter the Balance Sheet Structure details as shown in the following table:

Table 3-73 List of Balance Sheet Structure details used for Creating Static Deterministic Process

Parameter	Description
Time Bucket Rule Folder	Select the Folder from which you want to apply Time Bucket Rule.
Time Bucket Rule	Chose the time horizon/aggregation for process
Balance Sheet Source	Select the Balance Sheet Source from Balance Sheet Source drop-down list.

After selecting the Balance Sheet Source, Data Source details block is activated.

Figure 3-114 Data Source details of Balance Sheet Selection



Enter the Data Source details of Balance Sheet.

Table 3-74 Data Source details used for Creating Static Deterministic Process

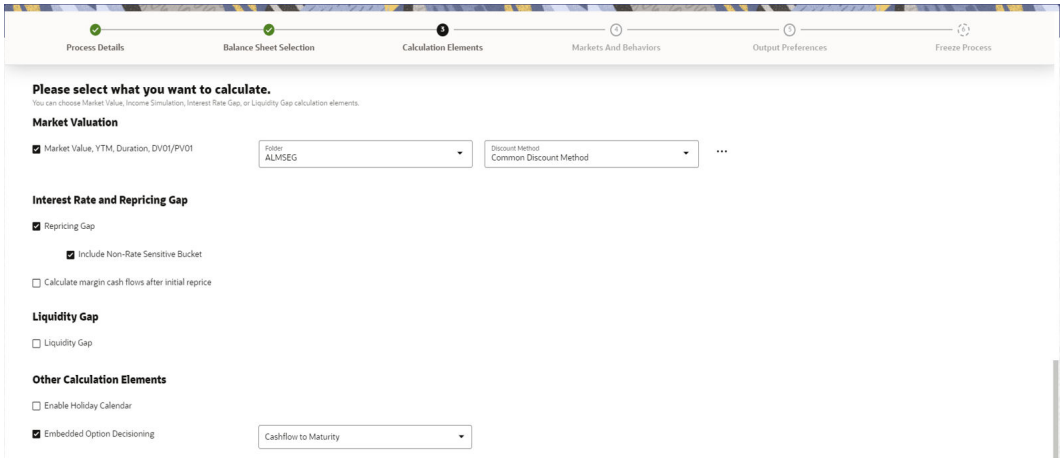
Parameter	Description
Data Source	This field allows you to select the Instrument tables that must be included in a Static Deterministic Process. For example, Asset, Derivative, and so on.
Data Filter Folder	Select the Folder from which you want to apply Data Filter.
Data Filter	This field allows you to select a subset of data for processing by selecting a filter. You can select a filter that was previously created, or define a new filter on the fly.

Table 3-74 (Cont.) Data Source details used for Creating Static Deterministic Process

Parameter	Description
Currency Filter	Optionally apply a currency filter on the selected data.

6. Click **Apply** to navigate to the **Calculation Elements** section.

Figure 3-115 Calculation Elements



7. Enter the **Calculation Elements** details as shown in the following table:

Table 3-75 List of Calculation Elements details used for Creating Static Deterministic Process

Parameter	Description
Market Valuation	Select the Market Value, YTM, Duration, DV01/ PV01 option if you want to perform present value (MV) calculatons. Discount method is required. You can select from predefiend rules, or create one on the fly.
Discount Method Folder	Select the folder from where discount rules are saved.

Table 3-75 (Cont.) List of Calculation Elements details used for Creating Static Deterministic Process

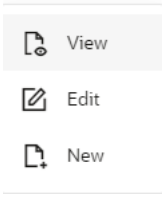
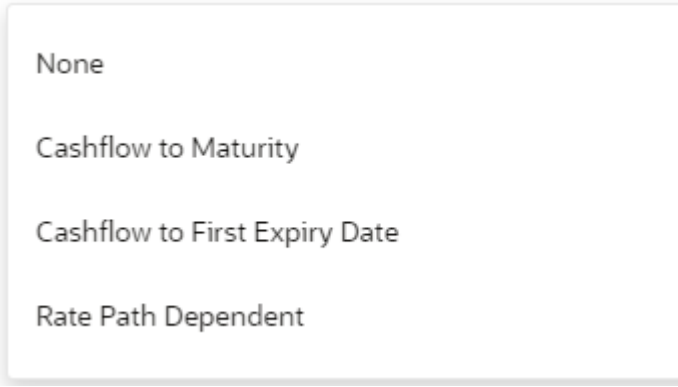
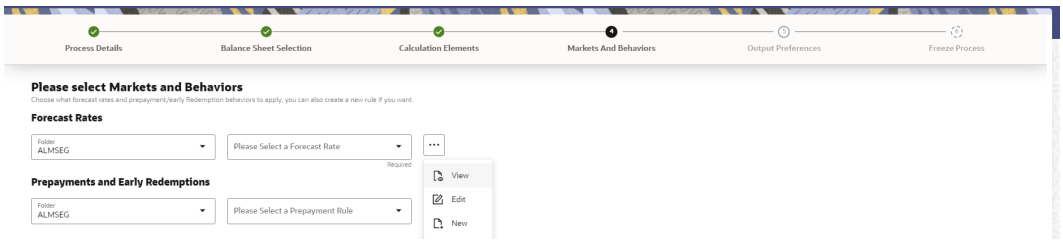
Parameter	Description
Discount Method	Select Discount Method you want to be applied to the process. refer to Discount Method section to set up Discount Method Rules. Also, following options are available when you click Action button next to Discount Method. **Figure 3-116 Discount Method** 
Repricing Gap	Click on Repricing Gap if you want to include Interest Rate gap risk measures. Note, this requires a time bucket with IR Gap buckets defined.
Include Non- Rate Sensitive Bucket	Include Non Rate Sensitive Bucket check-box gets enabled when 'Repricing Gap' is selected. The Attribute of product dimension 'Interest Rate Sensitivity Category' identifies products as Interest Rate sensitive or Non Interest Rate sensitive. Once 'Include Non Rate Sensitive Bucket' is enabled, reprice gap output of Products which are mapped as Non Interest Rate sensitive, would move into Non Interest Rate Sensitive bucket. For more information on Non Interest Rate Sensitive Bucket, see Time Buckets If 'Include Non Rate Sensitive Bucket' is not enabled, engine will ignore 'Interest Rate Sensitivity Category' product attribute, and would treat all products as Interest Rate Sensitive. Reprice Gap output would move into respective Reprice Gap buckets.
Calculate Margin Cash Flow After Initial Reprice	If 'Calcualte Margin casflows as After Initial Reprice' is enabled, the engine will use the margin of adjustable rate instruments to continue generating interest cash flows after a gap repricing event up until total runoff occurs.
Liquidity Gap	Select the Liquidity Gap if you want to include liquidity gap risk meansures. Note, this requires a time bucket with LR gap buckets defined.
Enable Holiday Calendar	If you enable Holiday Calendar cash flow dates falling on a holiday get adjusted as per defined conventions. Holiday calendar criteria is defined on the insturments.

Table 3-75 (Cont.) List of Calculation Elements details used for Creating Static Deterministic Process

Parameter	Description
Embeded Option Decisioning	If your processed data contains fixed rate bonds with embedded embedded options, you can chose the bahavior of the option to force it to maturity of the insuruemnt, force it to first option expiry date, or let it be rate path dependent. This drop-down has following options: **Figure 3-117 Embeded Option Decisioning** 

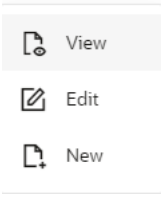
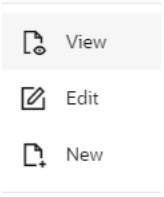
8. Click **Apply** to navigate to the **Markets and Behaviors** section.

Figure 3-118 Markets and Behaviors



9. Enter the **Calculation Elements** details as shown in the following table:

Table 3-76 List of Market and Behavior details used for Creating Static Deterministic Process

Parameter	Description
Forecast Rates	Select the Folder and Forecast Rates Rule you want to be applied to the process. See Forecast Rate Scenarios to define rate scenarios. **Figure 3-119 Forecast Rates** 
Prepayment Rules and Early Redemptions	Select the Folder and Prepayment Rule you want to be applied during cash flow calculation. See Prepayment, to set up Prepayment Methods. This is an optional step. **Figure 3-120 Prepayment Rules** 

10. Enter the following details in **Other Behavioral Characteristics** sub-section of **Market and Behaviors** section.

Figure 3-121 Other Behavioral Characteristics

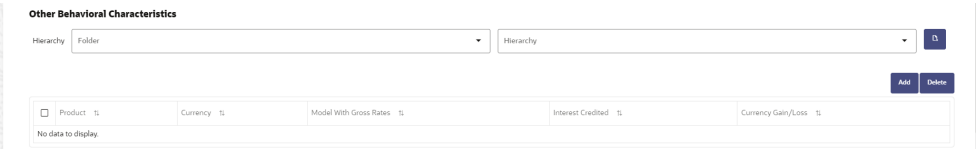


Table 3-77 Product Characteristics details used for Creating Static Deterministic Process

Parameter	Description
Product Hierarchy Folder	You can specify additional processing parameters at a product-currency level. Select the Folder from the **Product Hierarchy** Folder list.
Product Hierarchy	Select the Product Hierarchy on which you want to specify parameters. To add a Product Hierarchy, follow these steps: a. Click **Open Hierarchy Browser** button next to the **Hierarchy** field. b. Select one or more products using the corresponding check-box and click Done.

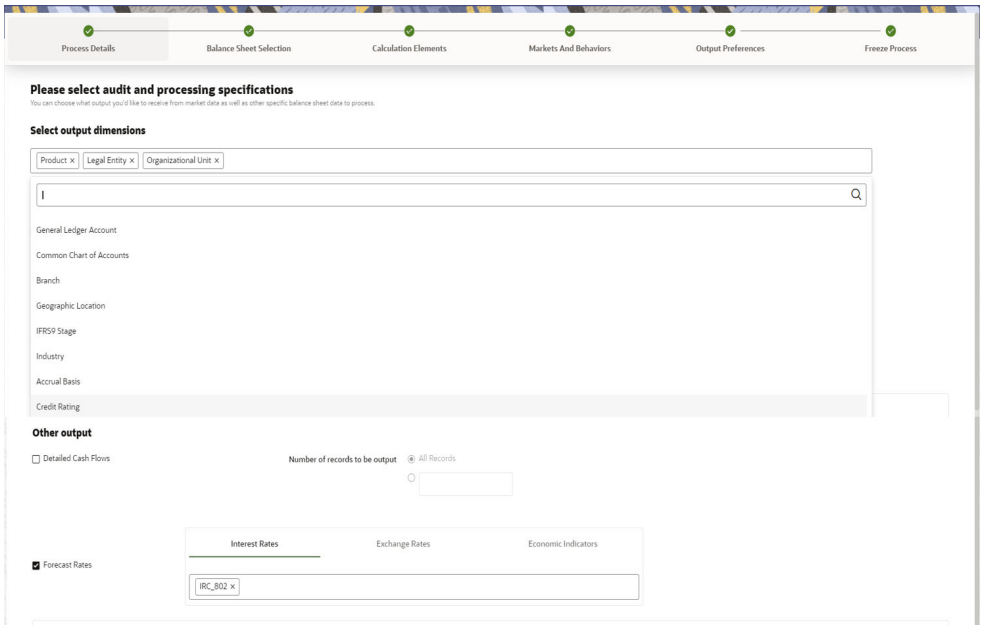
11. After clicking **Add**, the list of product is displayed with the following details:

Table 3-78 Product details used for Creating Static Deterministic Process

Parameter	Description
Product	Shows the selected product details.
Currency	Shows the currency of the selected product.
Interest Credited	Yes or No status of Interest Credited. This option shows the interest payments to be capitalized as principal on simple or non-amortizing instruments.
Model With Gross Rates	If the institution has outsourced loan serving rights for some of the assets (most typically mortgages), the rates paid by customers on those assets (gross rates) are greater than the rates received by the bank (net rates). For these instruments, both a net and gross rate is calculated within the cash flow engine and both gross and net rate financial elements are the output. The gross rate is used for prepayment and amortization calculations. The net rate is used for income simulation and the calculation of retained earnings in the auto-balancing process.
Currency Gain/Loss	If you are consolidating to a reporting currency, select one of the following mehtods Historical, Temporal or Curren Rate. See Currency Gain Loss Basis for more detials.

12. Click **Apply** to navigate to the **Output Preferences** section.

Figure 3-122 Output Preferences



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13. Enter the **Output Preferences** details shown in the following table.

Table 3-79 List of Output Preferences details used for Creating Static Deterministic Process

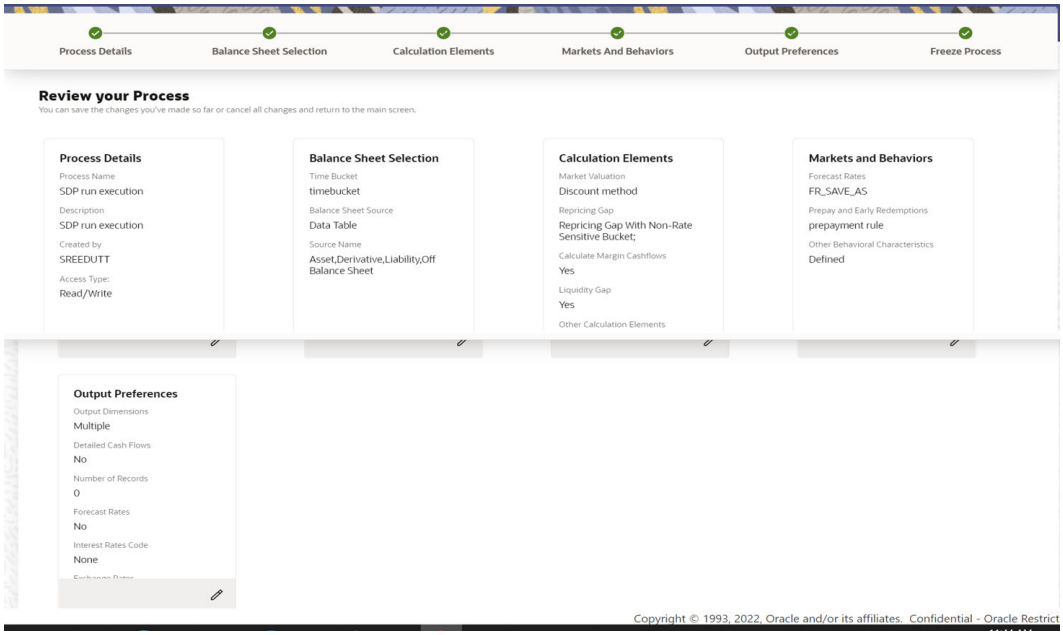
Parameter	Description
Output Dimensions	Start by typing any key processing dimension in the text box. A list of KPD's will appear and you can selct up to 10 for consolidation.
Detailed Cash Flow	Check the box to record the instrument detail cash flows occurring for the desired number of records processed. For each record, daily cashflow and market value results are written to the FSI_ALM_CASHFLOW_OUTPUT_HIST and FSI_ALM_CASHFLOW_DYN_MV_OUTPUT_HIST tables.
	Select the desired number of Records in the dialog box or select all records to be output. NOTE - the number of records output directly impact processing time. It is recomeeneded to use this as an audit function only, with few recors chosen.
Forecast Interest Rates	Select the Interest Rate Curves for which you want the engine to write forecasted interest rates in the database table.

Table 3-79 (Cont.) List of Output Preferences details used for Creating Static Deterministic Process

Parameter	Description
Forecast Exchange Rate	Select the Exchange Rates for which you want the engine to write forecasted exchange rates in the database table.
Forecast Economic Indicators	Select the Economic Indicators for which you want the engine to write forecasted interest rates in the database table.

14. Click **Apply** to navigate to the **Freeze Process** section.

Figure 3-123 Freeze Process



15. Verify the changes and click **Save**.

3.25.4 Executing Static Deterministic Process

You can execute Static Deterministic process using following methods:

- Static Deterministic Process UI
- Schedular Service

3.25.4.1 Using Static Deterministic Process UI

To execute the Static Deterministic process, follow these steps:

1. Navigate to the Static Deterministic Process Summary page.
2. Search for a Static Deterministic Process.
3. Click in the Action column and select Run to execute an existing Static Deterministic Process. The Run Parameter Execution window is displayed.

4. Select the As of Date (Execution Date) and Legal Entity, and then click Ok.
5. The Static Deterministic Run Confirmation page is displayed. The status of the process is displayed in the Status column. After completion of the process, you can navigate to the Execution Details page by selecting the Execution Details option under the Action column.

3.25.4.2 Using Scheduler Service

To execute the Static Deterministic Process, follow these steps:

1. Navigate to **Operations and Processes** menu, and select **Scheduler**.
2. Define a new batch.
3. Enter the Batch Name and Description, and then Save the batch.
4. To add a task, navigate to **Define Task**.
5. Select the Batch from Batch drop-down list on Define Task window.
6. Click the **Add** button.
7. Define the task with below details:
   - **Task Code:** This can be same as the Process ID of ALM Static Deterministic Process or something else.
   - **Task Name:** This can be same as name of the ALM Static Deterministic Process or something else.
   - **Task Description:** This can be same a name of the ALM Static Deterministic Process or something else.
   - **Task Type:** REST
   - **Component:** ALM Static Deterministic Process
   - **Process Name:** Select one value from the list.
   - **Legal Entity Hierarchy:** Select one value from the list.
   - **Legal Entity:** Select one value from the list.
8. Save and Execute the batch with Batch ID and MIS Date.

For more information, see the Scheduler Service.

3.25.5 View Static Deterministic Process Log

To view the execution details of the Static Deterministic Process, follow these steps:

1. Navigate to the Static Deterministic Process Summary page.
2. Search for a Static Deterministic Process.
3. Click on the Action icon against the Process Name and select Execution Details. The **Execution Details** window is displayed.
4. Click any **Execution ID** to view the log details. The **Log Viewer** window shows the complete details of process along with Batch Run ID information.

3.26 Dynamic Deterministic Process

This module discusses the procedure for creating and executing a Dynamic Deterministic Process (existing business only).

Dynamic Deterministic processing generates output based on a set of user-defined forecast rate scenarios and includes new business assumption rules in the process flow.

The process allows you to perform the following tasks:

- Determine the source data that you want to process and the modeling horizon
- Specify the calculation elements; Valuation, Income Simulation, Interest Rate and Liquidity Gaps
- Include the market rate forecast and behavioral assumptoins
- Define your output dimensions for aggregation, and/or output raw cashflows
- Execute the Cash Flow Process and generate results.

Topics:

- Dynamic Deterministic Process Summary page
- Search Dynamic Deterministic Process
- Create Dynamic Deterministic Process
- Execute Dynamic Deterministic Process
- View Dynamic Deterministic Process log

3.26.1 Dynamic Deterministic Process Summary page

This page is the gateway to all Dynamic Deterministic Processes and related functionality. You can navigate to other pages relating to Dynamic Deterministic Process from this point.

The Dynamic Deterministic Process Summary page displays the following columns:

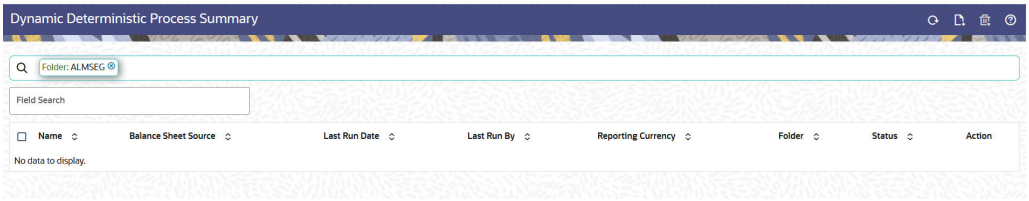
Table 3-80 Dynamic Deterministic Process – Fields and Descriptions

Column	Description
Name	Displays the Dynamic Deterministic Process's short name.
Balance Sheet Source	Displays the insturment table selection for processing of data.
Last Run Date	Displays the Date and Time when Dynamic Deterministic Process was run last.
Last Run By	Displays the Name of the user who last runs the Dynamic Deterministic Process.
Reporting Currency	Displays the currency for consolidated resutls to be aggregted.
Folder	Displays the Folder name where the Dynamic Deterministic Process is saved.
Status	Displays the status of the Dynamic Deterministic Process.

Table 3-80 (Cont.) Dynamic Deterministic Process – Fields and Descriptions

Column	Description
Action	Displays the list of actions that can be performed on the Dynamic Deterministic Process. For more information, see Dynamic Deterministic Process – Icons and Descriptions.

Figure 3-124 Dynamic Deterministic Process Summary



The Action column on the Dynamic Deterministic Process Summary page offers several actions that allow you to perform different functions. The following actions are available for the Dynamic Deterministic Process.

Table 3-81 Dynamic Deterministic Process – Icons and Descriptions

Column	Description
Refresh	Click Refereh to refresh the Summary page.
Add	Click Add icon to build a new Dynamic Deterministic Process.
Multiple Delete	Select one or more rules in the table and then click the Delete icon at the top right of the Summary Page to delete more than one rule at the same time.
Help	Click Help icon to view the Dynamic Deterministic Process help.
View/Edit	Click on the Action icon against the Process Name and select View/Edit to view or edit the contents of a Dynamic Deterministic in Read/ Write format.
Save As	Click on the Action icon against the Process Name and select Save As to create a copy of an existing Dynamic Deterministic Process.
Delete	Click on the Action icon against the Process Name and select Delete to delete an existing Dynamic Deterministic Process.

Table 3-81 (Cont.) Dynamic Deterministic Process – Icons and Descriptions

Column	Description
Run	Click on the Action icon against the Process Name and select Run to execute an existing Dynamic Deterministic Process. After clicking Run, the Run Parameter Execution window is displayed. Select As of Date (Execution Date) and Legal Entity, and then click Ok. For more information, see Executing Dynamic Deterministic Process section.
Execution Details	Click on the Action icon against the Process Name and select Executin Details to view execution details of the Dynamic Deterministic Process.
Dependency Check	Reserved for future use.

3.26.2 Search Dynamic Deterministic process

Search for a Dynamic Deterministic process to perform any of the following tasks:

- View
- Edit
- Copy (Save As)
- Delete

Prerequisites

Predefined Dynamic Deterministic process

Procedure

To search the Dynamic Deterministic process , follow these steps:

1. Navigate to the Dynamic Deterministic process Summary page.
2. Enter the Name, Folder, Description, or Reporting Currency in Search Criteria.
3. Click the Search.

Only Dynamic Deterministic process that match the search criteria are displayed.

3.26.3 Create Dynamic Deterministic Process

To create a new Dynamic Deterministic Process, perform the following steps:

1. Navigate to the **Dynamic Deterministic Process** Summary page.
2. Click Add . The **Create Dynamic Deterministic Process** page is displayed.
3. Enter the details in the **Process Details** section.

Figure 3-125 Dynamic Deterministic Process

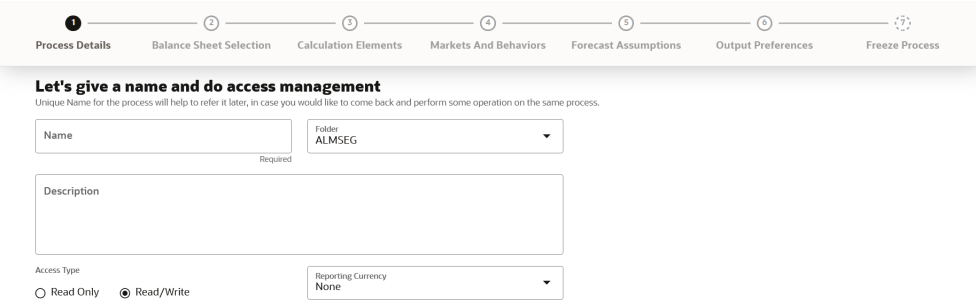
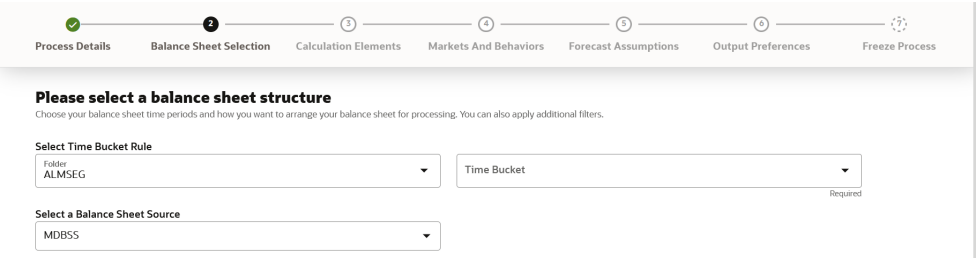


Table 3-82 List of process details used for Creating Dynamic Deterministic Process

Parameter	Description
Name	Enter the name of the Dynamic Deterministic Process.
Folder	Select the Folder where the Dynamic Deterministic Process needs to be saved.
Description	Enter the description of the Dynamic Deterministic Process.
Access Type	Select the Access Type as Read-Only or Read/Write.
Reporting Currency	Select the currency for consolidation of resluts
Curency Provider	This field will be active once you select Reporting Currency. Select the Currency Provider as Default.

4. Click **Apply** to navigate to the **Balance Sheet Selection** section.

Figure 3-126 Balance Sheet Selection



5. Enter the Balance Sheet Structure details as shown in the following table:

Table 3-83 List of Balance Sheet Structure details used for Creating Dynamic Deterministic Process

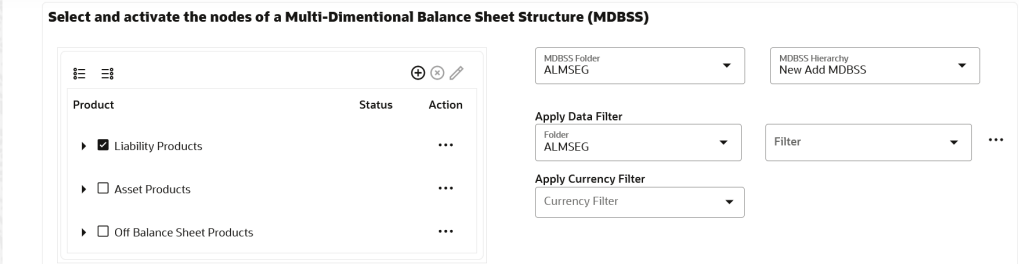
Parameter	Description
Time Bucket Rule Folder	Select the Folder from which you want to apply Time Bucket Rule.

Table 3-83 (Cont.) List of Balance Sheet Structure details used for Creating Dynamic Deterministic Process

Parameter	Description
Time Bucket Rule	Select the time horizon/aggregation for process
Balance Sheet Source	Select the Balance Sheet Source from Balance Sheet Source drop-down list.

After selecting the Balance Sheet Source, Data Source details block is activated.

Figure 3-127 Data Source details of Balance Sheet Selection



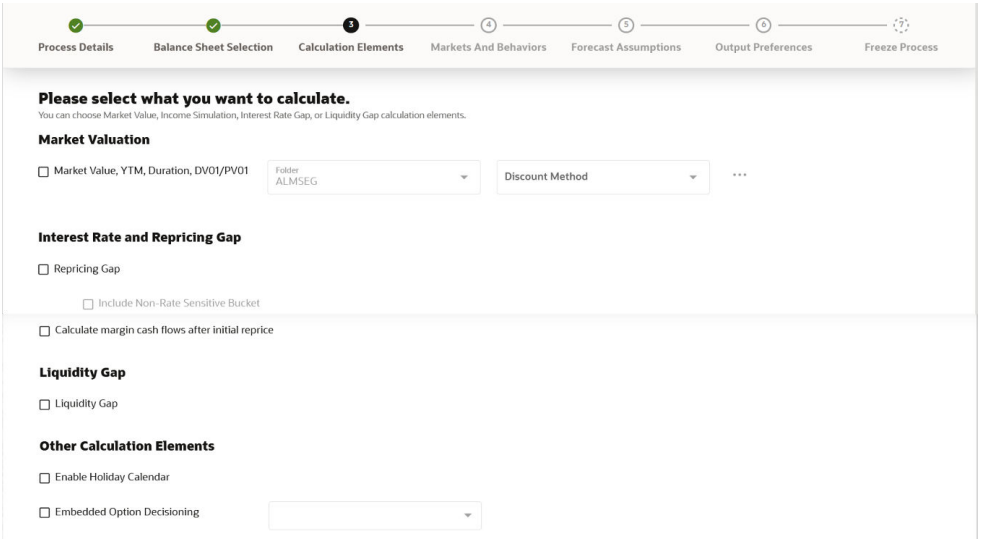
Enter the Data Source details of Balance Sheet.

Table 3-84 Data Source details used for Creating Dynamic Deterministic Process

Parameter	Description
Assumption Brower	Select the Product from Assumption Browser and click Add under Action option.
MDBSS Folder	Select the MDBSS folder
MDBSS Hierarchy	Select the MDBSS hierarchy
Data Filter Folder	Select the Folder from which you want to apply Data Filter.
Data Filter	This field allows you to select a subset of data for processing by selecting a filter. You can select a filter that was previously created, or define a new filter on the fly. **Note:** Data filter defined on PORTFOLIO table only can be used in Balance Sheet selection.
Currency Filter	Optionally apply a currency filter on the selected data.

6. Click **Apply** to navigate to the **Calculation Elements** section.

Figure 3-128 Calculation Elements



7. Enter the **Calculation Elements** details as shown in the following table:

Table 3-85 List of Calculation Elements details used for Creating Dynamic Deterministic Process

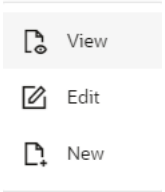
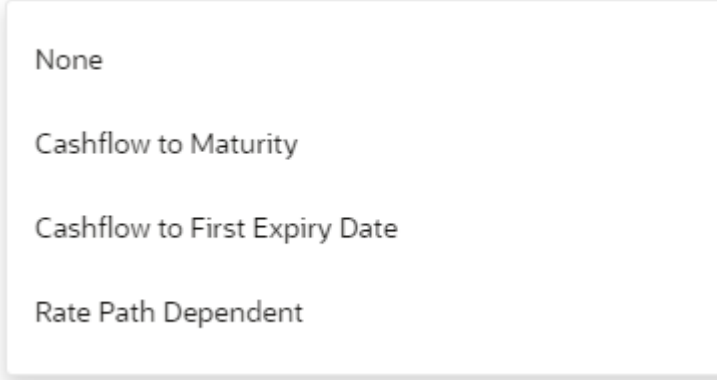
Parameter	Description
Market Valuation	Select the Market Value, YTM, Duration, DV01/PV01 option if you want to perform present value (MV) calculatons. Discount method is required. You can select from predefiend rules, or create one on the fly.
Discount Method Folder	Select the folder from where discount rules are saved.
Discount Method	Select Discount Method you want to be applied to the process. refer to Discount Method section to set up Discount Method Rules. Also, following options are available when you click Action button next to Discount Method. **Figure 3-129 Discount Method** 

Table 3-85 (Cont.) List of Calculation Elements details used for Creating Dynamic Deterministic Process

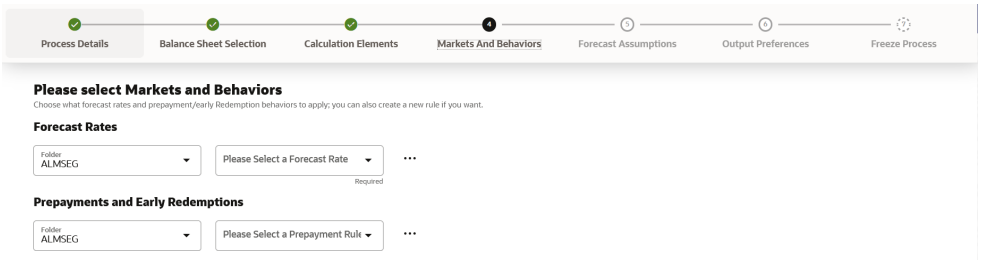
Parameter	Description
Repricing Gap	Click on Repricing Gap if you want to include Interest Rate gap risk measures. Note, this requires a time bucket with IR Gap buckets defined.
Include Non- Rate Sensitive Bucket	Include Non Rate Sensitive Bucket check-box gets enabled when 'Repricing Gap' is selected. The Attribute of product dimension 'Interest Rate Sensitivity Category' identifies products as Interest Rate sensitive or Non Interest Rate sensitive. Once 'Include Non Rate Sensitive Bucket' is enabled, reprice gap output of Products which are mapped as Non Interest Rate sensitive, would move into Non Interest Rate Sensitive bucket. For more information on Non Interest Rate Sensitive Bucket, see Time Buckets If 'Include Non Rate Sensitive Bucket' is not enabled, engine will ignore 'Interest Rate Sensitivity Category' product attribute, and would treat all products as Interest Rate Sensitive. Reprice Gap output would move into respective Reprice Gap buckets.
Calculate Margin Cash Flow After Initial Reprice	If 'Calcualte Margin casflows as After Initial Reprice' is enabled, the engine will use the margin of adjustable rate instruments to continue generating interest cash flows after a gap repricing event up until total runoff occurs.
Liquidity Gap	Select the Liquidity Gap if you want to include liquidity gap risk meansures. Note, this requires a time bucket with LR gap buckets defined.
Enable Holiday Calendar	If you enable Holiday Calendar cash flow dates falling on a holiday get adjusted as per defined conventions. Holiday calendar criteria is defined on the insturments.

Table 3-85 (Cont.) List of Calculation Elements details used for Creating Dynamic Deterministic Process

Parameter	Description
Embeded Option Decisioning	If your processed data contains fixed rate bonds with embedded embedded options, you can chose the bahavior of the option to force it to maturity of the insuruemnt, force it to first option expiry date, or let it be rate path dependent. This drop-down has following options: **Figure 3-130 Embeded Option Decisioning** 

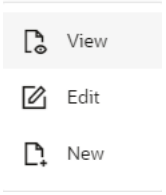
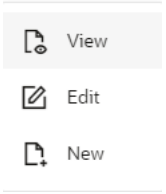
8. Click **Apply** to navigate to the **Markets and Behaviors** section.

Figure 3-131 Markets and Behaviors



9. Enter the **Markets and Behaviors** details as shown in the following table:

Table 3-86 List of Market and Behavior details used for Creating Dynamic Deterministic Process

Parameter	Description
Forecast Rates	Select the Folder and Forecast Rates Rule you want to be applied to the process. SeeForecast Rates Forecast Rates to define rate scenarios. **Figure 3-132 Forecast Rates** 
Prepayment Rules and Early Redemptions	Select the Folder and Prepayment Rule you want to be applied during cash flow calculation. SeePrepayment Methods to set up Prepayment Methods. This is an optional step. **Figure 3-133 Prepayment Rules** 

10. Enter the following details in **Other Behavioral Characteristics** sub-section of **Market and Behaviors** section.

Figure 3-134 Other Behavioral Characteristics

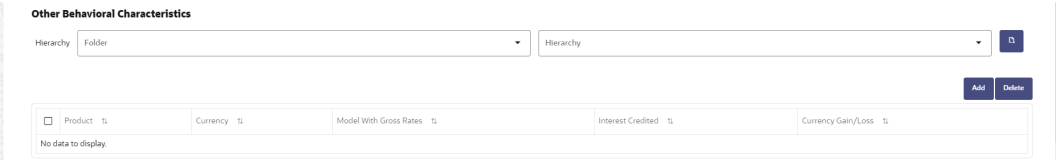
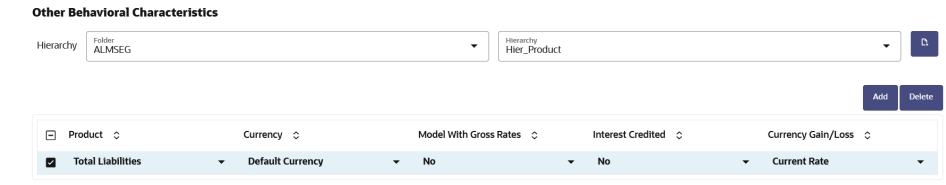


Table 3-87 Product Characteristics details used for Creating Dynamic Deterministic Process

Parameter	Description
Product Hierarchy Folder	You can specify additional processing parameters at a product-currency level. Select the Folder from the **Product Hierarchy** Folder list.
Product Hierarchy	Select the Product Hierarchy on which you want to specify parameters. To add a Product Hierarchy, follow these steps: a. Click **Open Hierarchy Browser** button next to the **Hierarchy** field. b. Select one or more products using the corresponding check-box and click Done.

Figure 3-135 Product details



11. After clicking **Add**, the list of product is displayed with the following details:

Table 3-88 Product details used for Creating Dynamic Deterministic Process

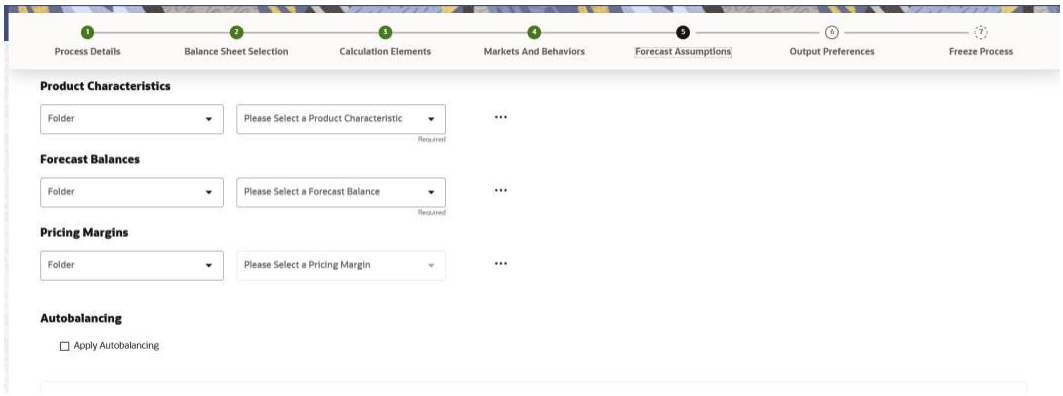
Parameter	Description
Product	Shows the selected product details.
Currency	Shows the currency of the selected product.
Interest Credited	Yes or No status of Interest Credited. This option shows the interest payments to be capitalized as principal on simple or non-amortizing instruments.
Model With Gross Rates	If the institution has outsourced loan serving rights for some of the assets (most typically mortgages), the rates paid by customers on those assets (gross rates) are greater than the rates received by the bank (net rates). For these instruments, both a net and gross rate is calculated within the cash flow engine and both gross and net rate financial elements are the output. The gross rate is used for prepayment and amortization calculations. The net rate is used for income simulation and the calculation of retained earnings in the auto-balancing process.

Table 3-88 (Cont.) Product details used for Creating Dynamic Deterministic Process

Parameter	Description
Currency Gain/Loss	If you are consolidating to a reporting currency, select one of the following mehtods Historical, Temporal or Curren Rate. See Currency Gain Loss Basis for more detials.

12. Click **Apply** to navigate to the **Forecast Assumptions** section.

Figure 3-136 Forecast Assumptions



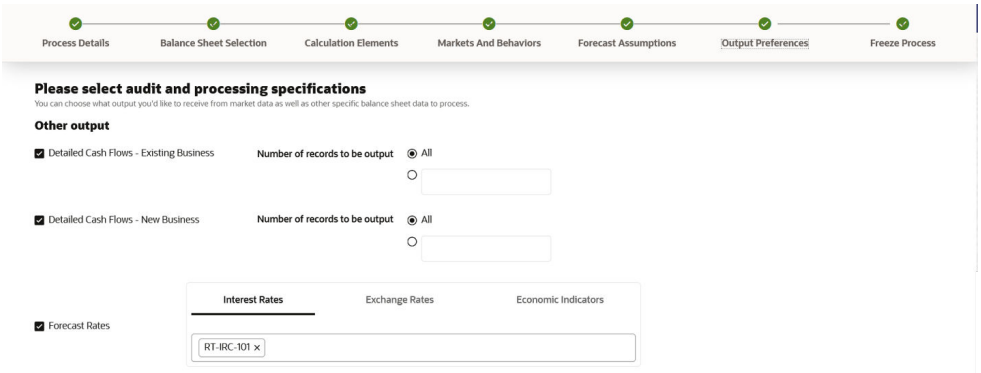
13. Enter the **Forecast Assumptions** details as shown in the following table:

Table 3-89 List of Forecast Assumptions details used for Creating Dynamic Deterministic Process

Parameter	Description
Product Characteristics	Select the Folder and Product Characteristics Rule you want to be applied to the process.
Forecast Balances	Select the Folder and Forecast Balance Rule you want to be applied to the process.
Pricing Margins	Select the Folder and Pricing Margin Rule you want to be applied to the process.
Autobalancing	Select Apply Autobalancing check-box to enable the Autobalancing. Use autobalancing to maintain a balanced balance sheet, and generate retained earnings, dividends and taxes. Product leaf members used during the autobalancing process must be defined within your Application Preferences, including: Assets Liabilities Retained Earnings Dividends Federal Tax State Tax Accumulated Translation Balance If you do not completely define the required autobalancing leaves in Application Preferences, an error message is generated during processing.

14. Click **Apply** to navigate to the **Output Preferences** section.

Figure 3-137 Output Preferences



.

15. Enter the **Output Preferences** details shown in the following table.

Table 3-90 List of Output Preferences details used for Creating Dynamic Deterministic Process

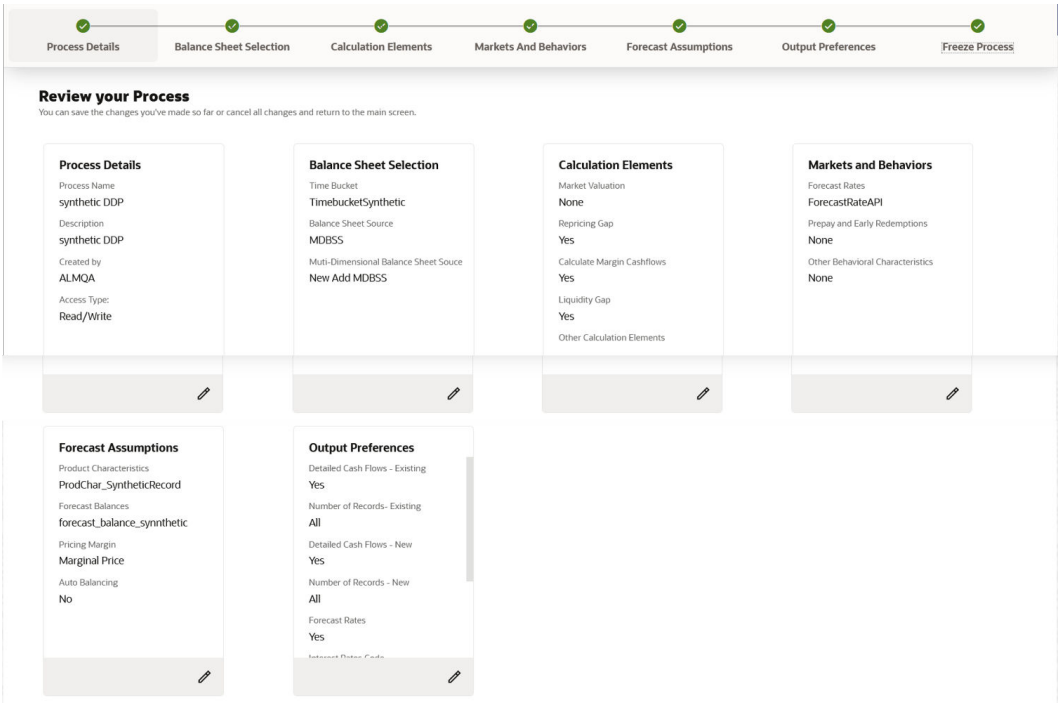
Parameter	Description
Detailed Cash Flow - Existing Business	Check the box to record the instrument detail cash flows occurring for the desired number of records processed. For each record, daily cashflow and market value results are written to the FSI_ALM_CASHFLOW_OUTPUT_HIST and FSI_ALM_CASHFLOW_DYN_MV_OUTPUT_HIST tables. Select the desired number of Records in the dialog box or select all records to be output. NOTE - the number of records output directly impact processing time. It is recomeeneded to use this as an audit function only, with few recors chosen.

Table 3-90 (Cont.) List of Output Preferences details used for Creating Dynamic Deterministic Process

Parameter	Description
Detailed Cash Flow - New Business	Check the box to record the instrument detail cash flows occurring for the desired number of records processed. For each record, daily cashflow and market value results are written to the FSI_ALM_CASHFLOW_OUTPUT_HIST and FSI_ALM_CASHFLOW_DYN_MV_OUTPUT_HIST tables. Select the desired number of Records in the dialog box or select all records to be output. NOTE - the number of records output directly impact processing time. It is recomeeneded to use this as an audit function only, with few recors chosen.
Forecast Interest Rates	Select the Interest Rate Curves for which you want the engine to write forecasted interest rates in the database table.
Forecast Exchange Rate	Select the Exchange Rates for which you want the engine to write forecasted exchange rates in the database table.
Forecast Economic Indicators	Select the Economic Indicators for which you want the engine to write forecasted interest rates in the database table.

16. Click **Apply** to navigate to the **Freeze Process** section.

Figure 3-138 Freeze Process



17. Verify the changes and click **Save**.

3.26.4 Executing Dynamic Deterministic process

You can execute Dynamic Deterministic process using following methods:

- Dynamic Deterministic process UI
- Schedular Service

3.26.4.1 Using Dynamic Deterministic process UI

To execute the Dynamic Deterministic process, follow these steps:

1. Navigate to the Dynamic Deterministic process Summary page.
2. Search for a Dynamic Deterministic process.
3. Click in the Action column and select Run to execute an existing Dynamic Deterministic process. The Run Parameter Execution window is displayed.
4. Select the As of Date (Execution Date) and Legal Entity, and then click Ok.
5. The Dynamic Deterministic Run Confirmation page is displayed. The status of the process is displayed in the Status column. After completion of the process, you can navigate to the Execution Details page by selecting the Execution Details option under the Action column.

3.26.4.2 Using Scheduler Service

To execute the Dynamic Deterministic process, follow these steps:

1. Navigate to **Operations and Processes** menu, and select **Scheduler**.
2. To define a new batch, navigate to **Define Batch**.
3. Enter the Batch Name and Description, and then save the batch.
4. To add a task, navigate to **Define Task**.
5. Select the Batch from Batch drop-down list on **Define Task** window.
6. Click the **Add** button.
7. Define the task with below details:
    - **Task Code:** This can be same as the Process ID of ALM Dynamic Deterministic process or something else.
    - **Task Name:** This can be same as name of the ALM Dynamic Deterministic process or something else.
    - **Task Description:** This can be same a name of the ALM Dynamic Deterministic process or something else.
    - **Task Type:** REST
    - **Component:** ALM Dynamic Deterministic process
    - **Process Name:** Select one value from the list.
    - **Legal Entity Hierarchy:** Select one value from the list.
    - **Legal Entity:** Select one value from the list.

8. Save and Execute the batch with Batch ID and MIS Date.

For more information, see the Schedular Service.

3.26.5 View Dynamic Deterministic process Log

To view the execution details of the Dynamic Deterministic process, follow these steps:

1. Navigate to the Dynamic Deterministic process Summary page.
2. Search for a Dynamic Deterministic process.
3. Click on the Action icon against the Process Name and select Execution Details. The **Execution Details** window is displayed.
4. Click any **Execution ID** to view the log details. The **Log Viewer** window shows the complete details of process along with Batch Run ID information.

4
Operations

This chapter covers the following topics:

1. The Scheduler Service is a service that automates behind-the-scenes work that is necessary to sustain various enterprise applications and functionalities. This automation helps the applications to control unattended background jobs program execution. For more information, see Scheduler Services.
2. Object Migration is the process of defining, exporting and importing objects across environments (prod and non-prod)/instances. This feature also facilitates to migrate within the same setup or different setups. For more information, see Object Migration.

4.1 Scheduler Services

The Scheduler Service is a service that automates behind-the-scenes work that is necessary to sustain various enterprise applications and their operations. This automation helps the applications to control unattended background jobs program execution.

You can perform the following operations using Scheduler Services utility:

- **Define Batch** - A Batch contains a group of background tasks that are executed together, on a specific date and time during which the resources are available for batch processing.
- **Define Task** - A batch job is a piece of a program meant to meet specific and business-critical functions. The program is a REST API used in a batch.
- **Schedule Batch** - Batch jobs are scheduled to automate the tasks to be processed on a regular basis but don't necessarily need to occur during the day or have an employee interacted with the system are batch schedule. Jobs that happen on a regular basis are incorporated into batch schedules. You can also execute a Batch instantaneously and schedule batches.
- **Monitor Batch** - Track your batch executions using a Web browser. You can access the real-time feedback on the status of the current encoding job and lists the jobs pending in the batch. You can also **Cancel** or **Restart** the service when required.
- Use **Scheduler Service Dashboard** - The Scheduler Service Dashboard gives the complete status of the Executed Runs, Successful Runs, Failed Runs, Ongoing Runs, Interrupted Runs, and the Upcoming Runs.

4.1.1 User Roles and Functions

The following roles and functions are required to use Scheduler Services, and create and manage Batches and tasks, and also use Scheduler Service Dashboard.

Role Codes

- BATCH_READ
- BATCH_WRITE

- BATCH_ADV
- BATCH_AUTH
- BATCH_OPER
- BATCH_MAINT

Function Codes

- BATCH_ADD
- BATCH_DEL
- BATCH_MOD
- BATCH_VIEW
- BATCH_SCH
- BATCH_SUMM
- BATCH_AUTH
- BATCH_PURGE
- BATCH_MON
- BATCH_EXEC
- BATCH_COPY

4.1.2 Accessing Scheduler Services

Using the Scheduler Service feature, you can create and execute batches and schedules to run various tasks and also monitor them.

To access the Scheduler Service feature, from the left Navigation pane in the Service console, click **Operations and Processes > Scheduler**.

4.1.3 Define Batch

A Batch contains a group of background tasks that are executed together, on a specific date and time during which the resources are available for batch processing.

Batch Groups are a set of batches that are required to be execute together. Batch groups help to process Date and time-based background tasks based on a defined period during which the resources were available for Batch Processing.

To access the **Define Batch** page, from the left Navigation pane in the application console, click **Operations and Processes** > **Scheduler** > **Define Batch**.

The **Scheduler Service Summary Page (Define Batch)** with the list of Batches and Batch Groups is displayed. You can view the following details related to each Batch/ Batch Group.

- **Batch ID** - The unique Alphanumeric Code assigned to a specific Batch.
- **Name** - The unique Batch Name.
- **Description** - The brief description of the Batch.
- **Last Modified** - The last modified By User, Date and Time details.

To search for a specific Batch/Batch Group, enter the keywords in the **Search** Field and click **Search**. You can search based on the Batch/Batch group name, code and description. You can also sort the Batch/Batch group list based on Code, Name, Created Date and Last Modified Date.

You can perform the following operations to manage Batch/Batch Groups, from the **Scheduler Service Summary (Define Batch)** page.

- Create New Batch
- Create New Batch Group
- Edit a Batch
- Edit a Batch Group
- Copy a Batch
- Copy a Batch Group
- Delete a Batch
- Delete a Batch Group

4.1.3.1 Creating a Batch

A Batch contains a group of background tasks that are executed together, on a specific date and time, when the resources are available for batch processing.

Refer to the following steps, to create a batch from the **Scheduler Service Summary (Define Batch)** page.

1. To create a new Batch, click the **Action** and click **Create**.

   The **Create Batch Page** is displayed.

   Enter the following **Batch Details** :

   - **Code** - Enter a Unique Alphanumeric Code for the new Batch.
     The Code name always begins with alphabets and should not contain any space. The maximum limit is 60 characters and should not contain any special characters except **Underscore (_)**.
   - **Batch Name** - Enter a unique name for the new batch.
     The Code name always begins with alphabets and should not contain any space. The maximum limit is 60 characters and should not contain any special characters except **Underscore (_)**.
   - **Batch Description** - The description/details for the batch.
     The description should start with alphabet and should not be more than 250 characters.
   - **Service URL Name/ Service URL** - Select the **Service URL Name** from the drop-down list.
     You can also enter the **Service URL Name** and associated URL is displayed in the **Service URL**. You can also provide the partial URL here and the complete URL in the Task Service URL.

2. After entering the Batch Details, provide the following Batch Parameters.

   From the Batch Parameters pane, click **Add** to add a new Batch Parameter.
   By default, **$FICMISDATE$** and **$BATCHRUNID$** are added as Batch Parameters.

   - **Parameter Name** - A valid parameter name for the new Batch parameter.

- **Parameter Value** - A valid Parameter Value required for Batch execution.

> **Note:**
>
> Enclose the Parameter Value for a Run time with $ symbol. For example, $paramName$.

To delete a Batch parameter, click **Delete** next to to that Parameter details.

3. Enter the following **Header Parameter** details.
   - **Parameter Name** - A valid parameter name for the new header parameter.
   - **Parameter Value** - A valid Parameter Value required for Batch execution.
4. Click **Save**. The new Batch is created and displayed in the **Scheduler Services (Define Batch)** Page.

4.1.3.2 Creating a Batch Group

You can create a new Batch Group in the Define Batch Page and schedule and monitor the Batch Group that you created.

To create a new Batch Group, perform the following steps:

1. To create a new Batch, click the **Action** and click **Create**.

   The **Create Batch Page** is displayed.

   Enter the following **Batch Details** :

   - **Code** - Enter a Unique Alphanumeric Code for the new Batch group.
     The Code name always begins with alphabets and should not contain any space. The maximum limit is 60 characters and should not contain any special characters except **Underscore (_)**.
   - **Batch Name** - Enter a unique name for the new batch group.
     The Code name always begins with alphabets and should not contain any space. The maximum limit is 60 characters and should not contain any special characters except **Underscore (_)**.
   - **Batch Description** - The description/details for the batch group.
     The description should start with alphabet and should not be more than 250 characters.
2. Select **Batch Group** option.
3. Select the Batches to be grouped together for processing, from the drop-down list.
4. Click **Save**.

   The new Batch Group is created and added to the **Scheduler Services (Define Batch)** page.

4.1.3.3 Editing a Batch

The **Edit Batch** option allows you to edit the Batch details such as Batch Description, Service URL Name and Service URL and also add a new Batch Parameter.

Seeded batches cannot be edited.

1. In the **Scheduler Services (Define Batch)** Page, click **Edit** corresponding to the Batch you want to modify.

   The Edit Batch Page is displayed.

2. Modify the required **Batch** details.

   For more information, see Create New Batch.

3. Click **Save**.

   The edited batch is saved and displayed in the **Scheduler Services (Define Batch)** Page.

4.1.3.4 Editing a Batch Group

The Edit Batch Group option allows you to edit the Batch Group details such as Batch Group Name, Added Batches, and Batch Group Description.

To modify a Batch Group, perform the following steps:

1. In the **Scheduler Services (Define Batch)** Page, click **Batch Group** option to list the Batch Groups.
2. Click **Edit** corresponding to the Batch Group you want to modify.
3. Modify the required Batch Group details.

   For more information, see Create New Batch Group section.

4. Click **Save**.

   The edited Batch Group is saved and updated in the**Scheduler Services (Define Batch)**.

4.1.3.5 Copying a Batch

The Copy Batch option allows you to copy a Batch that you want to clone or create instances in the system from the Define Batch Window.

To copy a Batch, perform the following steps:

1. In the **Scheduler Services (Define Batch)** Page, click **Copy** corresponding to the Batch that you want to copy.

   The Copy Batch Page is displayed.

2. Specify the Batch details as you want to clone and copy the existing batch.

   For more information, see Create New Batch section.

3. Click **Save**.

   The copied batch is saved and displayed in the **Scheduler Services (Define Batch)** Page.

4.1.3.6 Copying a Batch Group

The Copy Batch group option allows you to copy a Batch group that you want to clone or create instances in the system from the Define Batch Page.

To copy a Batch Group, perform the following steps:

1. In the **Scheduler Services (Define Batch)** Page, click **Copy** corresponding to the Batch group that you want to copy.

   The Copy Batch group Page is displayed.

2. Specify the Batch group details as you want to clone and copy the existing batch group.

   For more information, see Copy a Batch Group section.

3. Click **Save**.

   The copied batch group is saved and displayed in the **Scheduler Services (Define Batch)** Page.

4.1.3.7 Deleting a Batch

The Delete Batch option allows you to delete a Batch that are no longer required in the system from the Define Batch Page.

Seeded batches cannot be deleted.

To delete a Batch, perform the following steps:

1. From the **Scheduler Services (Define Batch)** Page, click **Delete** corresponding to the Batch you want to delete.
2. Click **OK** to confirm deletion.

> **Note:**
>
> If the batch has any active schedules all the associated schedules of the batch are also deleted, after confirmation.

4.1.3.8 Deleting a Batch Group

The Delete Batch group option allows you to delete a Batch group that are no longer required in the system from the Define Batch page.

Seeded batches cannot be deleted.

To delete a Batch Group, perform the following steps:

1. From the **Scheduler Services (Define Batch)** Page, click **Delete** corresponding to the Batch group you want to delete.
2. Click **OK** to confirm deletion.

> **Note:**
>
> If the batch group has any active schedules all the associated schedules of the batch are also deleted, after confirmation.

4.1.4 Define Tasks

The Define Tasks Page provides the list of tasks associated with a specific Batch Definition. You can create new tasks, and edit or delete existing tasks .

To access the **Define Task** page, from the left Navigation pane in the Service console,

1. From the left menu, click **Operations and Processes**.
2. Select **Define Task**, to view the page.
3. Select Batch/Batch Group from the drop-down list and select the particular batch/batch group.
   The list of tasks associated with the specific batch/batch group is displayed. You can view the following details related to each task.
   - Task ID
   - Name
   - Parent Task
   - Component
   - Created Date
   - Last Modified

To search for a specific task, enter the keywords in the **Search** Field and click **Search**. You can search based on the Task Name, code and description. You can also sort the Task list based on Name Precedence, Component, Created Date and Last Modified Date.

You can perform the following operations to manage a Task, from the **Scheduler Service Summary (Define Task)** page.

- Add a task
- Modify a task
- Define a task precedence
- Delete a task

4.1.4.1 Adding a Task

Adding a new task option allows you to add new tasks to a selected Batch Definition.

To add new task, perform the following steps:

1. In the **Scheduler Service (Define Task)** select the Batch for which you want to add new task from the drop-down list.
2. Click **Actions** in page and click **Add**.

   Add Task page is displayed.
3. Enter the details in the Add Task page:
   - **Task Code** - Enter a Unique Alphanumeric Code for the new Task.
     The Code always begins with alphabets and should not contain any space. The maximum limit is 60 characters and should not contain any special characters except **Underscore (_)**.
   - **Task Name** - Enter a unique name for the new batch.
     The task name always begins with alphabets and should not contain any space. The maximum limit is 60 characters and should not contain any special characters except **Underscore (_)**.
   - **Task Description** - The description/details for the batch.

The description should start with alphabet and should not be more than 250 characters. Words like Select From or Delete From should not be entered in the Description.

- **Task Type** - Select the task type from the drop-down list.
- **Batch Service URL** - Select the **Batch Service URL** from the drop-down list. You can also enter the **Task Service URL** and associated URL is displayed in the **Service URL**. You can also provide the partial URL here and the complete URL in the Task Service URL.
- **Task Service URL** - Enter task service URL if it is different from Batch Service URL.

4. From the Task Parameters Pane, by default, all Batch Level Parameters are added and enabled as task parameters.
   a. Enter the Parameter name in the **Param Name** field.
   b. Enter the Parameter value in the **Param Value** field.

   You can delete a parameter by clicking corresponding to the parameter.
5. Click **Save**.

4.1.4.2 Modifying a Task

Modifying Task option allows you to modify the details of existing tasks of a Batch Definition such as Task Description, Task Type, Batch Service URL and Task Service URL.

You can also add a new task parameter and enable or disable already existing task parameters.

To modify a Task, perform the following steps:

1. From the **Define Task** Page, select the Batch to modify the task details, from the drop-down list.
2. Click **Edit** corresponding to the Task to be modified.

   The **Edit Task** Page is displayed.
3. Modify the required Task Details.

   For more information, see Add a task Section.
4. Click **Save**.

4.1.4.3 Define Task Precedence

Task Precedence indicates the execution-flow of a Batch. Task Precedence Value helps to determine the order in which the specific Tasks of a Batch are executed.

For example, consider a Batch consisting of four tasks. The first three tasks does not have a precedence defined and hence will be executed simultaneously, during the Batch Execution. However, Task 4 has a precedence value as Task 1 which indicates that, Task 4 is executed only after Task 1 has been successfully executed.

You can set Task precedence between Tasks or define to run a Task after a set of other tasks. However, multiple tasks can be executed simultaneously, and cyclical execution of tasks is not permitted. If the precedence for a Task is not set, the Task is executed immediately on Batch Execution.

To define the task precedence in the Define Task Page, perform the following steps:

1. Click **Add or Remove Precedence** corresponding to the task for which you want to add precedence task.
   The Task Precedence Mapping Window is displayed.

   > **Note:**
   >
   > The **Task Precedence** option is disabled if a batch has only one task associated.

   a. Select the batch that you want to execute before the current task, from the Available Tasks pane and click **Play**.
   b. To select all the listed batches, click **Move** (Forward arrow).
   c. To remove a batch, select the task from the Selected Tasks Pane and click **Remove** (Backward arrow).
   d. To remove all the selected batches, click **Remove All** (double backward arrow).
2. Click **Save** to update Task Precedence in the batches.
3. Click **Preview** to view the Precedence information.

4.1.4.4 Deleting a Task

You can remove a task from a Batch Definition which are no longer required in the system by deleting it from the Define Task page.

To delete a Task, perform the following steps:

1. From the Define Task Page, select the Batch from the drop-down list.
2. Click **Delete** corresponding to the Task you want to delete.
3. Click **OK** in the confirmation dialog to confirm deletion.

4.1.5 Schedule Batch

The Schedule Batch Page facilitates you to run, schedule, re-start, and re-run the batches in the Scheduler Service. After you upload the data in the required format into the Object Storage, you must load the data into the system using the Scheduler Service. You can schedule them to run in a required pattern and view the Run Time Status of the scheduled services using the Monitor Batch Feature.

To access the **Schedule Batch** page, from the left Navigation pane in the Service console,

1. From the left menu, click **Operations and Processes**.
2. Select **Schedule Batch**, to view the page.
3. Select Batch/Batch Group from the drop-down list and select the particular batch/batch group.
   The list of tasks associated with the specific batch/batch group is displayed. You can view the following details related to each task.

You can perform the following operation for the batch:

- Execute a Batch

- Schedule a Batch - Daily, Weekly, Monthly, and Using Cron expression.
- Re-start a Batch
- Re-run a Batch
- Edit Dynamic Parameters
- Task Definition of a Batch

4.1.5.1 Task Definitions of a Batch

You can modify the Task Definition state in the Batch Execution Page to exclude or hold the defined task in a Batch from execution. The excluded tasks are therefore assumed to have completed execution and get excluded during the Batch Run.

While executing or scheduling a Batch from the Schedule Batch Page, you can:

- Exclude a task or include the excluded task.
- Hold a task or release the held task.

4.1.5.2 Execute a Batch and Batch Group

The Execute Batch option allows you to run a batch instantaneously.

To execute a Batch/Batch Group, perform the following steps:

1. In the **Schedule Batch** page, select Batch or Bath Group to execute, from the drop-down list.
2. Select the Batch /Batch Group Name from the drop-down list. For example, AMLDataLoad.
3. Click **Execute**.

   The **Execution Schedule** Page is displayed.
4. Click **Exclude Tasks**, to add/remove tasks from the execution list..
5. Click **Hold Tasks**, to pause/release tasks during execution..
6. Click **Edit Dynamic Parameters**, to modify the dynamic parameters..
7. Click **Execute**.

   The Batch is executed, and the associated unique execution ID is displayed.
8. Schedule a Batch/Batch Group.

   You can schedule a Batch/Batch Group to run just for Daily, Weekly, and Monthly. for scheduling the batches. You can also have a user defined schedule to schedule and run a batch, Using Cron expression.

4.1.5.3 Schedule Once

To schedule a Batch /Batch Group to run once, perform the following steps:

1. Click **Schedule Batch** from the Header panel.

   The Schedule Batch Page is displayed.
2. In the **Schedule Batch** Page, click **Schedule Once**.
3. Select **Batch or Bath Group** to execute, from the drop-down list.

4. Select the **Batch or Batch Group** Name you want to schedule for once from the drop-down list.
5. Enter a **Schedule Name**.
6. Select the **Start Date** on which you want to run the Batch.
7. Click **Run Time** and select the time at which you want to run the Batch.
8. Click **Schedule**.

4.1.5.4 Daily Batch Scheduling

To schedule a Batch to run daily, perform the following steps:

1. Click **Schedule Batch** from the Header panel. The Schedule Batch Page is displayed.
2. In the Schedule Batch Page, click **Daily** .
3. Select the **Batch /Batch Group Name**.
4. Select the **Batch or Batch Name** you want to schedule daily from the dro-down list.
5. Enter a **Schedule Name**.
6. Select the **Start Date** from which you want to run the Batch.
7. Select the **End Date** till which you want to run the Batch.
8. Select the **Time** at which you want to run the Batch daily.
9. Click **Schedule**.

4.1.5.5 Weekly Batch Scheduling

To schedule a Batch to run weekly, perform the following steps:

1. Click **Schedule Batch** from the Header panel.

   The Schedule Batch Page is displayed.
2. In the Schedule Batch Page, click **Weekly**.
3. Select the Batch /Batch Group Name.
4. Select the **Batch or Batch Name** you want to schedule daily from the drop-down menu.
5. Enter a **Schedule Name**.
6. Select the **Start Date** from which you want to run the Batch.
7. Select the **End Date** till which you want to run the Batch.
8. Select the **Time** at which you want to run the Batch every week.
9. Select the days on a week you want to run the Batch from the **Select Days** of the Week multi-select drop down menu.
10. Click **Schedule**.

4.1.5.6 Monthly Batch Scheduling

To schedule a Batch to run weekly, perform the following steps:

1. In the **Schedule Batch** Page, click **Monthly**.
2. Select the **Batch /Batch Group Name**.

3. Select the **Batch or Batch Name** you want to schedule daily from the drop-down list.
4. Enter a **Schedule Name**.
5. Select the **Start Date** from which you want to run the Batch.
6. Select the **End Date** till which you want to run the Batch.
7. Select the **Time** at which you want to run the Batch every Month.
8. Select the months in a year you want to run the Batch from the **Select Months of the Year** multi-select drop-down list.
9. Select the day of the month that you want to run the Batch from the Select Day of the Month drop down menu.
10. Click **Schedule**.

4.1.5.7 Schedule Cron Expression

To run a Batch in a user-defined schedule, you can have custom schedule with the help of Cron Expression.

A Cron Expression is a string comprised of six or seven fields separated by white space. Fields can contain any of the allowed values, along with various combinations of the allowed special characters for that field. For more information, click the icon next to the Cron Expression field.

To schedule a Batch based on Cron Expression, perform the following steps:

1. In the Schedule Batch Page, click **Cron Expression**.
2. Select the **Batch /Batch Group**.
3. Select the Batch or Batch Group Name you want to schedule from the Select drop down menu.
4. Enter a **Schedule Name**.
5. Enter the **Cron Expression** for your schedule.

   For more information about the Cron Expression, click Information icon next to the Cron Expression field.
6. Click **Schedule**.

4.1.5.8 Re-start a Batch

You can re-start a Batch which has not been executed successfully or which has been explicitly interrupted, or cancelled, or put on hold during the execution process.

By re-starting a Batch, you can continue Batch execution directly from the point of interruption or failure and complete executing the remaining tasks.

To re-start a batch, perform the following steps:

1. Click **Schedule Batch** from the Header panel.

   The Schedule Page is displayed.
2. From the **Schedule** Page, select Re-start tab.
3. Select **Batch /Batch Group**.

4. Select the **Batch or Batch Name** you want to schedule daily from the drop-down list.
5. Select the **Batch Run ID**.
6. Click **Re-start**.

4.1.5.9 Re-run a Batch

You can re-run a Batch which has previously been executed. Re-run Batch facilitates you to run the Batch irrespective of the previous execution state.

A new Batch Run ID is generated during the Re-run process and the Batch is executed as similar to the new Batch Run.

To re-run a batch, perform the following steps:

1. Click **Schedule Batch** from the Header panel.

   The **Schedule Batch** Page is displayed.
2. In the **Schedule Batch** Page, select **Re-run** tab.
3. Select **Batch /Batch Group**.
4. Select the **Batch or Batch group Name** you want to re-run from the Select Name drop down menu.
5. Select the **Batch Run ID**.
6. Click **Re-run**.

4.1.5.10 Edit Dynamic Parameters

Dynamic Parameters facilitate you to modify the dynamic parameters for the batch.

You can change the Param Value from the Edit Dynamic Params Page and save the changes to the Batch. The Edit Dynamic Parameters option is available in all the tab in the Schedule Batch Page.

To edit the dynamic parameters for a batch, perform the following steps:

1. In the **Schedule Batch Page**, click **Edit Dynamic Parameters**.
   The **Edit Dynamic Params** Page is displayed.
2. In the **Edit Dynamic Params** Page, modify the values as required.
3. Click **Save**. The modified parameters are applied to the Batch.

4.1.6 Monitor Batch

The Monitor Batch enables you to view the status of executed Batch along with the tasks details. You can track the issues if any, on regular intervals and ensure smoother Batch Execution. A visual representation as well as tabular view of the status of each Tasks in the Batch is available.

To monitor a batch, perform the following steps:

1. Click **Monitor Batch** from the Header panel.
   The **Monitor Batch Page** is displayed.
2. Select the **Batch/Batch Group** from the drop-down list and then select the **Batch Run ID**.

3. Click **Start Monitor**.
   The results are displayed in **Visualization** and **List View** tabs. Details of these tabs are as follows:

   The **Visualization** tab displays the details in the form of a chart represented with the following details:

   - **Batch Status**: Displays the batch status, the different batch status are NOT-STARTED, ON-GOING, SUCCESSFUL, FAILED, INTERRUPTED, EXCLUDED, HELD, and UNDEFINED.
   - **Batch Start Time**: Displays the Batch Start Time details.
   - **Batch End Time**: Displays the Batch End Time details.
   - **Task Details**: Mouse-over the task to display its status and details.

   The **List View** tab displays the details in a tabular form with the following details:

   - **Batch Status**: Displays the batch status, the different Batch Status are NOT-STARTED, ON-GOING, SUCCESSFUL, FAILED, INTERRUPTED, EXCLUDED, HELD, and UNDEFINED.
   - **Batch Start Time**: Displays the Batch Start Time details.
   - **Batch End Time**: Displays the Batch End Time details.
   - **Task Details**: Mouse-over the task to display its status and details.
   - **More Information**: The message returned by the Rest Service.

   Select **Stop Monitor**, to stop monitoring. You can also specify the Start and Stop Monitor options along with refresh interval in the Refresh every second and minute fields.

   You can also setup auto refresh to automatically update the status based on the set **Refresh Interval** and **Duration**. At any point, click **Stop Monitor** to stop the auto refresh.

   - By default, the refresh interval is set to **5 seconds** and duration is set to **5 minutes**.
   - The refresh interval ranges between 5 to 60 seconds.
   - The duration ranges between 5 to 180 seconds.

4. To restart the Batch /Batch Group, select **Restart**.
5. To rerun the Batch/Batch Group, select **Rerun**.
6. To interrupt the Batch /Batch Group, select **Stop**.
7. In the Log Viewer pop-up the log information is displayed. You can click the **Download** icon to download the log or click the **Close** icon to close the log information.

4.1.7 Scheduler Service Dashboard

You can view and monitor the complete status of the Executed Runs, Successful Runs, Failed Runs, Ongoing Runs, Interrupted Runs, and the Upcoming Runs, from the Scheduler Service Dashboard.

To access the **Scheduler Service Dashboard** page, from the left Navigation pane in the Service console, click **Operations and Processes** > **Scheduler** > **Dashboard**.

The Scheduler Service Dashboard with the following details is displayed.

- The Executed Runs, Successful Runs, Failed Runs, Ongoing Runs, Interrupted Runs, and Upcoming Runs tabs. You can click the tabs to view the details of the Batches based on their status. For example, click **Ongoing Runs** to view the details of the batches that are currently running.
- The Batches that were executed within the last 7 or 30 days contain details such as Batch Name, Batch Run ID, and Run Time. Click 30 days to view the batches that were executed within the last 30 days. You can click the icon corresponding to a Batch to monitor it.
- The Batch Execution Summary Pane displays the count of total batches executed that were executed within the last 7 days, 30 days, and 120 days. You can also view the separate count of successful batches, failed batches, interrupted batches, on-going batches, and the batches which are yet to start, by hovering your mouse the batches.

5
Reports & Analytics

This section covers the following topics:

- Oracle Analytics is a scalable and secure Oracle Cloud Service that provides a full set of capabilities to explore and perform collaborative analytics for you, your workgroup, and your enterprise. For more information, see Asset Liability Management Cloud Reports & Analytics.

5.1 Asset Liability Management Cloud Reports

Asset Liability Management Cloud Service (ALMCS) Analytics User Guide describes the features and functions of ALM's Analytics is intended for the use of Administrators, Analysts, Reporting Analysts, and Administrators.

Asset Liability Management (ALM) Could Service utilizes the power of Oracle Analytics to generate the Business Intelligence Reports.

Oracle Analytics is a scalable and secure Oracle Cloud Service that provides a full set of capabilities to explore and perform collaborative analytics for you, your workgroup, and your enterprise.

With Oracle Analytics Cloud, you also get flexible Service Management capabilities, including fast setup, easy scaling and patching, and automated lifecycle management.

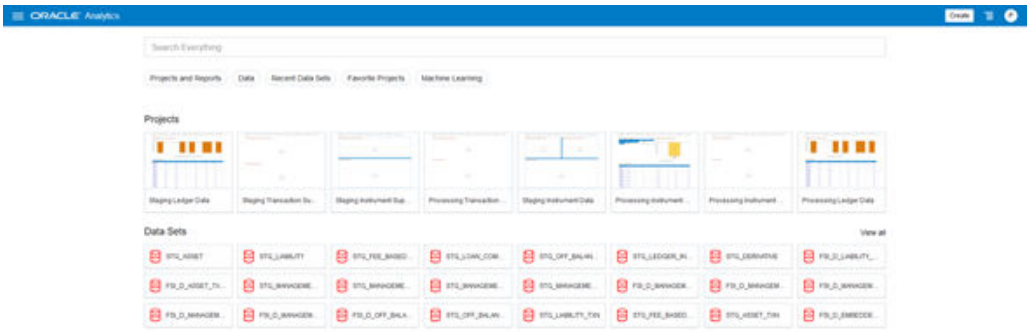
For more information, see the Oracle Analytics Cloud documentation.

5.1.1 Access Business Intelligence (BI) Reports

This section describes the steps to access the Business Intelligence (BI) Reports.

To access the Oracle Financial Services Profitability Management Cloud Service BI Reports, from the LHS Menu, select **Analytics**, and then select **Home Page**.

Figure 5-1 Analytics Home Page



5.1.2 Preparing Data using SQL Query Browser

Data Sets are self-service Data Models that you build specifically for your Data Visualization and Analysis requirements.

A Data Set can be based on one Table, Spreadsheet, or a File. Alternatively, a Data Set can be a self-service Data Model that contains multiple Tables with relationships defined between the Tables.

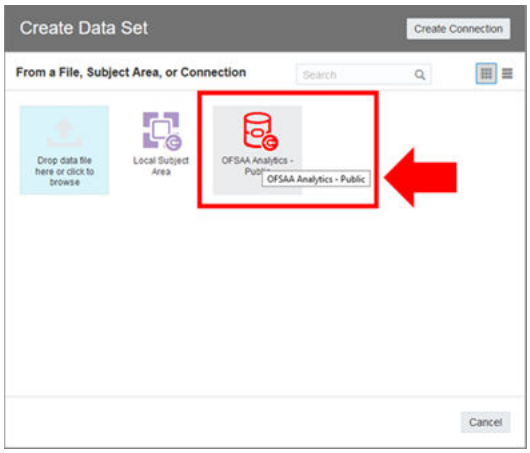
A Data Set contains Data Source Connection Information, Tables, the Columns you specify, and the Data Enrichments, and Transformations that you apply.

For more information, see Visualizing Data and Building Reports in Oracle Analytics Cloud.

To access the SQL Query Browser and prepare Data, follow these steps:

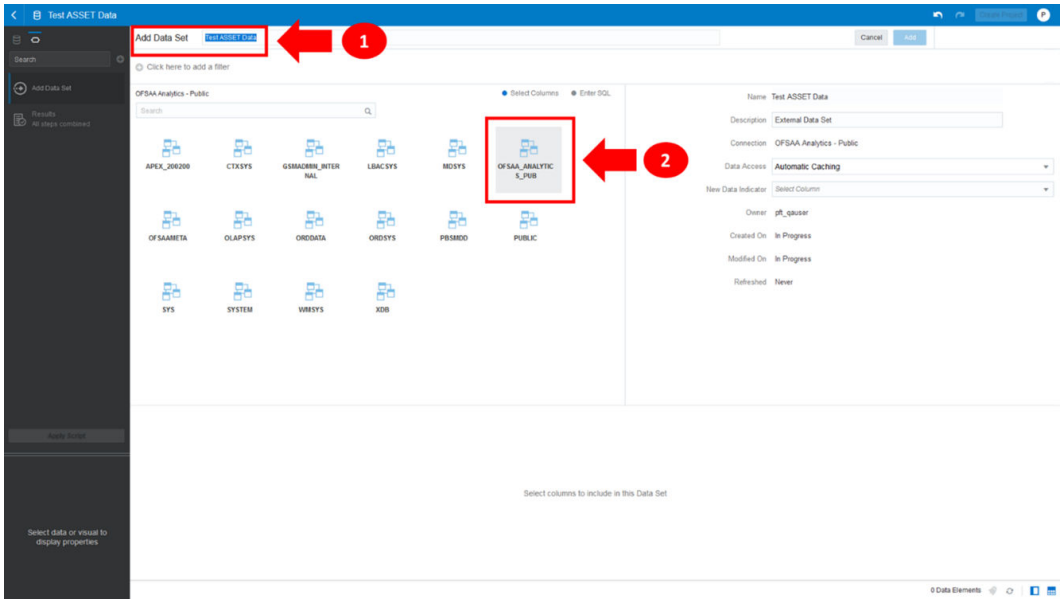
1. From the LHS Menu, select Analytics, and then select SQL Query Browser. The SQL Query Browser allows you to use an existing Database Connector named OFSAA Analytics – Public to interact with the underlying available Database Structures.

Figure 5-2 Create Data Set Screen



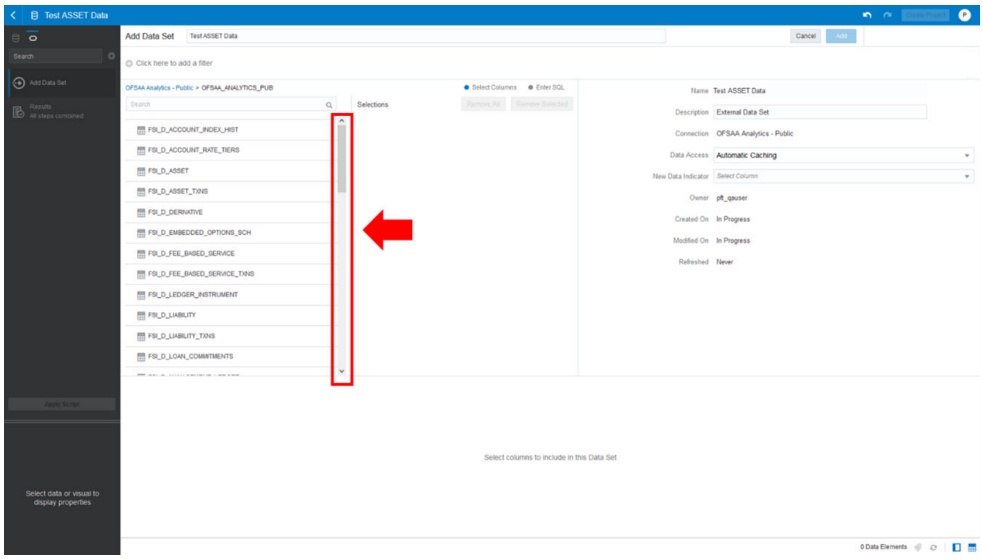
2. After selecting the Database Connector, you must select the Database Schema named OFSAA_ANALYTICS_PUB to proceed to the next step of Database Object Selection.

Figure 5-3 Add Data Set



3. Provide a meaningful name to the Data Set, which will be generated from this process and be used for the SQL Query Analysis.
4. You can search for a Database Object from the available options. You can either scroll down or search the Database Objects displayed in alphabetical order.

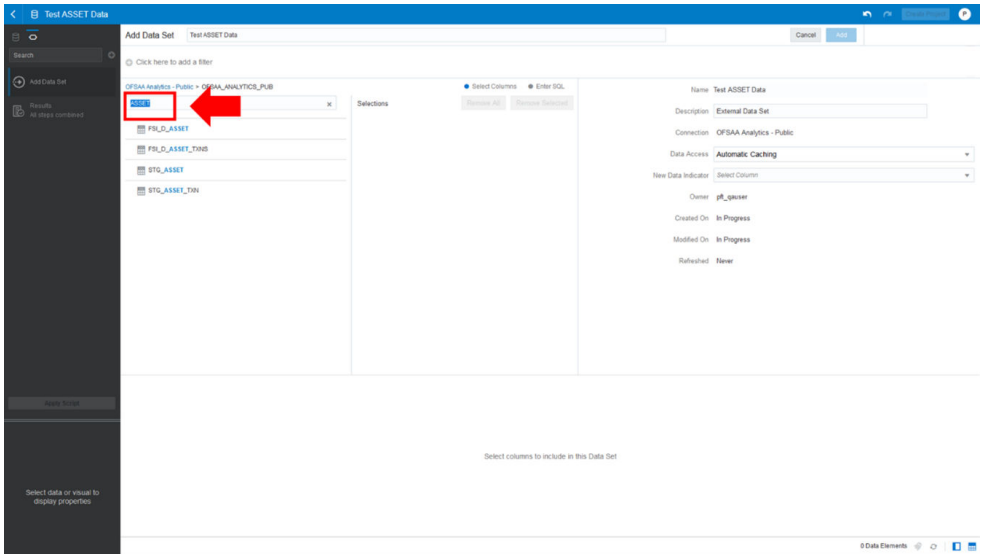
Figure 5-4 Add Data Set – Search from the List



Or

Type the Database Object Name to filter the list with Description.

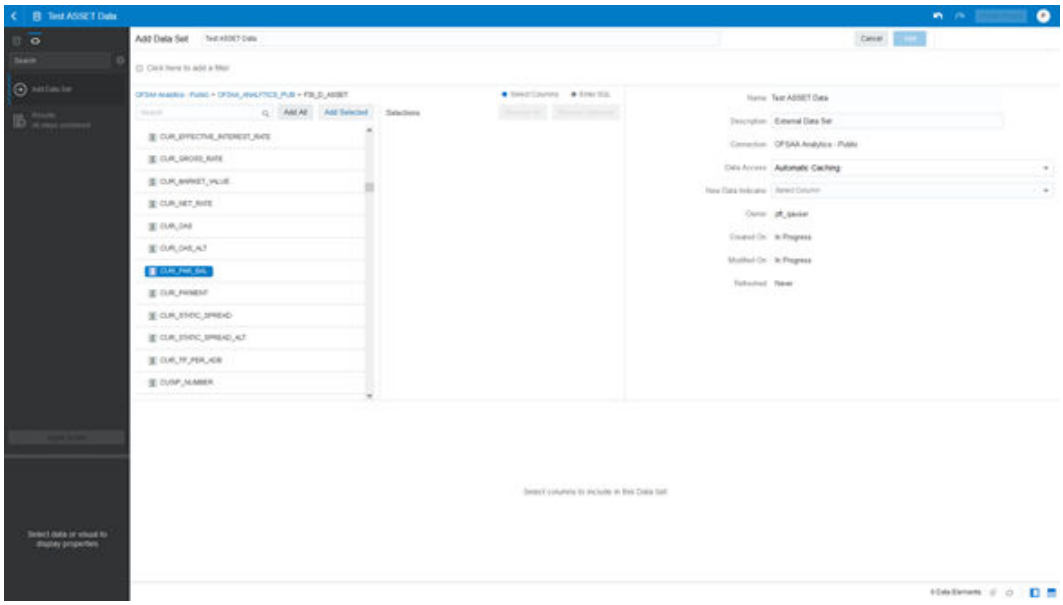
Figure 5-5 Add Data Set – Search by Name



After you select the Object that want, you can proceed to the next step.

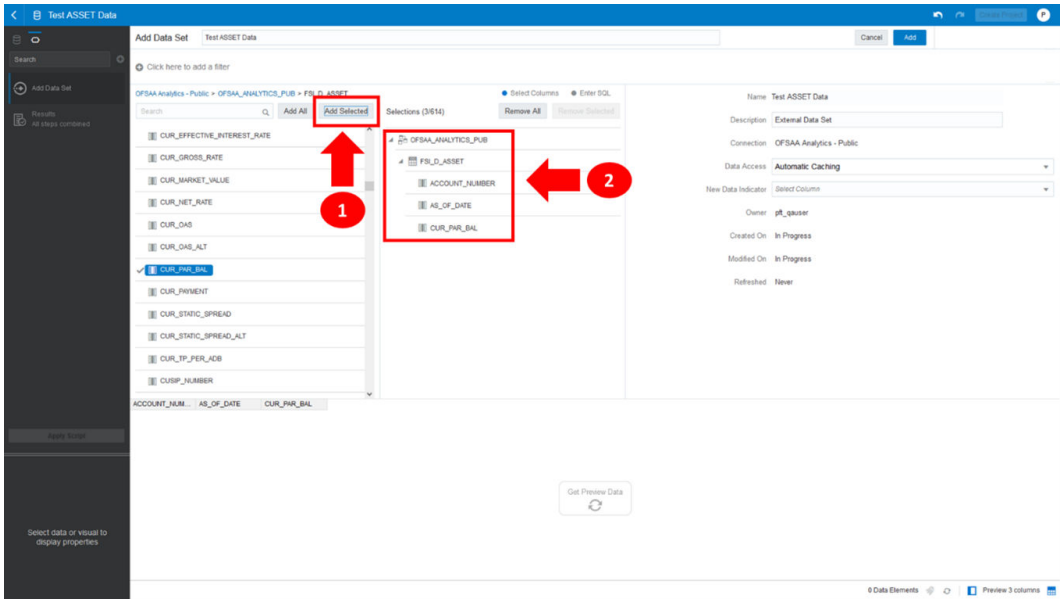
5. You search the Columns that are available for the selected Database Object by scrolling.

Figure 5-6 Add Data Set – Search Columns



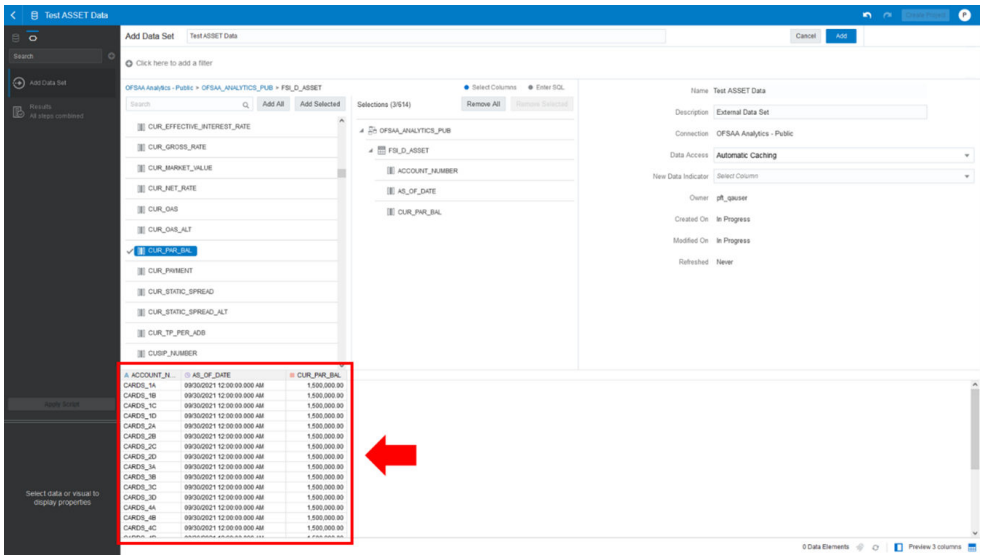
6. Add the Database Object Column as required.

Figure 5-7 Add Data Set – Adding the Database Object Column



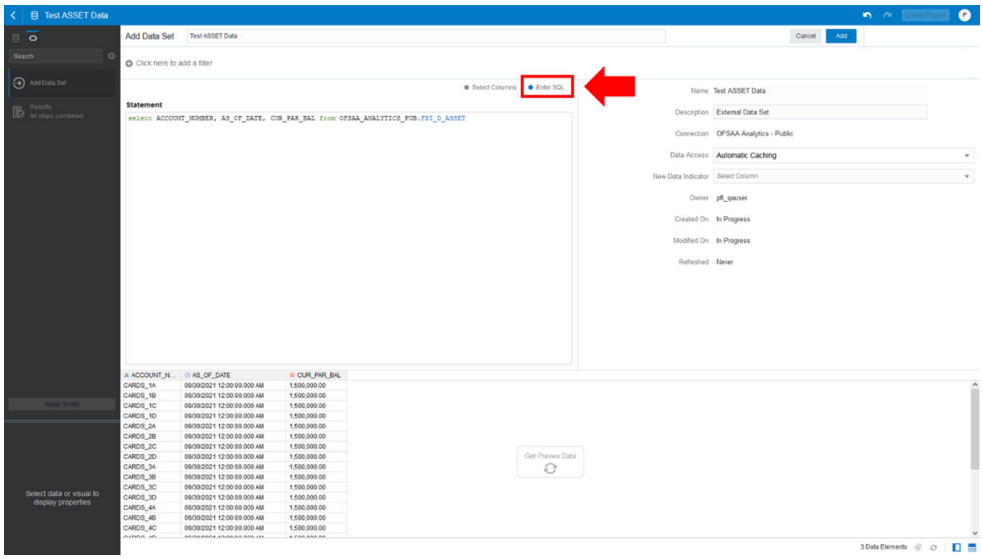
7. Click Get Preview Data to display the retrieved Data Results.

Figure 5-8 Data Results



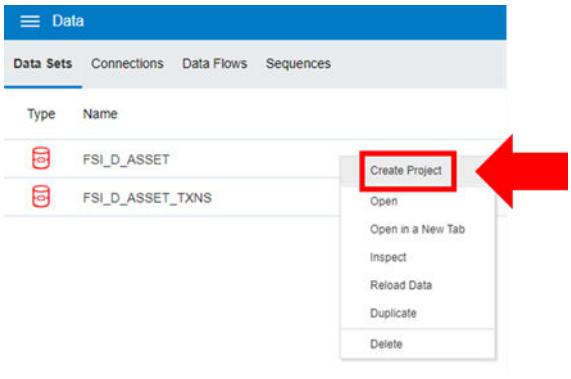
8. In addition, you can switch to the Enter SQL Pane Editor. You can change the auto-generated SQL Query at any time and click Get Preview Data to retrieve the results based on the modified SQL Query.

Figure 5-9 Data Results based on modified SQL Query



9. Click **Add** to save the SQL Data.
10. Click **Data** on the LHS Menu and click **Data Sets** to display the available Data Sets for usage.
11. Right-click on the Data Set name to display the options as shown:

Figure 5-10 Data Set Options



12. In the menu that is displayed, click **Create Project**.

5.1.3 Raw Data Analysis

To access the Raw Data Analysis Screen, from the LHS Menu, select Analytics, and then select Raw Data Analysis.

The following table lists the Raw Data Analysis Reports. You can select any report that you want.

Table 5-1 Raw Data Analysis Reports

Report Name	Scope	Table Layer	Physical Table List	Logical Table List	Report Canvas Name
Staging Instrument Data	Instrument	STG Staging	STG_ASSET STG_LIABILITY STG_DERIVATIVE STG_FEE_BASED_SERVICE STG_LOAN_COMMITMENTS STG_OFF_BALANCE_SHEET STG_LEDGER_INSTRUMENT	Stage Asset Instruments Stage Liability Instruments Stage Derivative Contracts Stage Fee Based and Other Services Stage Loan Commitments Stage Off Balance Sheet Contracts Stage Ledger Instrument	Assets Liabilities Derivative Contracts Fee Based Services Loan Commitments Off Balance Sheet Items Ledger - Instruments

Table 5-1 (Cont.) Raw Data Analysis Reports

Report Name	Scope	Table Layer	Physical Table List	Logical Table List	Report Canvas Name
Staging Instrument Supplementary Data	Instrument Supplementary	STG Staging	STG_ACCOUNT_INDEX_HIST STG_ACCOUNT_RATE_TIERS STG_EMBEDDED_OPTIONS_SCH STG_PAYMENT_SCHEDULE	Stage Account Index History Stage Account Rate Tiers Stage Embedded Options Schedule Stage Payment Schedule	Account Index History Account Rate Tiers Embedded Options Schedule Payment Schedule
Staging Ledger Data	Ledger	STG Staging	STG_MANAGEMENT_LEDGER STG_MANAGEMENT_LEDGER_01 STG_MANAGEMENT_LEDGER_02 STG_MANAGEMENT_LEDGER_03 STG_MANAGEMENT_LEDGER_04 STG_MANAGEMENT_LEDGER_05	Stage Management Ledger Stage Placeholder Management Ledger 01 Stage Placeholder Management Ledger 02 Stage Placeholder Management Ledger 03 Stage Placeholder Management Ledger 04 Stage Placeholder Management Ledger 05	Management Ledger Management Ledger 01 Management Ledger 02 Management Ledger 03 Management Ledger 04 Management Ledger 05
Staging Transaction Summary Data	Transaction Summary	STG Staging	STG_ASSET_TXN STG_LIABILITY_TXN STG_FEE_BASED_SERVICE_TXN STG_OFF_BALANCE_SHEET_TXN	Stage Asset Transaction Summary Stage Liability Transaction Summary Stage Fee Based and Other Services Transaction Summary Stage Off Balance Sheet Transaction Summary	Assets Transaction Summary Liabilities Transaction Summary Fee Based Services Transaction Summary Off Balance Sheet Transaction Summary

Table 5-1 (Cont.) Raw Data Analysis Reports

Report Name	Scope	Table Layer	Physical Table List	Logical Table List	Report Canvas Name
Processing Instrument Data	Instrument	FSI Processing	FSI_D_ASSET FSI_D_LIABILITY FSI_D_DERIVATIVE FSI_D_FEE_BASED_SERVICE FSI_D_LOAN_COMMITMENTS FSI_D_OFF_BALANCE_SHEET FSI_D_LEDGER_INSTRUMENT	Asset Instruments Liability Instruments Derivative Contracts Fee Based and Other Services Loan Commitments Off Balance Sheet Contracts Ledger Instrument	Assets Liabilities Derivative Contracts Fee Based Services Loan Commitments Off Balance Sheet Items Ledger Instruments
Processing Instrument Supplementary Data	Instrument Supplementary	FSI Processing	FSI_D_ACCOUNT_INDEX_HIST FSI_D_ACCOUNT_RATE_TIERS FSI_D_EMBEDDED_OPTIONS_SCH FSI_D_PAYMENT_SCHEDULE	Account Index History Account Rate Tiers Embedded Options Schedule Payment Schedule	Account Index History Account Rate Tiers Embedded Options Schedule Payment Schedule
Processing Ledger Data	Ledger	FSI Processing	FSI_D_MANAGEMENT_LEDGER FSI_D_MANAGEMENT_LEDGER_01 FSI_D_MANAGEMENT_LEDGER_02 FSI_D_MANAGEMENT_LEDGER_03 FSI_D_MANAGEMENT_LEDGER_04 FSI_D_MANAGEMENT_LEDGER_05	Management Ledger Placeholder Management Ledger 01 Placeholder Management Ledger 02 Placeholder Management Ledger 03 Placeholder Management Ledger 04 Placeholder Management Ledger 05	Management Ledger Management Ledger 01 Management Ledger 02 Management Ledger 03 Management Ledger 04 Management Ledger 05

Table 5-1 (Cont.) Raw Data Analysis Reports

Report Name	Scope	Table Layer	Physical Table List	Logical Table List	Report Canvas Name
Processing Transaction Summary Data	Transaction Summary	FSI Processing	FSI_D_ASSET_TXNS FSI_D_LIABILITY_TXNS FSI_D_FEE_BASED_SERVICE_TXNS FSI_D_OFF_BALANCE_SHEET_TXNS	Asset Transaction Summary Liability Transaction Summary Fee Based and Other Services Transaction Summary Off Balance Sheet Transaction Summary	Assets Transaction Summary Liabilities Transaction Summary Fee Based Services Transaction Summary Off Balance Sheet Transaction Summary

5.1.3.1 Staging Instrument Data

You can use this report to perform the analysis on the Staging Area Tables related to Instrument Data. The report contains specifically the following Staging Database Objects:

Table 5-2 Staging Instrument Data Reports

Report Name	Scope	Table Layer	Physical Table List	Logical Table List	Report Canvas Name
Staging Instrument Data	Instrument	STG-Staging	STG_ASSET STG_LIABILITY STG_DERIVATIVE STG_FEE_BASED_SERVICE STG_LOAN_COMMITMENTS STG_OFF_BALANCE_SHEET STG_LEDGER_INSTRUMENT	Stage Asset Instruments Stage Liability Instruments Stage Derivative Contracts Stage Fee Based and Other Services Stage Loan Commitments Stage Off Balance Sheet Contracts Stage Ledger Instrument	Assets Liabilities Derivative Contracts Fee Based Services Loan Commitments Off Balance Sheet Items Ledger - Instruments

5.1.3.1.1 Assets

The Assets Report provides the Analysis Capability on the Stage Asset Instrument Table.

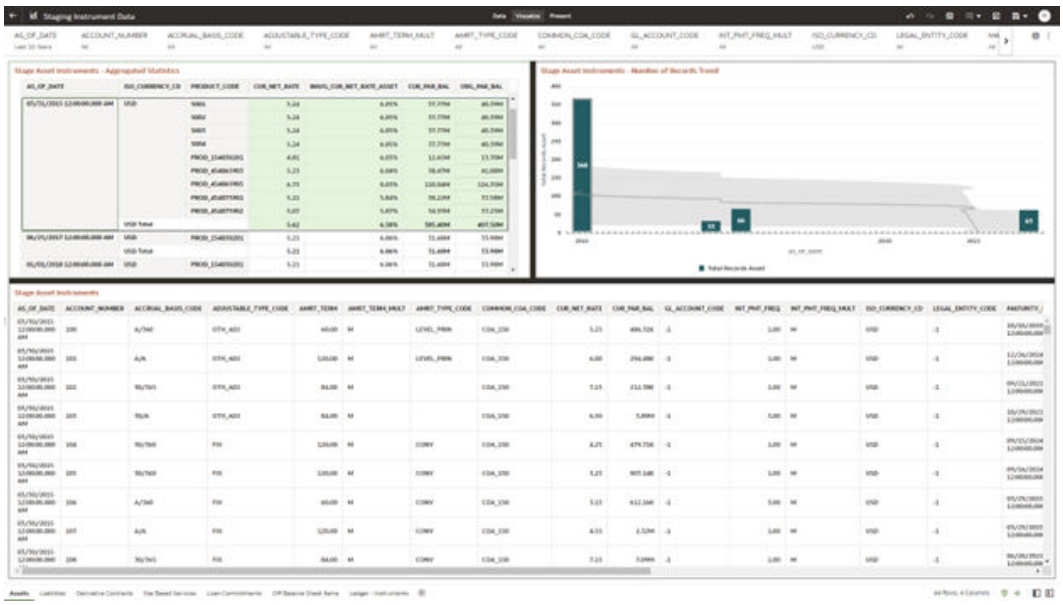
You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Asset Instruments - Aggregated Statistics
  Aggregation for CUR_PAR_BAL (sum), ORG_PAR_BAL (sum) and CUR_NET_RATE (avg) by AS_OF_DATE, ISO_CURRENCY_CD and PRODUCT_CODE.

  In addition, for CUR_NET_RATE, the Additional Balance Weighted Rate, WAVG_CUR_NET_RATE_ASSET, is calculated as the Weighted AVG by CUR_PAR_BAL.
- Stage Asset Instruments - Number of Records Trend
  Total Records Asset aggregated by AS_OF_DATE.
- Stage Asset Instruments
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-11 Staging Instrument Data - Assets



5.1.3.1.2 Liabilities

The Liabilities Report provides the Analysis Capability on the Stage Liability Instrument Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

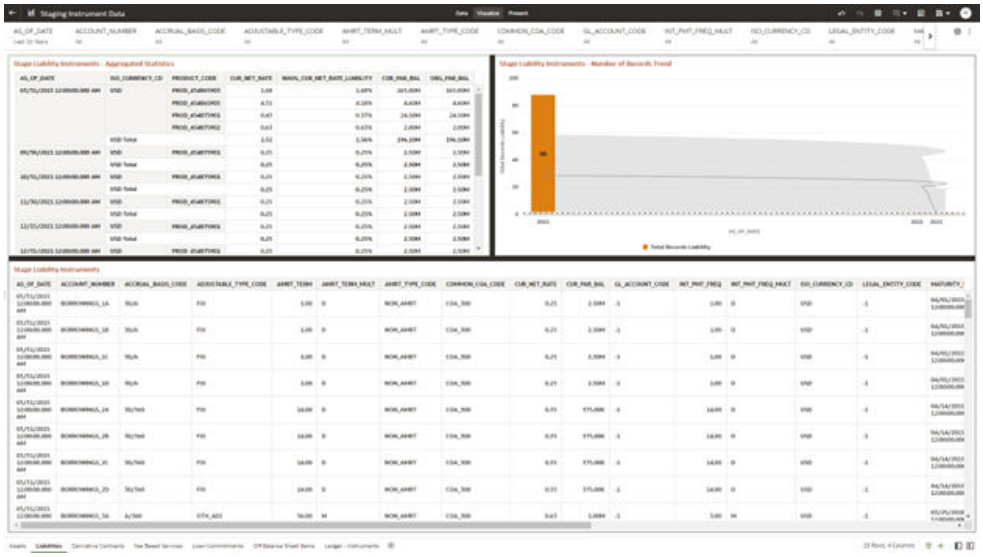
The report displays the underlying data according to the following Charts' logic:

- Stage Liability Instruments - Aggregated Statistics
  Aggregation for CUR_PAR_BAL (sum), ORG_PAR_BAL (sum) and CUR_NET_RATE (avg) by AS_OF_DATE, ISO_CURRENCY_CD and PRODUCT_CODE.

In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_LIABILITY, is calculated as the Weighted AVG by CUR_PAR_BAL.

- Stage Liability Instruments - Number of Records Trend
  Total Records Liability aggregated by AS_OF_DATE.
- Stage Liability Instruments
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-12 Staging Instrument Data - Liabilities



5.1.3.1.3 Derivative Contracts

The Derivative Contracts Report provides the Analysis Capability on the Stage Derivative Contracts Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

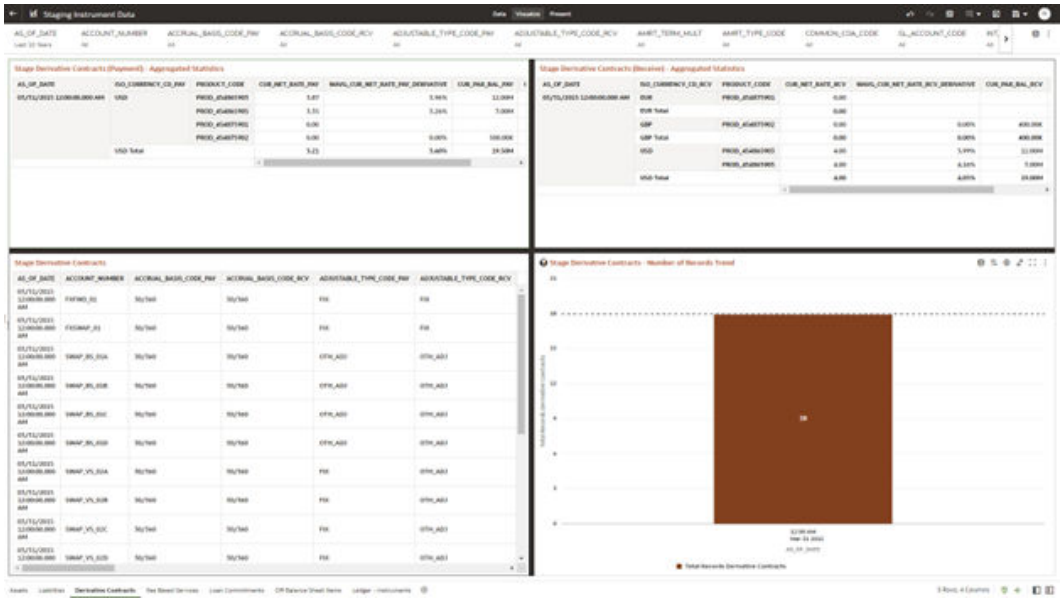
- Stage Derivative Contracts (Payment) - Aggregated Statistics
  Aggregation for CUR_PAR_BAL_PAY (sum), ORG_PAR_BAL_PAY (sum) and CUR_NET_RATE_PAY (avg) by AS_OF_DATE, ISO_CURRENCY_CD_PAY and PRODUCT_CODE.

  In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_PAY_DERIVATIVE, is calculated as the Weighted AVG by CUR_PAR_BAL_PAY.
- Stage Derivative Contracts (Receive) - Aggregated Statistics
  Aggregation for CUR_PAR_BAL_RCV (sum), ORG_PAR_BAL_RCV (sum) and CUR_NET_RATE_RCV (avg) by AS_OF_DATE, ISO_CURRENCY_CD_RCV and PRODUCT_CODE.

  In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_RCV_DERIVATIVE, is calculated as the Weighted AVG by CUR_PAR_BAL_RCV.

- Stage Derivative Contracts - Number of Records Trend
  Total Records Derivative Contracts aggregated by AS_OF_DATE.
- Stage Derivative Contracts
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-13 Staging Instrument Data – Derivative Contracts



5.1.3.1.4 Fee Based Services

The Fee Based Services Report provides the Analysis Capability on the Stage Fee Based and Other Services Table.

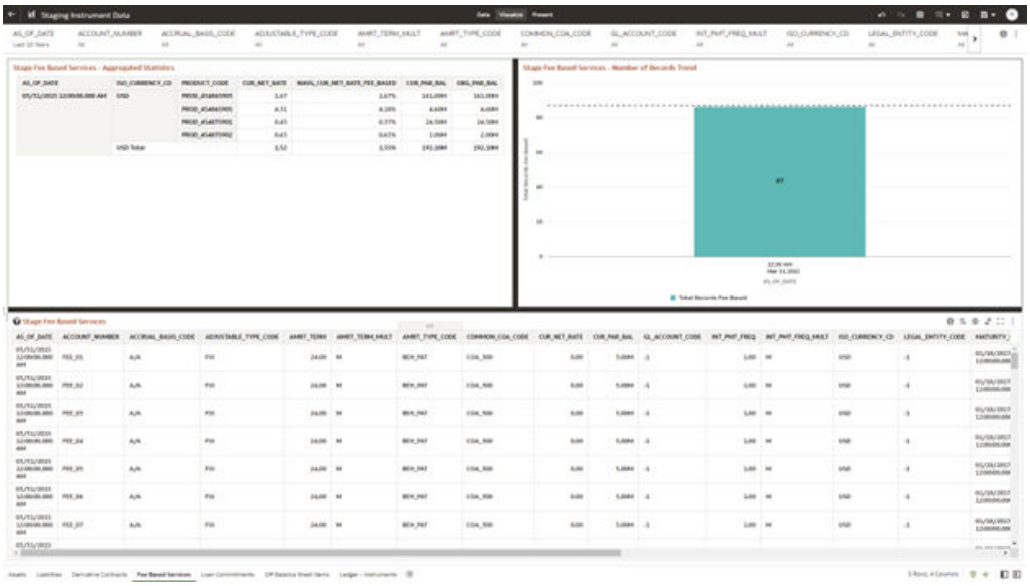
You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Fee Based Services - Aggregated Statistics
  Aggregation for CUR_PAR_BAL (sum), ORG_PAR_BAL (sum) and CUR_NET_RATE (avg) by AS_OF_DATE, ISO_CURRENCY_CD and PRODUCT_CODE.

  In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_FEE_BASED, is calculated as the Weighted AVG by CUR_PAR_BAL.
- Stage Fee Based Services - Number of Records Trend
  Total Records Fee Based aggregated by AS_OF_DATE.
- Stage Fee Based Services
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-14 Staging Instrument Data – Fee Based Services



5.1.3.1.5 Loan Commitments

The Loan Commitments Report provides the Analysis Capability on the Stage Loan Commitments Table.

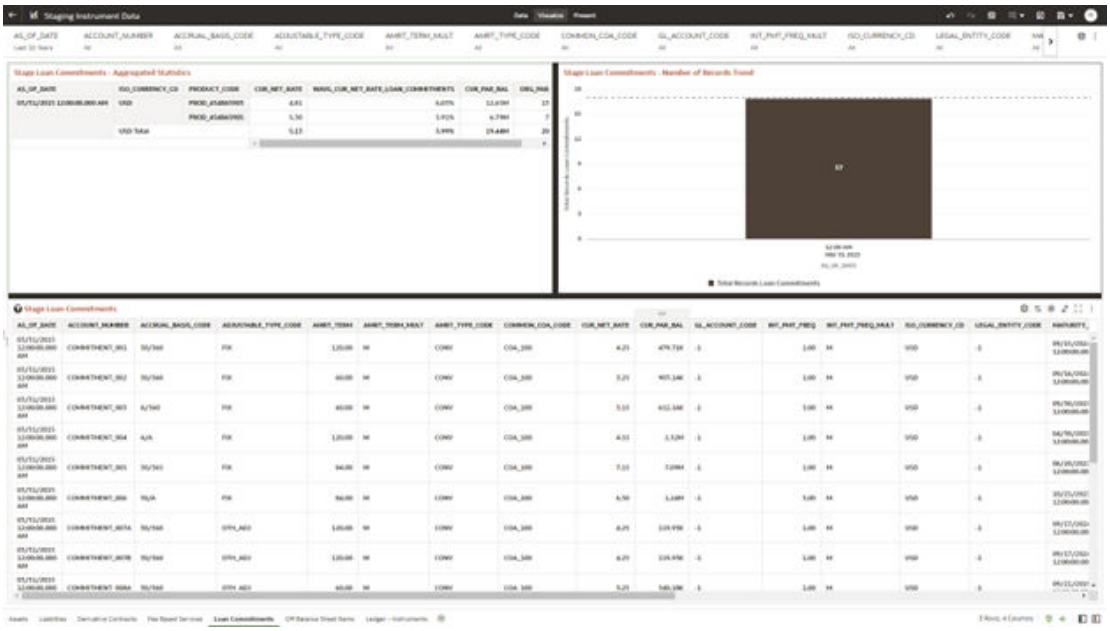
You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Loan Commitments - Aggregated Statistics
  Aggregation for CUR_PAR_BAL (sum), ORG_PAR_BAL (sum) and CUR_NET_RATE (avg) by AS_OF_DATE, ISO_CURRENCY_CD and PRODUCT_CODE.

  In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_LOAN_COMMITMENTS, is calculated as the Weighted AVG by CUR_PAR_BAL.
- Stage Loan Commitments - Number of Records Trend
  Total Records Loan Commitments aggregated by AS_OF_DATE.
- Stage Loan Commitments
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-15 Staging Instrument Data – Loan Commitments



5.1.3.1.6 Off Balance Sheet Items

The Off Balance Sheet Items Report provides the analysis capability on the Stage off Balance Sheet Contracts Table.

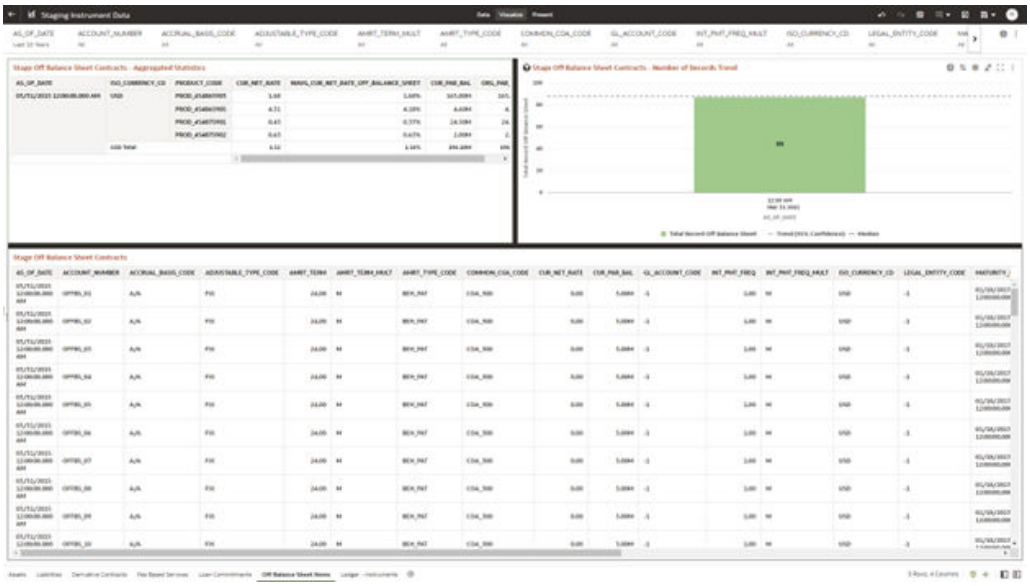
You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Off Balance Sheet Contracts - Aggregated Statistics
  Aggregation for CUR_PAR_BAL (sum), ORG_PAR_BAL (sum) and CUR_NET_RATE (avg) by AS_OF_DATE, ISO_CURRENCY_CD and PRODUCT_CODE.

  In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_OFF_BALANCE_SHEET, is calculated as the Weighted AVG by CUR_PAR_BAL.
- Stage Off Balance Sheet Contracts - Number of Records Trend
  Total Record off Balance Sheet aggregated by AS_OF_DATE.
- Stage Off Balance Sheet Contracts
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-16 Staging Instrument Data – Off Balance Sheet Items



5.1.3.1.7 Ledger - Instruments

The Ledger – Instrument Report provides the analysis capability on the Stage Ledger Instrument Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Ledger Instrument - Aggregated Statistics
  Aggregation for CUR_PAR_BAL (sum), ORG_PAR_BAL (sum) and CUR_NET_RATE (avg) by AS_OF_DATE, ISO_CURRENCY_CD and PRODUCT_CODE.

  In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_LEDGER_INSTRUMENTS, is calculated as the Weighted AVG by CUR_PAR_BAL.
- Stage Ledger Instrument - Number of Records Trend
  Total Records Ledger Instruments aggregated by AS_OF_DATE.
- Stage Ledger Instrument
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-17 Staging Instrument Data – Ledger - Instruments

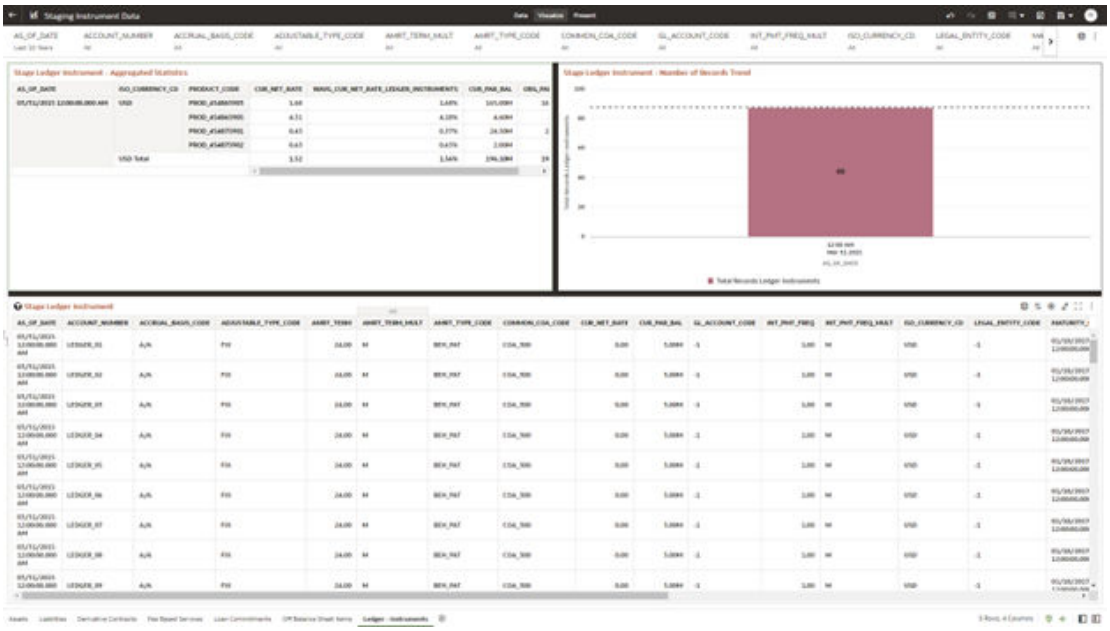
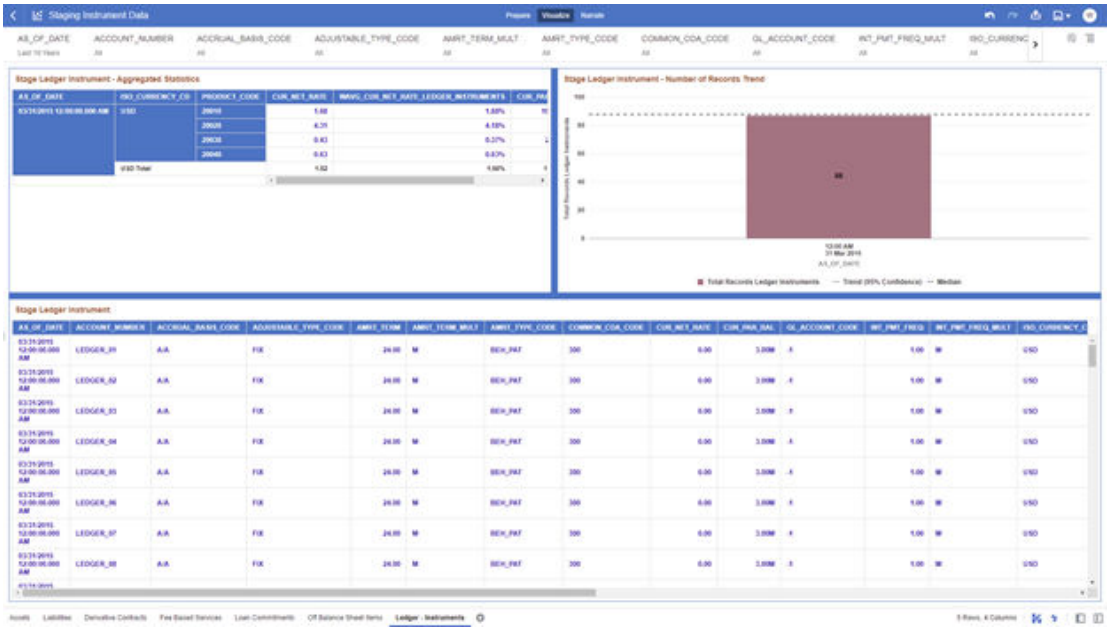


Figure 5-18 Staging Instrument Data – Ledger - Instruments



5.1.3.2 Staging Instrument Supplementary Data

You can use the Staging Instrument Supplementary Data Report to perform the analysis on the Staging Area Tables related to Instrument Supplementary Data. The report contains specifically the following Staging Database Objects:

Table 5-3 Staging Instrument Data Reports

Report Name	Scope	Table Layer	Physical Table List	Logical Table List	Report Canvas Name
Staging Instrument Supplementary Data	Instrument Supplementary	STG-Staging	STG_ACCOUNT_INDEX_HIST STG_ACCOUNT_RATE_TIERS STG_EMBEDDED_OPTIONS_SCH STG_PAYMENT_SCHEDULE	Stage Account Index History Stage Account Rate Tiers Stage Embedded Options Schedule Stage Payment Schedule	Account Index History Account Rate Tiers Embedded Options Schedule Payment Schedule

5.1.3.2.1 Account Index History

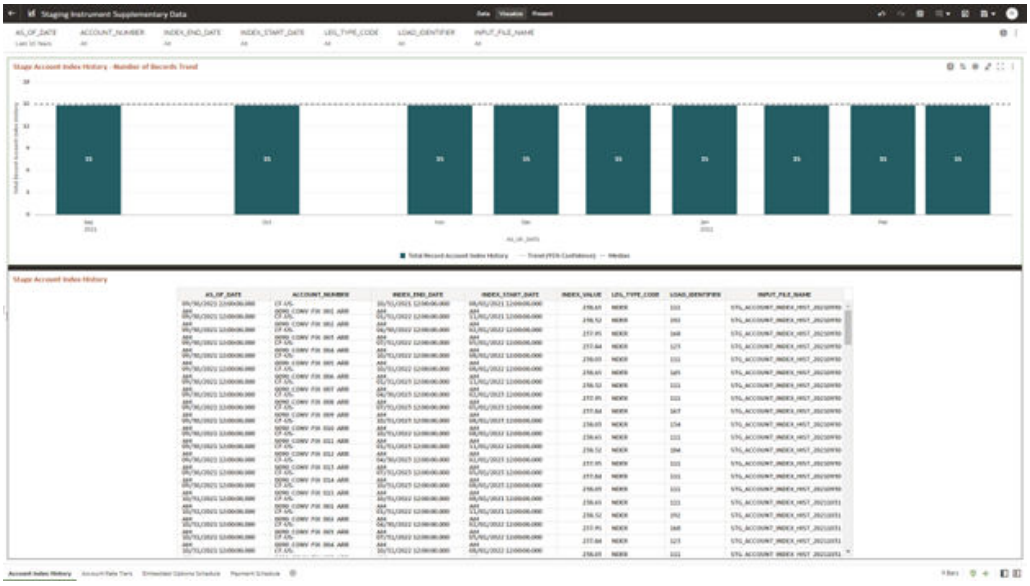
The Account Index History Report provides the analysis capability on the Stage Account Index History Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Account Index History - Number of Records Trend
  Total Records Account Index History aggregated by AS_OF_DATE.
- Stage Account Index History
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-19 Staging Instrument Supplementary Data – Account Index History



5.1.3.2.2 Account Rate Tiers

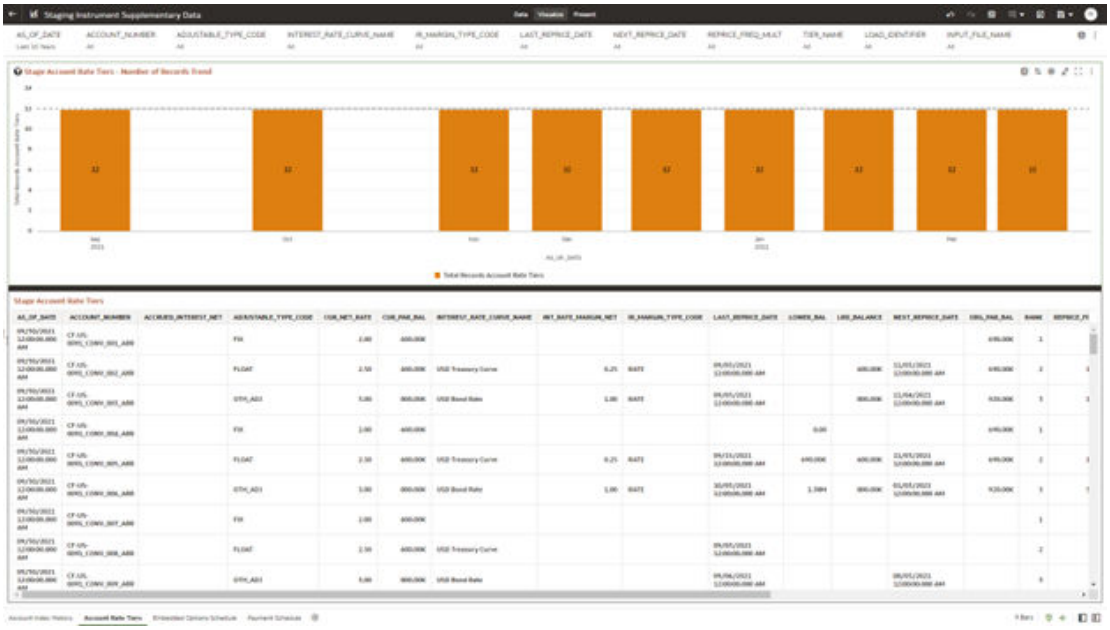
The Account Rate Tiers Report provides the analysis capability on the Stage Account Rate Tiers Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Account Rate Tiers - Number of Records Trend
  Total Records Account Rate Tiers aggregated by AS_OF_DATE.
- Stage Account Rate Tiers
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-20 Staging Instrument Supplementary Data – Account Rate Tiers



5.1.3.2.3 Embedded Options Schedule

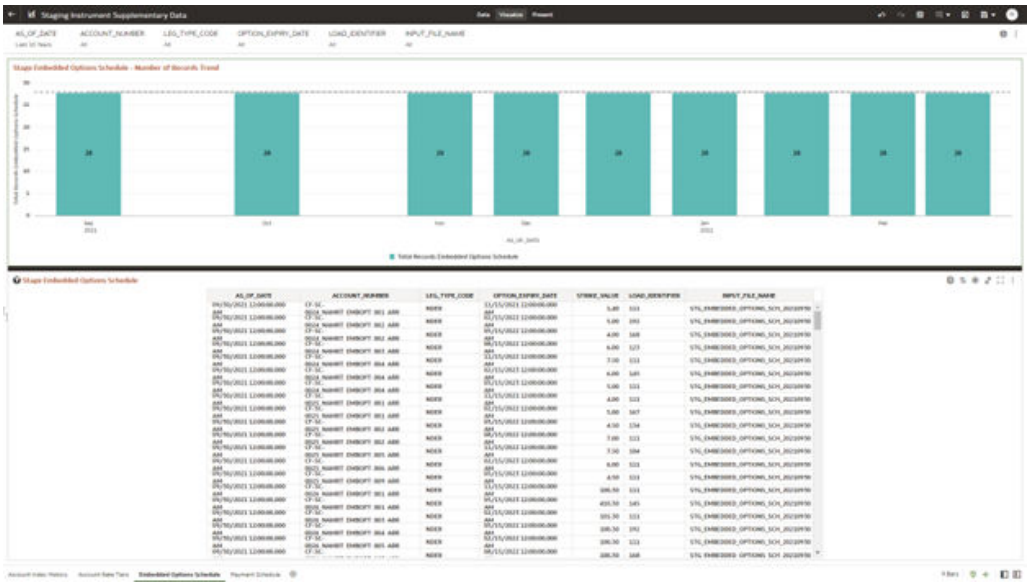
The Embedded Options Schedule Report provides the analysis capability on the Stage Embedded Options Schedule Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Embedded Options Schedule - Number of Records Trend
  Total Records Embedded Options Schedule aggregated by AS_OF_DATE.
- Stage Embedded Options Schedule
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-21 Staging Instrument Supplementary Data – Embedded Options Schedule



5.1.3.2.4 Payment Schedule

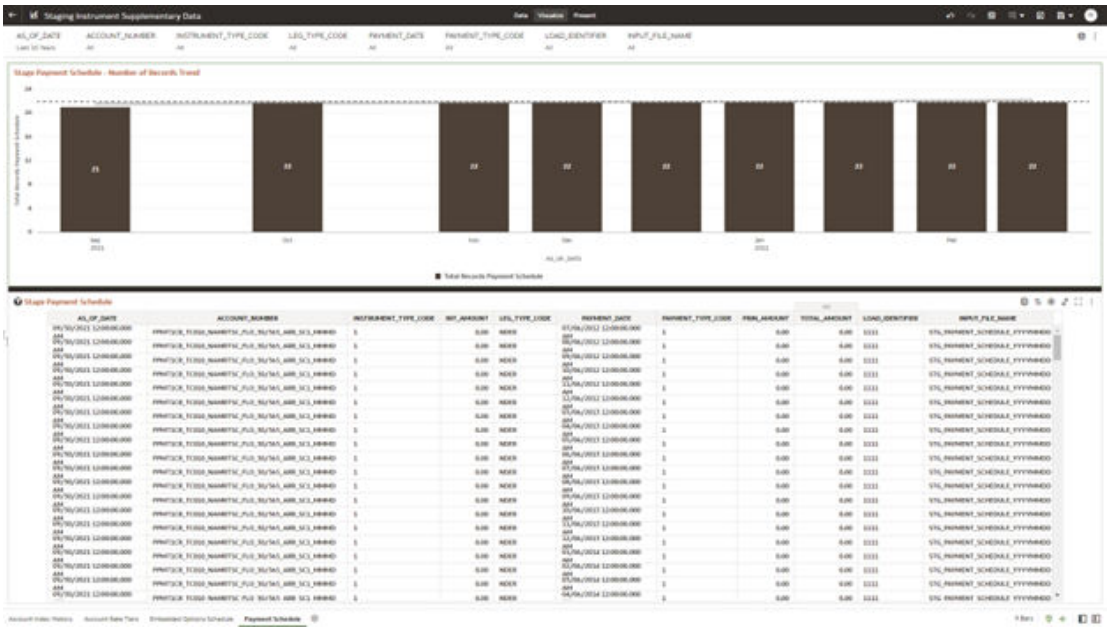
The Payment Schedule Report provides the analysis capability on the Stage Payment Schedule Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Payment Schedule - Number of Records Trend
  Total Records Payment Schedule aggregated by AS_OF_DATE.
- Stage Payment Schedule
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-22 Staging Instrument Supplementary Data – Payment Schedule



5.1.3.3 Staging Ledger Data

You can use this report to perform the analysis on the Staging Area Tables related to Ledger Data. The report contains specifically the following Staging Database Objects:

Table 4:

Table 5-4 Staging Ledger Data Reports

Report Name	Scope	Table Layer	Physical Table List	Logical Table List	Report Canvas Name
Staging Ledger Data	Ledger	STG-Staging	STG_MANAGEMENT_LEDGER STG_MANAGEMENT_LEDGER_01 STG_MANAGEMENT_LEDGER_02 STG_MANAGEMENT_LEDGER_03 STG_MANAGEMENT_LEDGER_04 STG_MANAGEMENT_LEDGER_05	Stage Management Ledger Stage Placeholder Management Ledger 01 Stage Placeholder Management Ledger 02 Stage Placeholder Management Ledger 03 Stage Placeholder Management Ledger 04 Stage Placeholder Management Ledger 05	Management Ledger Management Ledger 01 Management Ledger 02 Management Ledger 03 Management Ledger 04 Management Ledger 05

5.1.3.3.1 Management Ledger

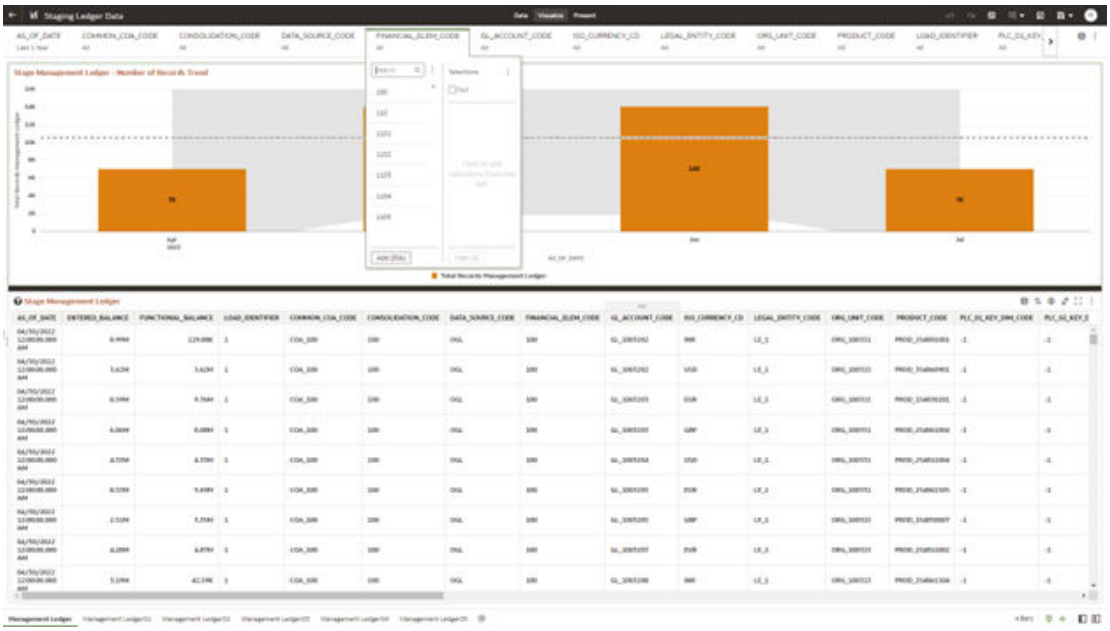
The Management Ledger Report provides the analysis capability on the Stage Management Ledger Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Management Ledger - Number of Records Trend
  Total Records Management Ledger aggregated by AS_OF_DATE.
- Stage Management Ledger
  Granular table records at FINANCIAL_ELEM_CODE level.

Figure 5-23 Staging Ledger Data – Management Ledger



5.1.3.3.2 Management Ledger01

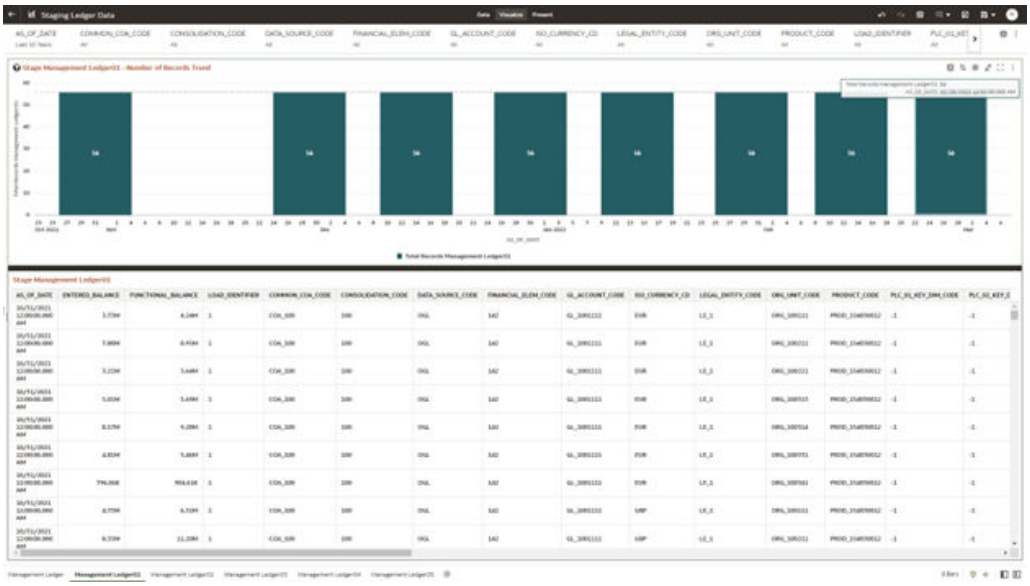
The Management Ledger01 Report provides the analysis capability on the Stage Placeholder Management Ledger 01 table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Management Ledger01 - Number of Records Trend
  Total Records Management Ledger01 aggregated by AS_OF_DATE.
- Stage Management Ledger01
  Granular table records at FINANCIAL_ELEM_CODE level.

Figure 5-24 Staging Ledger Data – Management Ledger01



5.1.3.3.3 Management Ledger02

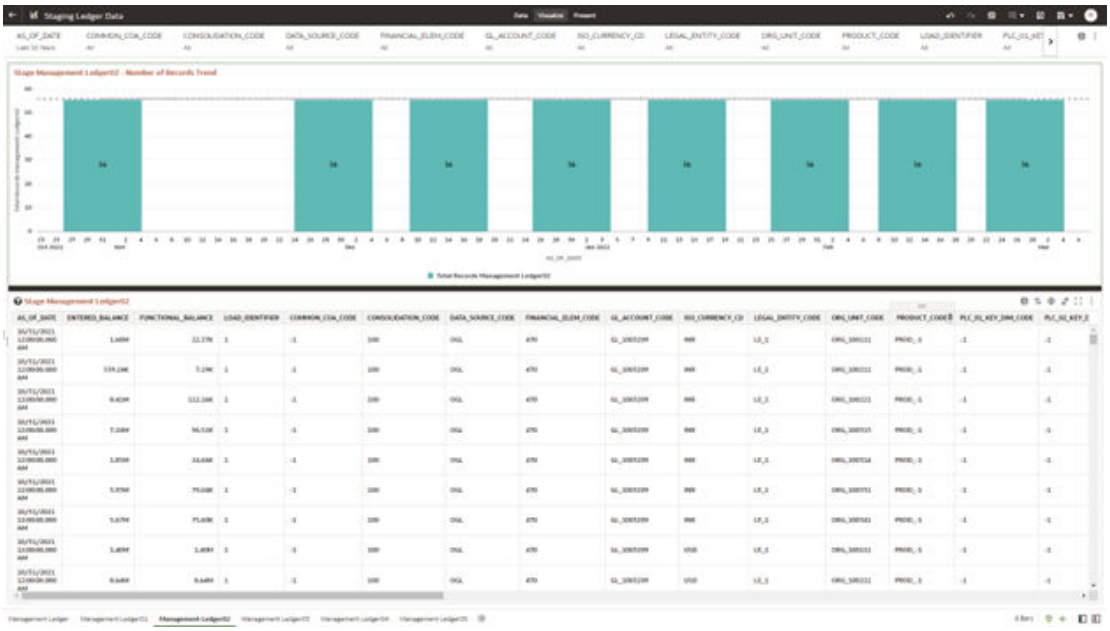
The Management Ledger02 Report provides the analysis capability on the Stage Placeholder Management Ledger 02 table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Management Ledger02 - Number of Records Trend
  Total Records Management Ledger02 aggregated by AS_OF_DATE.
- Stage Management Ledger02
  Granular table records at FINANCIAL_ELEM_CODE level.

Figure 5-25 Staging Ledger Data – Management Ledger02



5.1.3.3.4 Management Ledger03

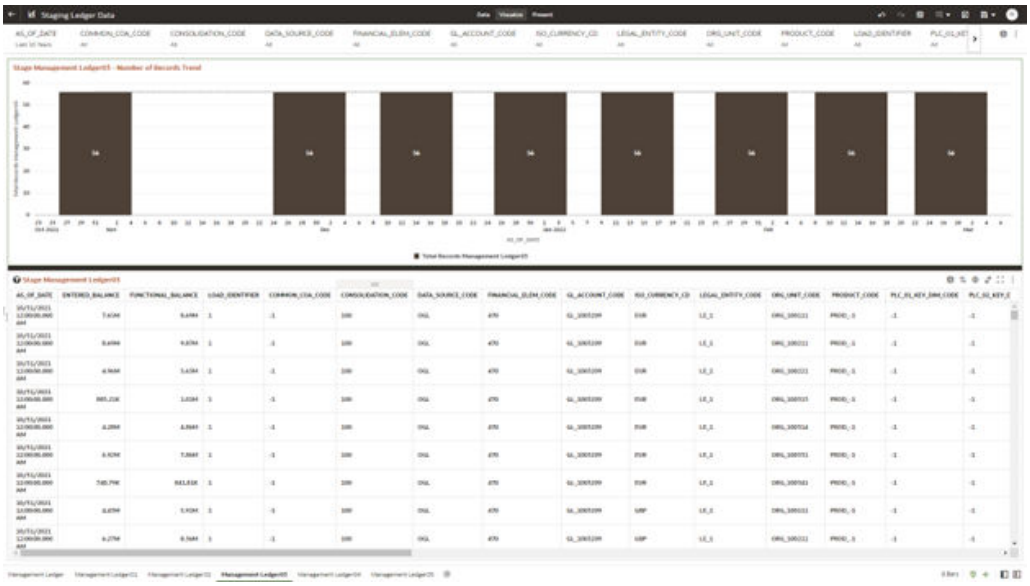
The Management Ledger03 Report provides the analysis capability on the Stage Placeholder Management Ledger 03 table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Management Ledger03 - Number of Records Trend
  Total Records Management Ledger03 aggregated by AS_OF_DATE.
- Stage Management Ledger03
  Granular table records at FINANCIAL_ELEM_CODE level.

Figure 5-26 Staging Ledger Data – Management Ledger03



5.1.3.3.5 Management Ledger04

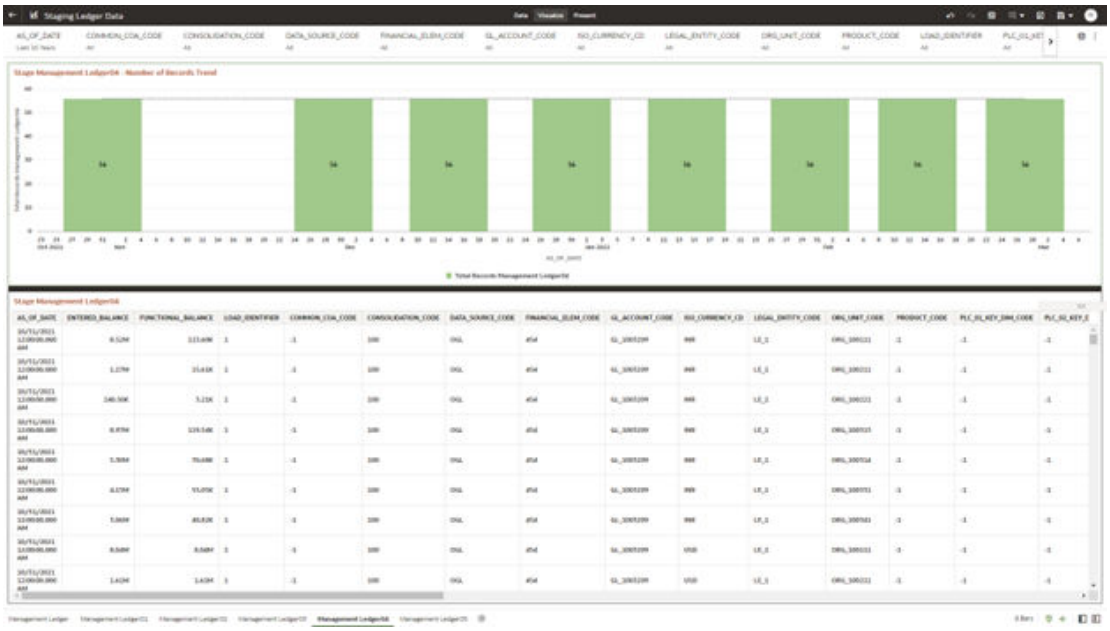
The Management Ledger04 Report provides the analysis capability on the Stage Placeholder Management Ledger 04 table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Management Ledger04 - Number of Records Trend
  Total Records Management Ledger04 aggregated by AS_OF_DATE.
- Stage Management Ledger04
  Granular table records at FINANCIAL_ELEM_CODE level.

Figure 5-27 Staging Ledger Data – Management Ledger04



5.1.3.3.6 Management Ledger05

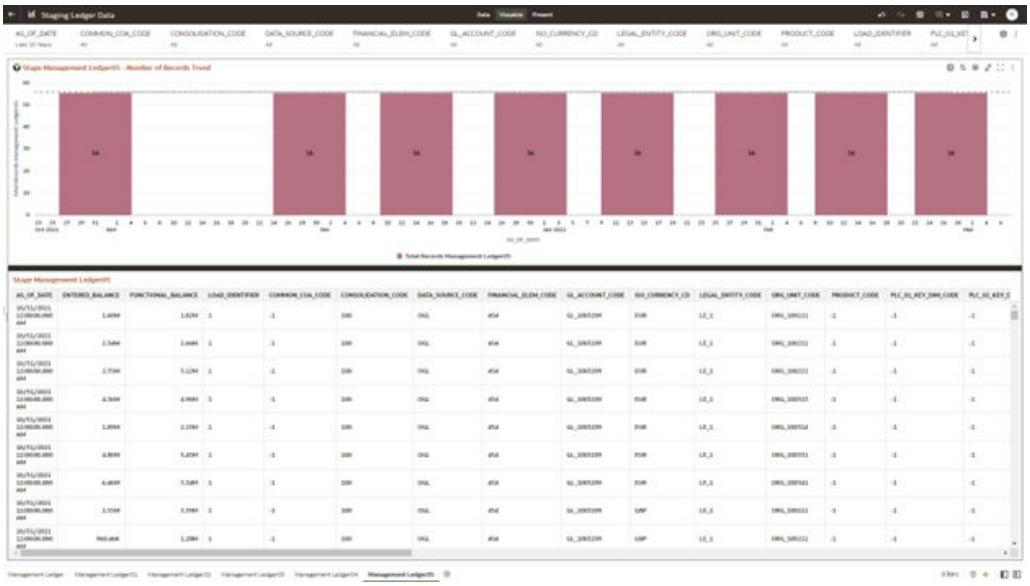
The Management Ledger05 Report provides the analysis capability on the Stage Placeholder Management Ledger 05 table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Management Ledger05 - Number of Records Trend
  Total Records Management Ledger05 aggregated by AS_OF_DATE.
- Stage Management Ledger05
  Granular table records at FINANCIAL_ELEM_CODE level.

Figure 5-28 Staging Ledger Data – Management Ledger05



5.1.3.4 Staging Transaction Summary Data

You can use this report to perform the analysis on the Staging area tables related to Transaction Summary Data. The report contains specifically the following Staging Database Objects:

Table 5-5 Staging Ledger Data Reports

Report Name	Scope	Table Layer	Physical Table List	Logical Table List	Report Canvas Name
Staging Transaction Summary Data	Transaction Summary	STG–Staging	STG_ASSET_TXN STG_LIABILITY_TXN STG_FEE_BASED_SERVICE_TXN STG_OFF_BALANCE_SHEET_TXN	Stage Asset Transaction Summary Stage Liability Transaction Summary Stage Fee Based and Other Services Transaction Summary Stage Off Balance Sheet Transaction Summary	Assets Transaction Summary Liabilities Transaction Summary Fee Based Services Transaction Summary Off Balance Sheet Transaction Summary

5.1.3.4.1 Asset Transaction Summary

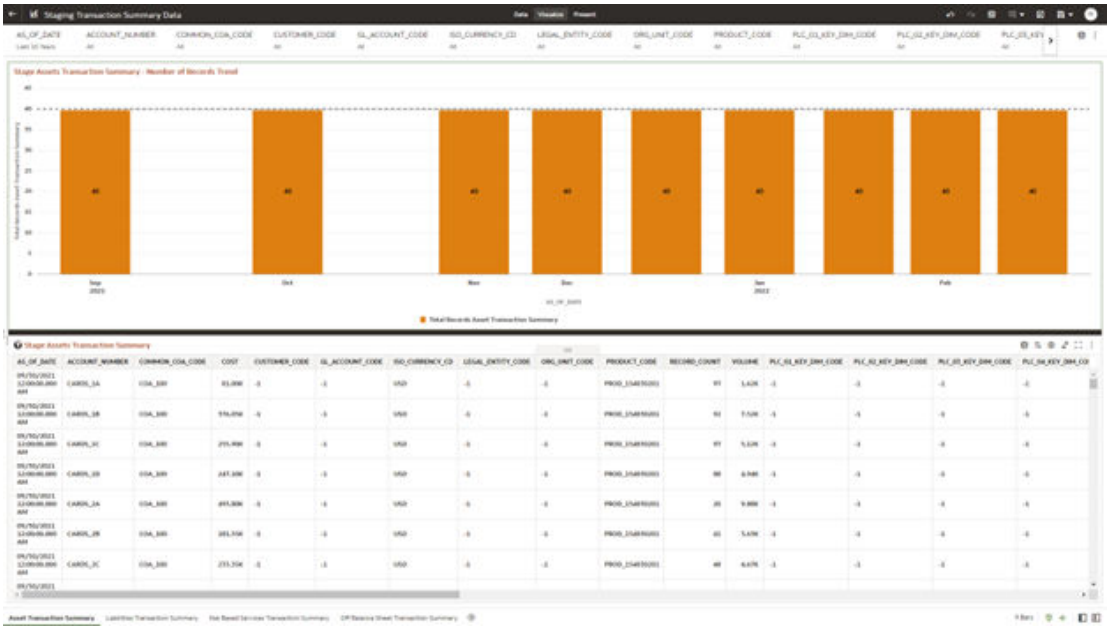
This report provides the analysis capability on the Stage Assets Transaction Summary Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Assets Transaction Summary - Number of Records Trend
  Total Records Assets Transaction Summary aggregated by AS_OF_DATE.
- Stage Assets Transaction Summary
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-29 Staging Transaction Summary Data – Asset Transaction Summary



5.1.3.4.2 Liabilities Transaction Summary

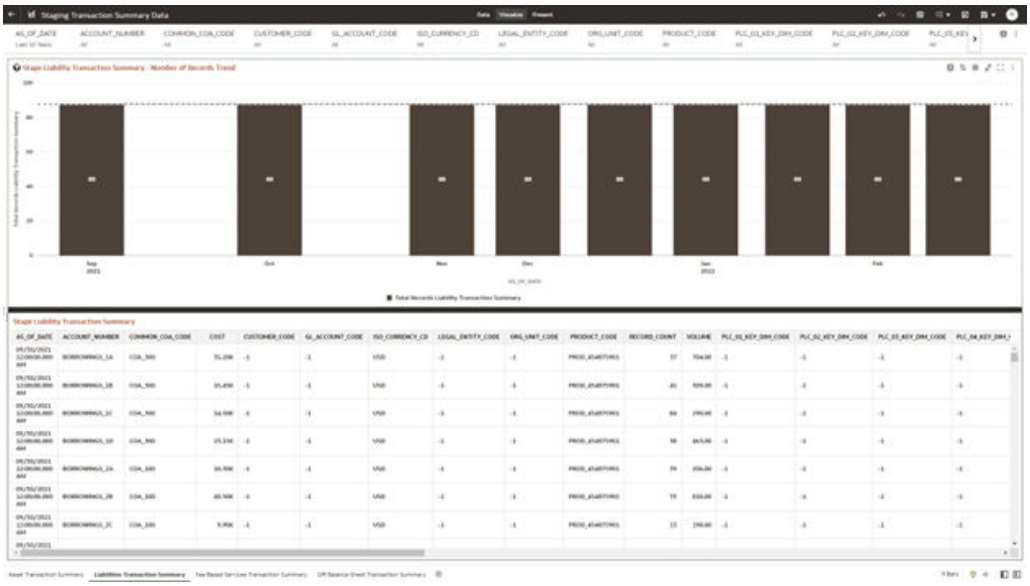
The Liabilities Transaction Summary Report provides the analysis capability on the Stage Liability Transaction Summary Table.

You can use a series of Report Prompts to filter the data according to functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Liability Transaction Summary - Number of Records Trend
  Total Records Liability Transaction Summary aggregated by AS_OF_DATE.
- Stage Liability Transaction Summary
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-30 Staging Transaction Summary Data – Liabilities Transaction Summary



5.1.3.4.3 Fee Based Services Transaction Summary

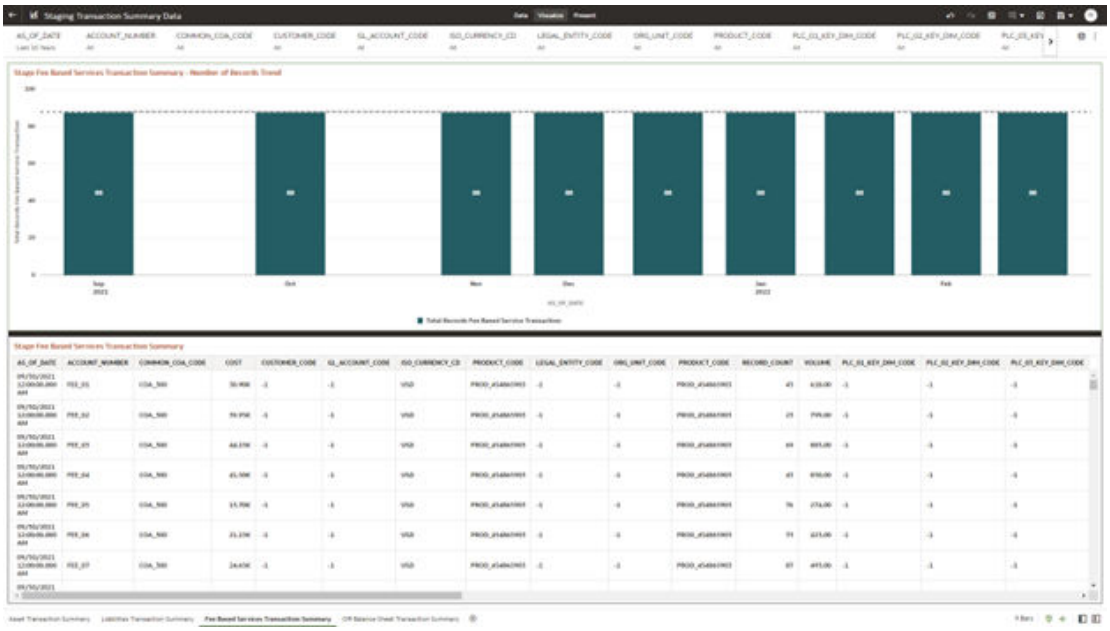
The Fee Based Services Transaction Summary Report provides the analysis capability on the Stage Fee Based and Other Services Transaction Summary Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Fee Based Services Transaction Summary - Number of Records Trend
  Total Records Fee Based Service Transaction aggregated by AS_OF_DATE.
- Stage Fee Based Services Transaction Summary
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-31 Staging Transaction Summary Data – Fee Based Services Transaction Summary



5.1.3.4.4 Off Balance Sheet Transaction Summary

The Off Balance Sheet Transaction Summary Report provides the analysis capability on the Stage Off Balance Sheet Transaction Summary Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Stage Off Balance Sheet Transaction Summary - Number of Records Trend
  Total Records Off Balance Sheet Transaction Summary aggregated by AS_OF_DATE.
- Stage Off Balance Sheet Transaction Summary
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-32 Staging Transaction Summary Data – Off Balance Sheet Transaction Summary

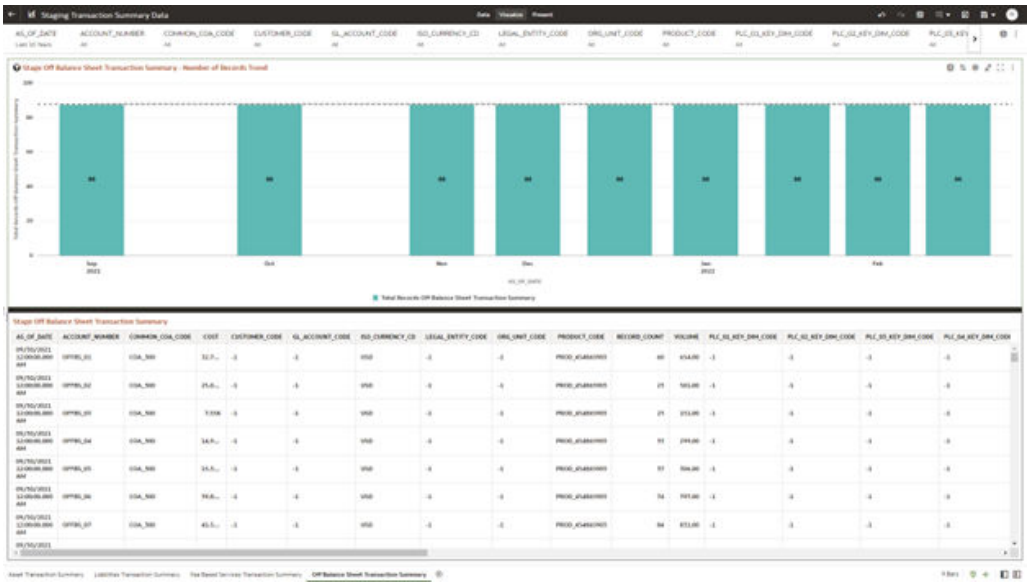
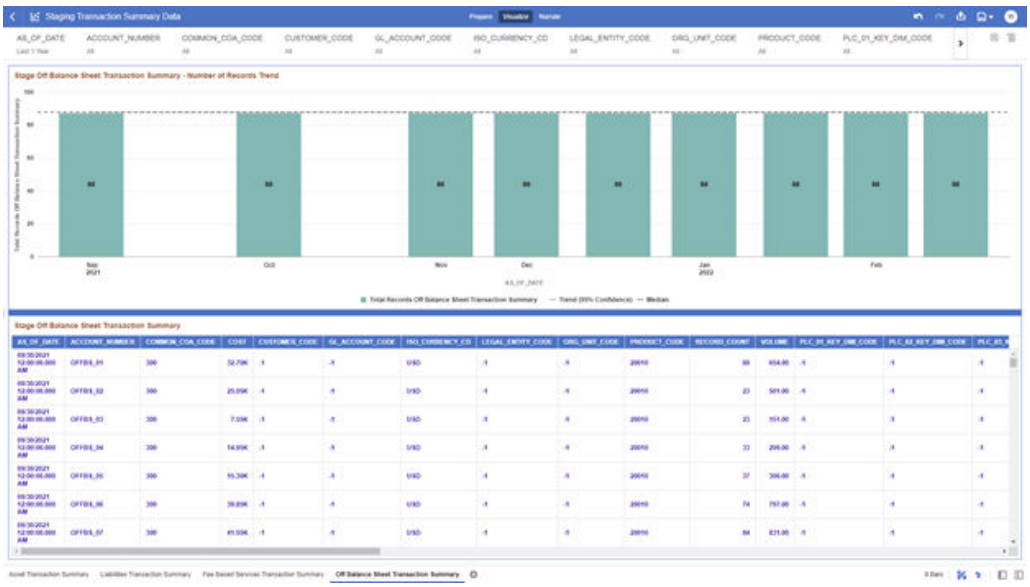


Figure 5-33 Staging Transaction Summary Data – Off Balance Sheet Transaction Summary



5.1.3.5 Processing Instrument Data

You can use this report to perform the analysis on the Processing Area Tables related to Instrument Data. The report contains specifically the following Processing Database Objects:

Table 5:

Table 5-6 Processing Instrument Data Reports

Report Name	Scope	Table Layer	Physical Table List	Logical Table List	Report Canvas Name
Processing Instrument Data	Instrument	FSI-Processing	FSI_D_ASSET FSI_D_LIABILITY FSI_D_DERIVATIVE FSI_D_FEE_BASED_SERVICE FSI_D_LOAN_COMMITMENTS FSI_D_OFF_BALANCE_SHEET FSI_D_LEDGER_INSTRUMENT	Asset Instruments Liability Instruments Derivative Contracts Fee Based and Other Services Loan Commitments Off Balance Sheet Contracts Ledger Instrument	Assets Liabilities Derivative Contracts Fee Based Services Loan Commitments Off Balance Sheet Items Ledger - Instruments

5.1.3.5.1 Assets

The Assets Report provides the analysis capability on the Asset Instrument Table.

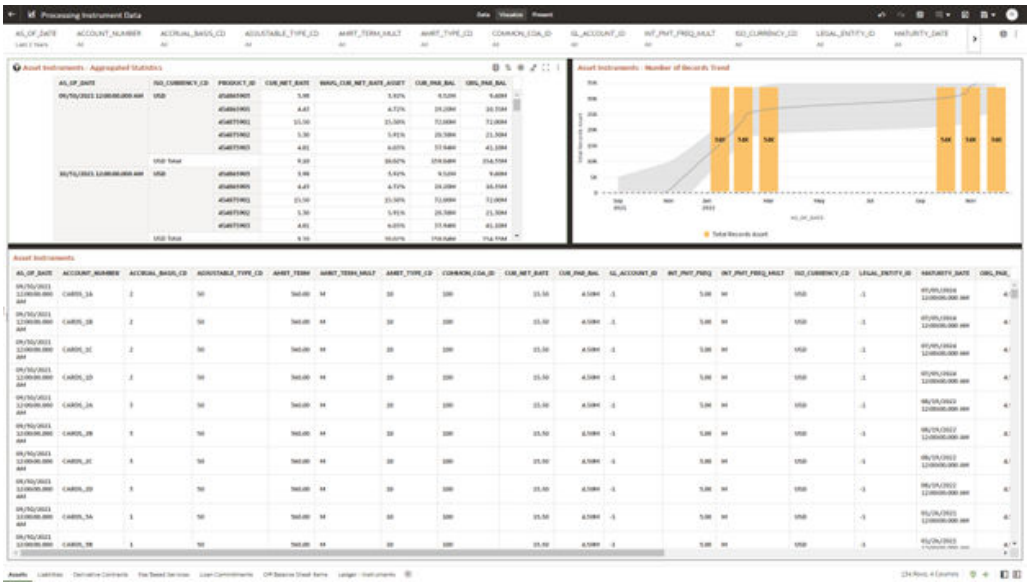
You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Asset Instruments - Aggregated Statistics
  Aggregation for CUR_PAR_BAL (sum), ORG_PAR_BAL (sum) and CUR_NET_RATE (avg) by AS_OF_DATE, ISO_CURRENCY_CD and PRODUCT_ID.

  In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_ASSET, is calculated as the Weighted AVG by CUR_PAR_BAL.
- Asset Instruments - Number of Records Trend
  Total Records Asset aggregated by AS_OF_DATE.
- Asset Instruments
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-34 Processing Instrument Data - Assets



5.1.3.5.2 Liabilities

The Liabilities Report provides the analysis capability on the Liability Instrument Table.

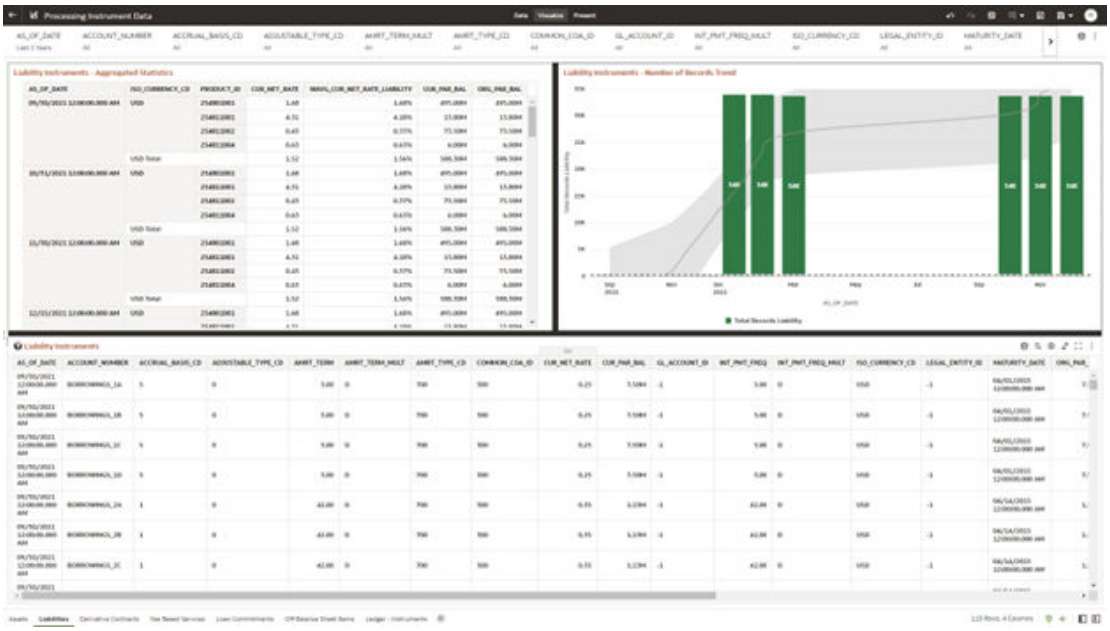
You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Liability Instruments - Aggregated Statistics
  Aggregation for CUR_PAR_BAL (sum), ORG_PAR_BAL (sum) and CUR_NET_RATE (avg) by AS_OF_DATE, ISO_CURRENCY_CD and PRODUCT_ID.

  In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_LIABILITY, is calculated as the Weighted AVG by CUR_PAR_BAL.
- Liability Instruments - Number of Records Trend
  Total Records Liability aggregated by AS_OF_DATE.
- Liability Instruments
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-35 Processing Instrument Data - Liabilities



5.1.3.5.3 Derivative Contracts

The Derivative Contracts Report provides the analysis capability on the Derivative Contracts Table.

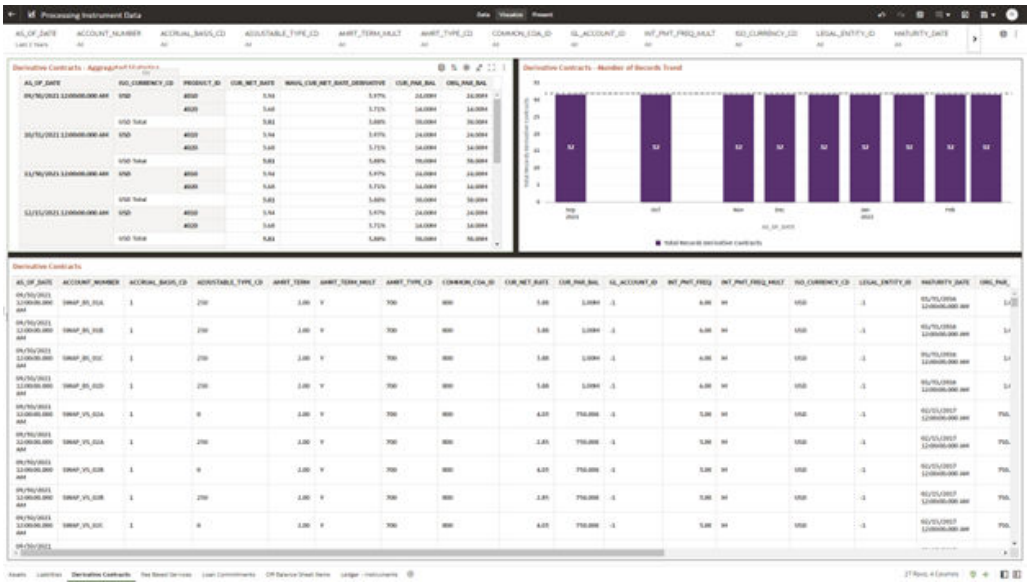
You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Derivative Contracts - Aggregated Statistics
  Aggregation for CUR_PAR_BAL (sum), ORG_PAR_BAL (sum) and CUR_NET_RATE (avg) by AS_OF_DATE, ISO_CURRENCY_CD and PRODUCT_ID.

  In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_LIABILITY, is calculated as the Weighted AVG by CUR_PAR_BAL.
- Derivative Contracts - Number of Records Trend
  Total Records Derivative Contracts aggregated by AS_OF_DATE.
- Derivative Contracts
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-36 Processing Instrument Data – Derivative Contracts



5.1.3.5.4 Fee Based Services

The Fee Based Services Report provides the analysis capability on the Fee Based and Other Services Table.

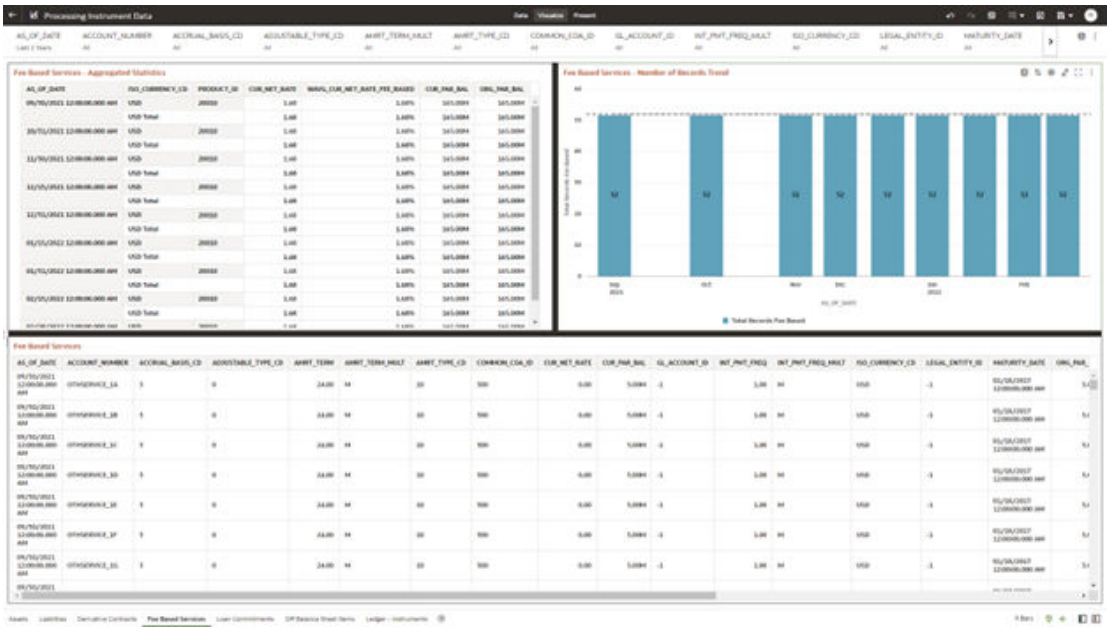
You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Fee Based Services - Aggregated Statistics
  Aggregation for CUR_PAR_BAL (sum), ORG_PAR_BAL (sum) and CUR_NET_RATE (avg) by AS_OF_DATE, ISO_CURRENCY_CD and PRODUCT_ID.

  In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_FEE_BASED, is calculated as the Weighted AVG by CUR_PAR_BAL.
- Fee Based Services - Number of Records Trend
  Total Records Fee Based aggregated by AS_OF_DATE.
- Fee Based Services
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-37 Processing Instrument Data – Fee Based Services



5.1.3.5.5 Loan Commitments

The Loan Commitments Report provides the analysis capability on the Loan Commitments Table.

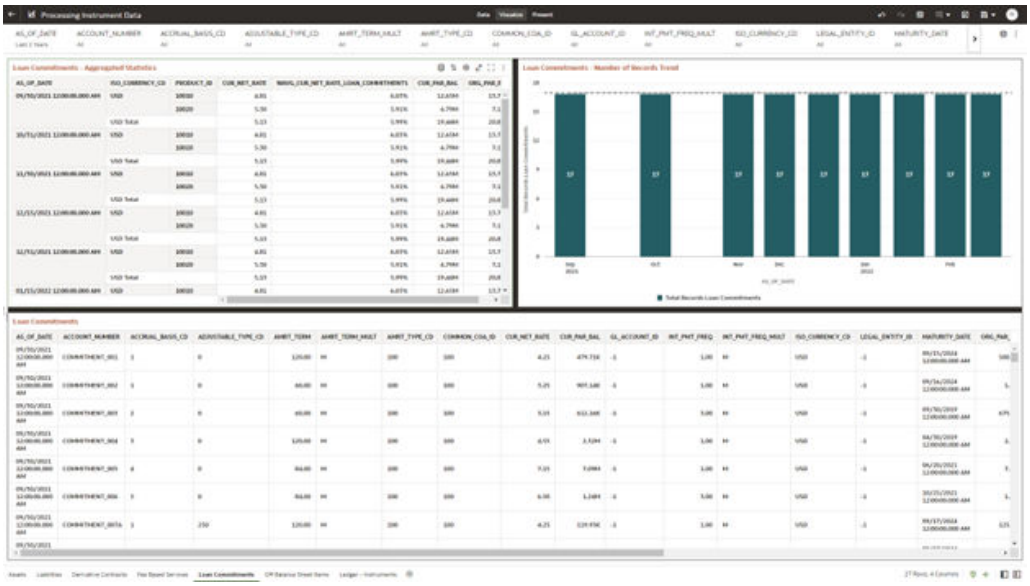
You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Loan Commitments - Aggregated Statistics
  Aggregation for CUR_PAR_BAL (sum), ORG_PAR_BAL (sum) and CUR_NET_RATE (avg) by AS_OF_DATE, ISO_CURRENCY_CD and PRODUCT_ID.

  In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_LOAN_COMMITMENTS, is calculated as the Weighted AVG by CUR_PAR_BAL.
- Loan Commitments - Number of Records Trend
  Total Records Loan Commitments aggregated by AS_OF_DATE.
- Loan Commitments
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-38 Processing Instrument Data – Loan Commitments



5.1.3.5.6 Off Balance Sheet Items

The Off Balance Sheet Items Report provides the analysis capability on the Off Balance Sheet Contracts Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Off Balance Sheet Contracts - Aggregated Statistics
  Aggregation for CUR_PAR_BAL (sum), ORG_PAR_BAL (sum) and CUR_NET_RATE (avg) by AS_OF_DATE, ISO_CURRENCY_CD and PRODUCT_ID.

  In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_OFF_BALANCE_SHEET, is calculated as the Weighted AVG by CUR_PAR_BAL.
- Off Balance Sheet Contracts - Number of Records Trend
  Total Record Off Balance Sheet aggregated by AS_OF_DATE.
- Off Balance Sheet Contracts
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-39 Processing Instrument Data – Off Balance Sheet Items

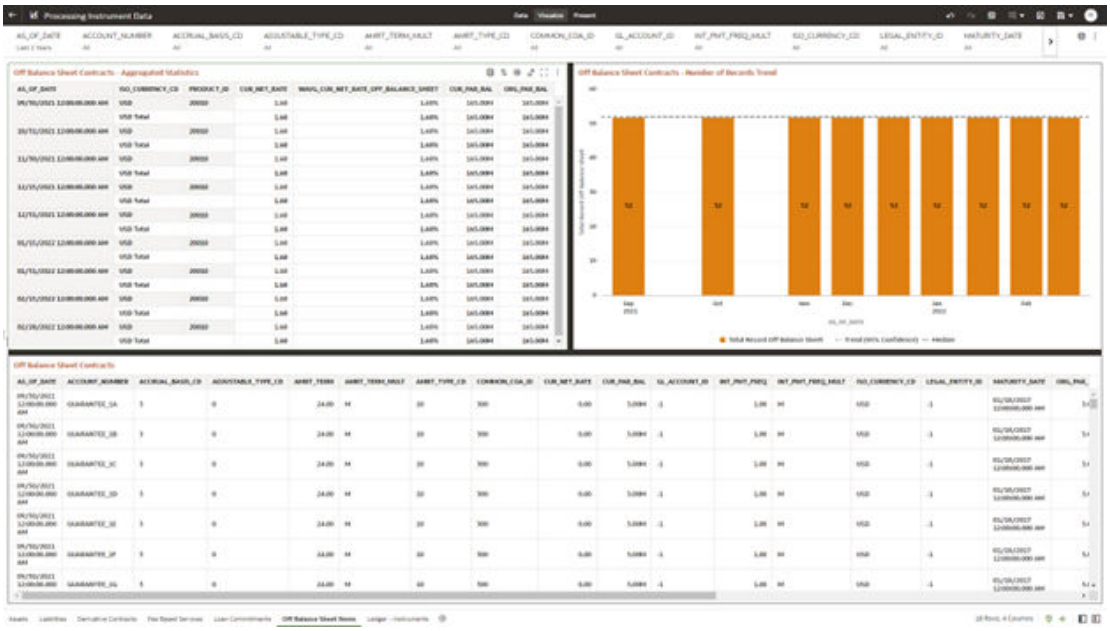
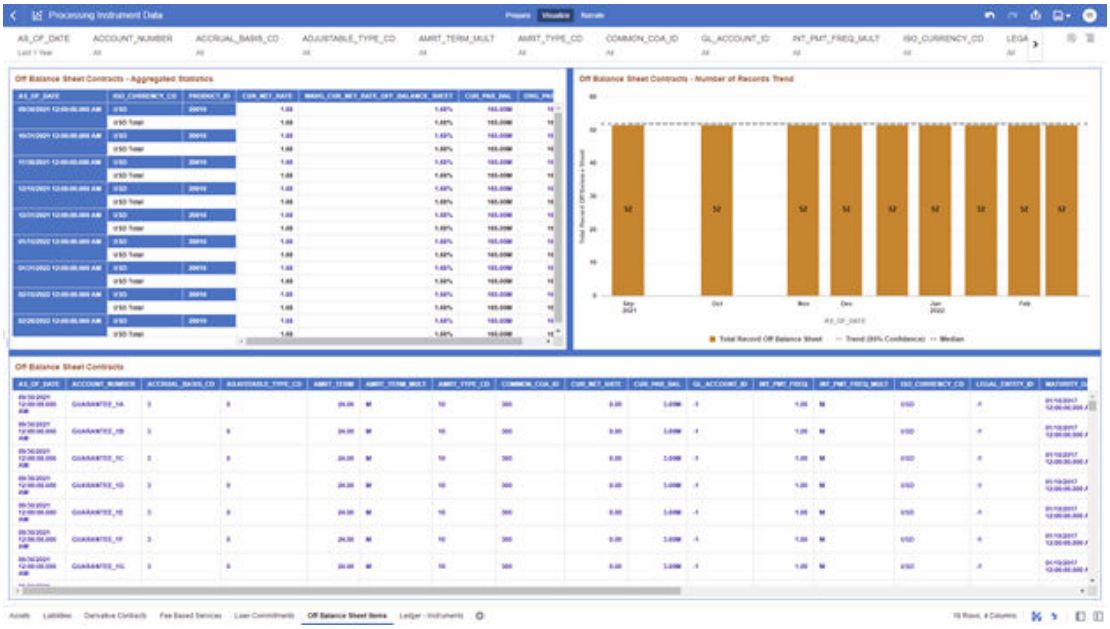


Figure 5-40 Processing Instrument Data – Off Balance Sheet Items



5.1.3.5.7 Ledger - Instruments

The Ledger – Instrument Report provides the analysis capability on the Ledger Instrument Table.

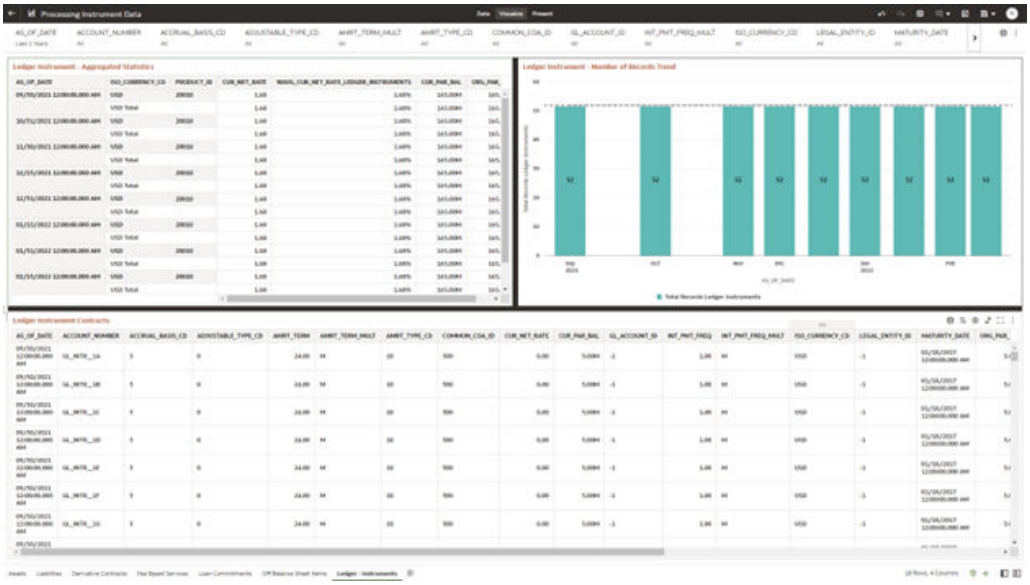
You can use a series of Report Prompts to filter the data according to functional key attributes pertaining to the table columns perimeter.

The report displays the underlying data according to the following Charts' logic:

- Ledger Instrument - Aggregated Statistics
  Aggregation for CUR_PAR_BAL (sum), ORG_PAR_BAL (sum) and CUR_NET_RATE (avg) by AS_OF_DATE, ISO_CURRENCY_CD and PRODUCT_ID.

  In addition, for CUR_NET_RATE, the additional Balance Weighted Rate, WAVG_CUR_NET_RATE_LEDGER_INSTRUMENTS, is calculated as the Weighted AVG by CUR_PAR_BAL.
- Ledger Instrument - Number of Records Trend
  Total Records Ledger Instruments aggregated by AS_OF_DATE.
- Ledger Instrument
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-41 Processing Instrument Data – Ledger Instruments



5.1.3.6 Processing Instrument Supplementary Data

You can use this report to perform the analysis on the Processing Area Tables related to Instrument Data. The report contains specifically the below Processing Database Objects:

Table 6: Processing Instrument Supplementary Data

Table 5-7 Processing Instrument Supplementary Data

Report Name	Scope	Table Layer	Physical Table List	Logical Table List	Report Canvas Name
Processing Instrument Supplementary Data	Instrument Supplementary	FSI–Processing	FSI_D_ACCOUNT_INDEX_HIST FSI_D_ACCOUNT_RATE_TIERS FSI_D_EMBEDDED_OPTIONS_SCH FSI_D_PAYMENT_SCHEDULE	Account Index History Account Rate Tiers Embedded Options Schedule Payment Schedule	Account Index History Account Rate Tiers Embedded Options Schedule Payment Schedule

5.1.3.6.1 Account Index History

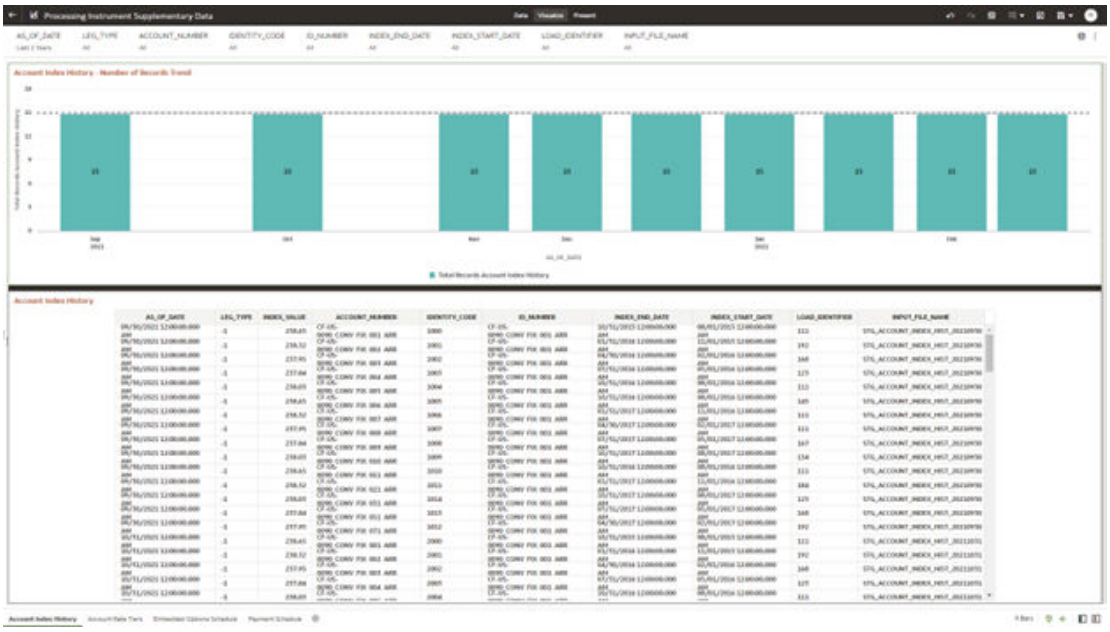
The Account Index History Report provides the analysis capability on the Account Index History Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Account Index History - Number of Records Trend
  Total Records Account Index History aggregated by AS_OF_DATE.
- Account Index History
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-42 Processing Instrument Supplementary Data – Account Index History



5.1.3.6.2 Account Rate Tiers

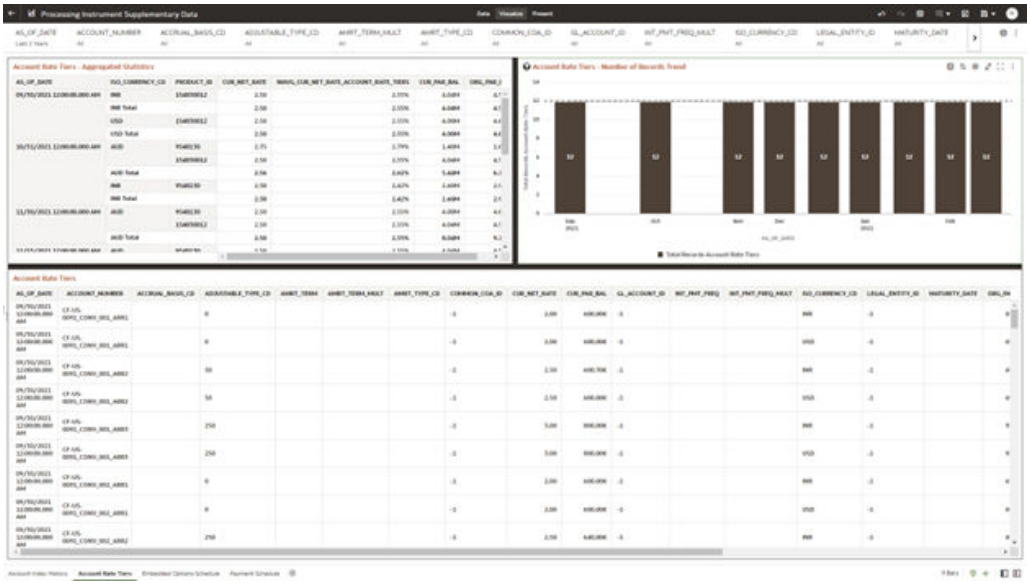
The Account Rate Tiers Report provides the analysis capability on the Account Rate Tiers Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Account Rate Tiers - Number of Records Trend
  Total Records Account Rate Tiers aggregated by AS_OF_DATE.
- Account Rate Tiers
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-43 Processing Instrument Supplementary Data – Account Rate Tiers



5.1.3.6.3 Embedded Options Schedule

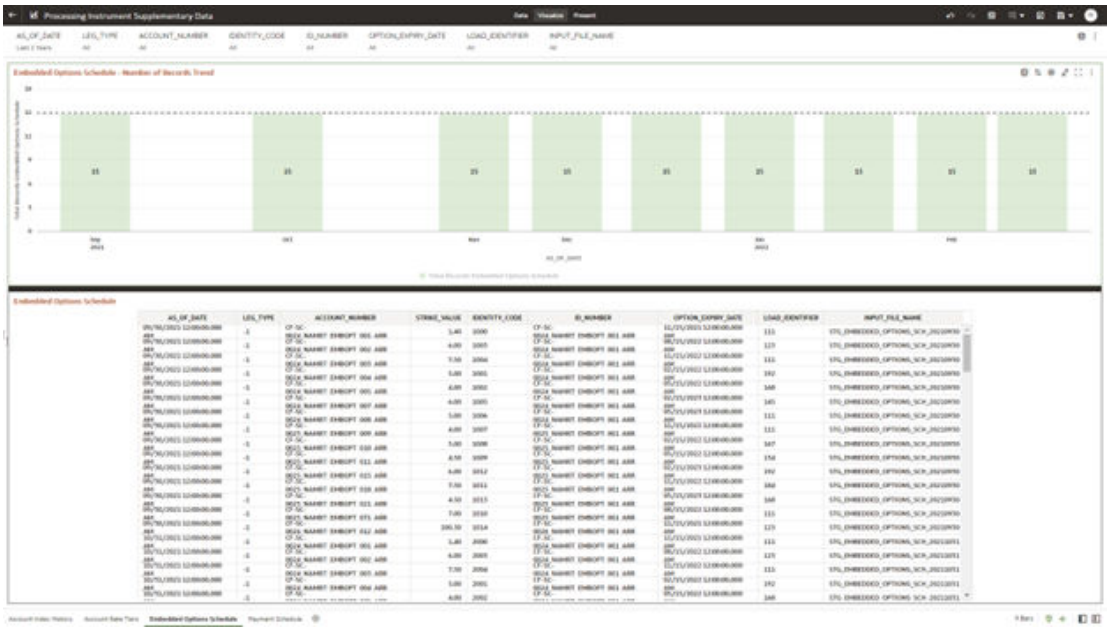
The Embedded Options Schedule Report provides the analysis capability on the Embedded Options Schedule Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Embedded Options Schedule - Number of Records Trend
  Total Records Embedded Options Schedule aggregated by AS_OF_DATE.
- Embedded Options Schedule
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-44 Processing Instrument Supplementary Data – Embedded Options Schedule



5.1.3.6.4 Payment Schedule

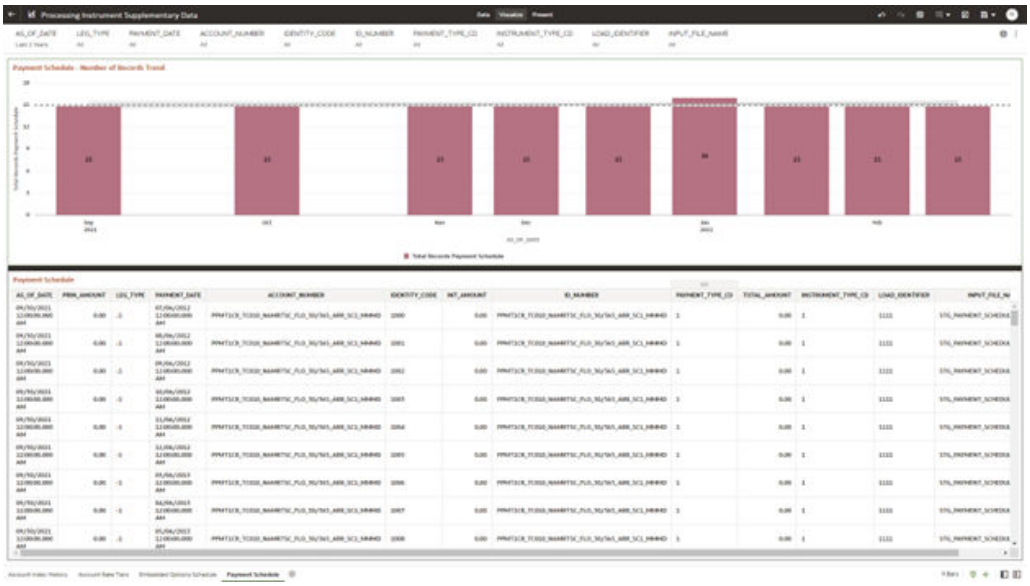
The Payment Schedule Report provides the analysis capability on the Payment Schedule Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Payment Schedule - Number of Records Trend
  Total Records Payment Schedule aggregated by AS_OF_DATE.
- Payment Schedule
  Granular table records at ACCOUNT_NUMBER level.

Figure 5-45 Processing Instrument Supplementary Data – Payment Schedule



5.1.3.7 Processing Ledger Data

You can use this report to perform analysis on the Processing Area Tables related to Ledger Data. The report contains specifically the following Staging Database Objects:

Table 7: Staging Ledger Data Reports

Table 5-8 Staging Ledger Data Reports

Report Name	Scope	Table Layer	Physical Table List	Logical Table List	Report Canvas Name
Processing Ledger Data	Ledger	FSI-Processing	FSI_D_MANAGEMENT_LEDGER FSI_D_MANAGEMENT_LEDGER_01 FSI_D_MANAGEMENT_LEDGER_02 FSI_D_MANAGEMENT_LEDGER_03 FSI_D_MANAGEMENT_LEDGER_04 FSI_D_MANAGEMENT_LEDGER_05	Management Ledger Placeholder Management Ledger 01 Placeholder Management Ledger 02 Placeholder Management Ledger 03 Placeholder Management Ledger 04 Placeholder Management Ledger 05	Management Ledger Management Ledger 01 Management Ledger 02 Management Ledger 03 Management Ledger 04 Management Ledger 05

5.1.3.7.1 Management Ledger

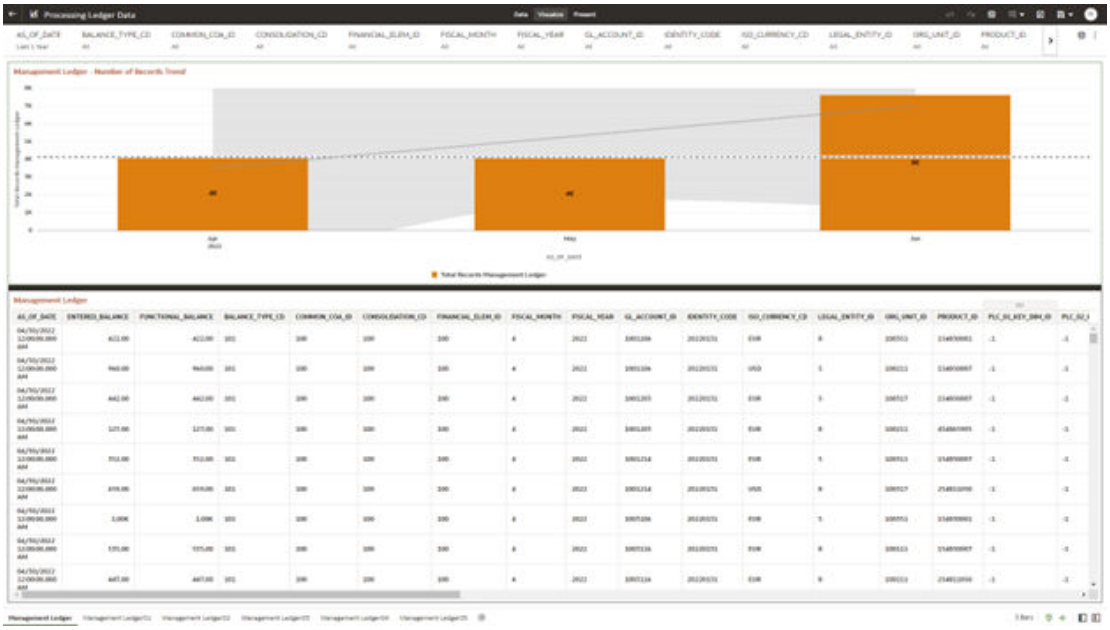
The Management Ledger Report provides the analysis capability on the Management Ledger Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Management Ledger - Number of Records Trend
  Total Records Management Ledger aggregated by AS_OF_DATE.
- Management Ledger
  Granular table records at FINANCIAL_ELEM_ID level.

Figure 5-46 Processing Ledger Data – Management Ledger



5.1.3.7.2 Management Ledger01

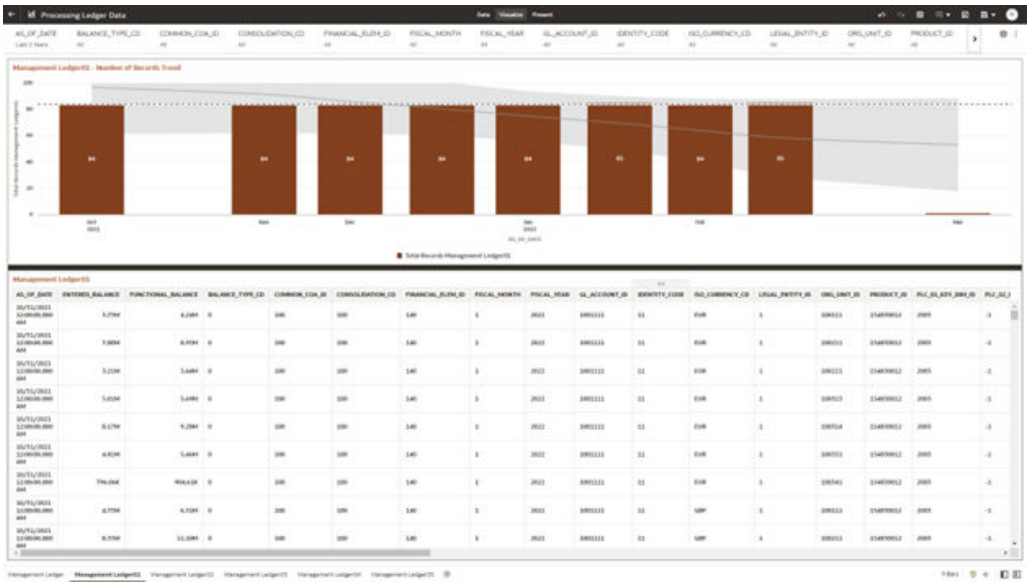
The Management Ledger01 Report provides the analysis capability on the Placeholder Management Ledger 01 Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Management Ledger01 - Number of Records Trend
  Total Records Management Ledger01 aggregated by AS_OF_DATE.
- Management Ledger01
  Granular table records at FINANCIAL_ELEM_ID level.

Figure 5-47 Processing Ledger Data – Management Ledger01



5.1.3.7.3 Management Ledger02

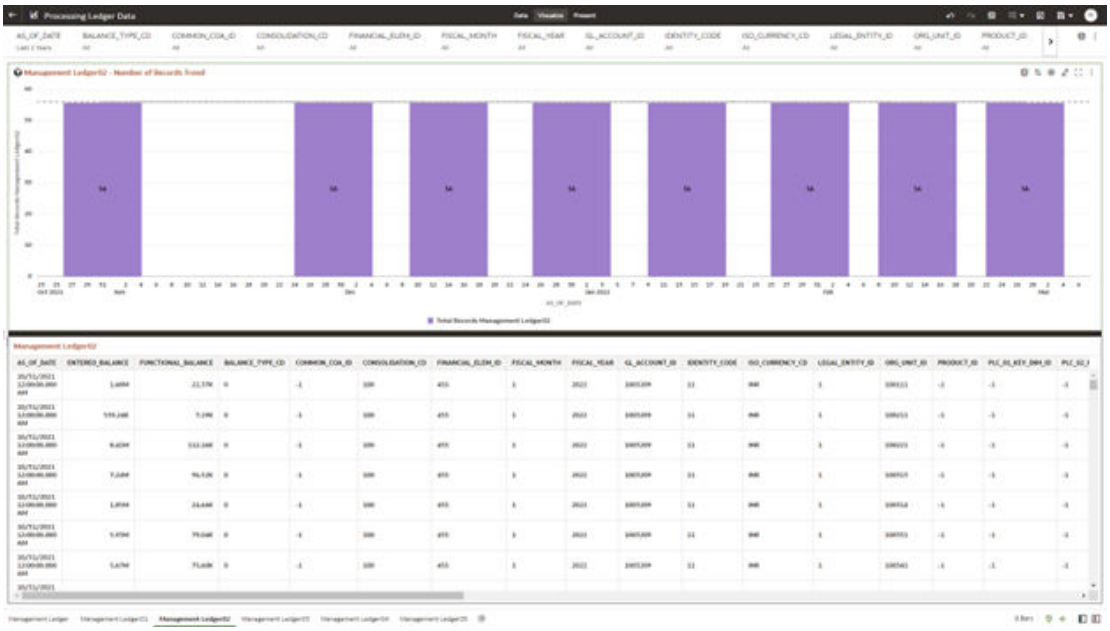
The Management Ledger02 Report provides the analysis capability on the Placeholder Management Ledger 02 Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Management Ledger02 - Number of Records Trend
  Total Records Management Ledger02 aggregated by AS_OF_DATE.
- Management Ledger02
  Granular table records at FINANCIAL_ELEM_ID level.

Figure 5-48 Processing Ledger Data – Management Ledger02



5.1.3.7.4 Management Ledger03

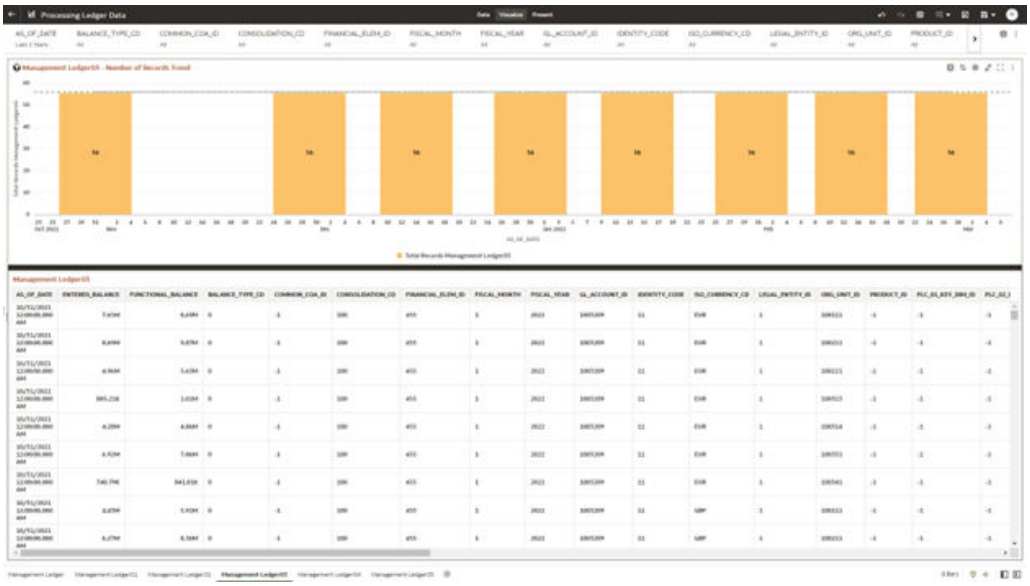
The Management Ledger03 Report provides the analysis capability on the Placeholder Management Ledger 03 Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Management Ledger03 - Number of Records Trend
  Total Records Management Ledger03 aggregated by AS_OF_DATE.
- Management Ledger03
  Granular table records at FINANCIAL_ELEM_ID level.

Figure 5-49 Processing Ledger Data – Management Ledger03



5.1.3.7.5 Management Ledger04

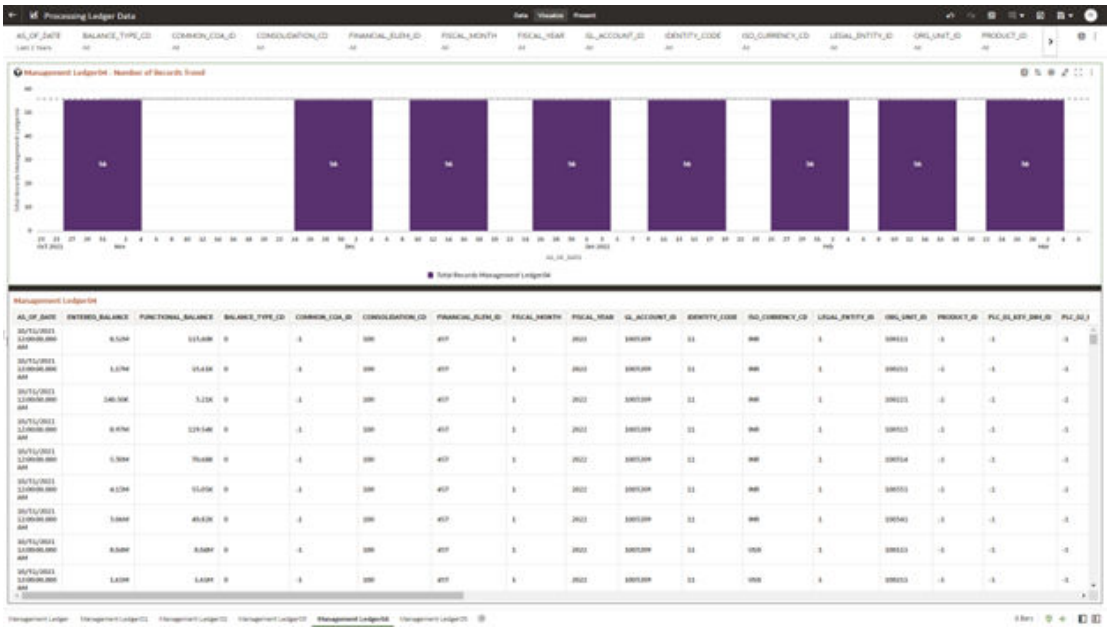
The Management Ledger04 Report provides the analysis capability on the Placeholder Management Ledger 04 Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Management Ledger04 - Number of Records Trend
  Total Records Management Ledger04 aggregated by AS_OF_DATE.
- Management Ledger04
  Granular table records at FINANCIAL_ELEM_ID level.

Figure 5-50 Processing Ledger Data – Management Ledger04



5.1.3.7.6 Management Ledger05

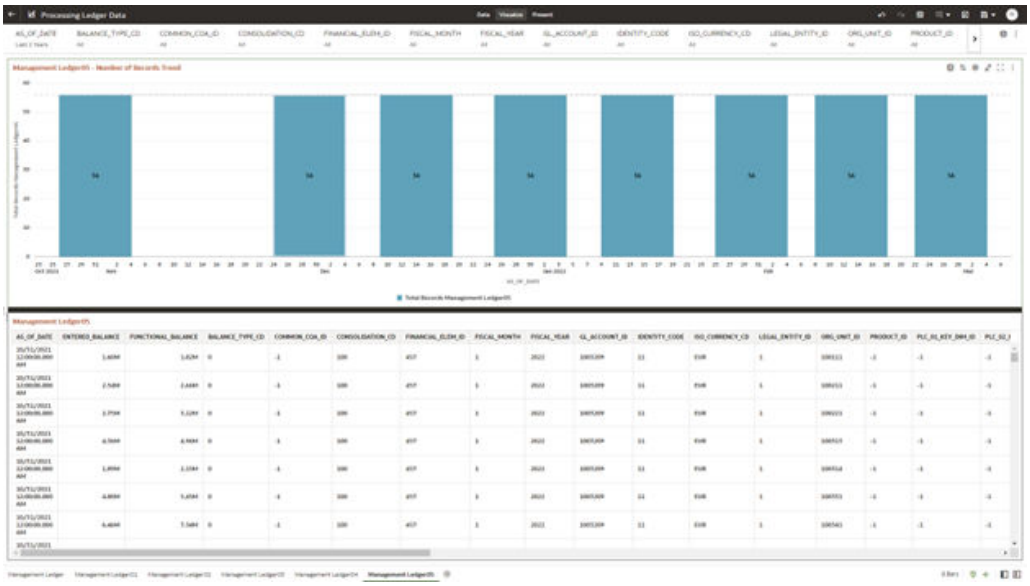
The Management Ledger05 Report provides the analysis capability on the Placeholder Management Ledger 05 Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Management Ledger05 - Number of Records Trend
  Total Records Management Ledger05 aggregated by AS_OF_DATE.
- Management Ledger05
  Granular table records at FINANCIAL_ELEM_ID level.

Figure 5-51 Processing Ledger Data – Management Ledger05



5.1.3.8 Processing Transaction Summary Data

You can use this report to perform the analysis on the Processing Area Tables related to Transaction Summary Data.

The report contains specifically the following Staging Database Objects:

Table 5-9 Staging Transaction Summary Data Reports

Report Name	Scope	Table Layer	Physical Table List	Logical Table List	Report Canvas Name
Processing Transaction Summary Data	Transaction Summary	FSI–Processing	FSI_D_ASSET_TXNS FSI_D_LIABILITY_TXNS FSI_D_FEE_BASED_SERVICE_TXNS FSI_D_OFF_BALANCE_SHEET_TXNS	Asset Transaction Summary Liability Transaction Summary Fee Based and Other Services Transaction Summary Off Balance Sheet Transaction Summary	Assets Transaction Summary Liabilities Transaction Summary Fee Based Services Transaction Summary Off Balance Sheet Transaction Summary

5.1.3.8.1 Asset Transaction Summary

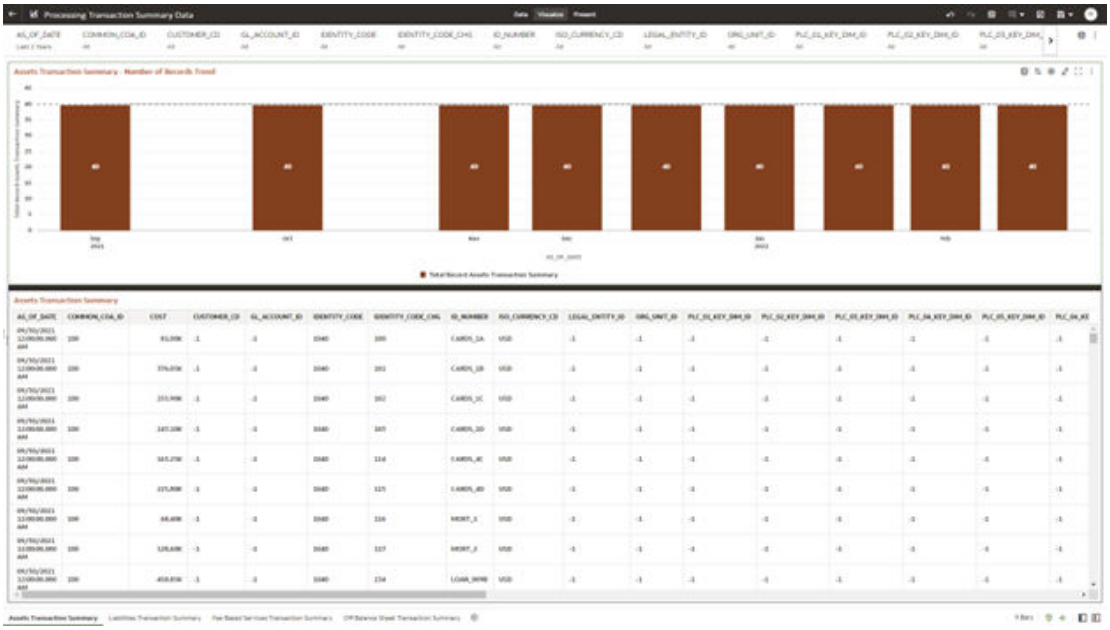
The Asset Transaction Summary Report provides the analysis capability on the Assets Transaction Summary Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Assets Transaction Summary - Number of Records Trend
  Total Record Assets Transaction Summary aggregated by AS_OF_DATE.
- Assets Transaction Summary
  Granular table records at ID_NUMBER level.

Figure 5-52 Processing Transaction Summary Data - Asset Transaction Summary



5.1.3.8.2 Liabilities Transaction Summary

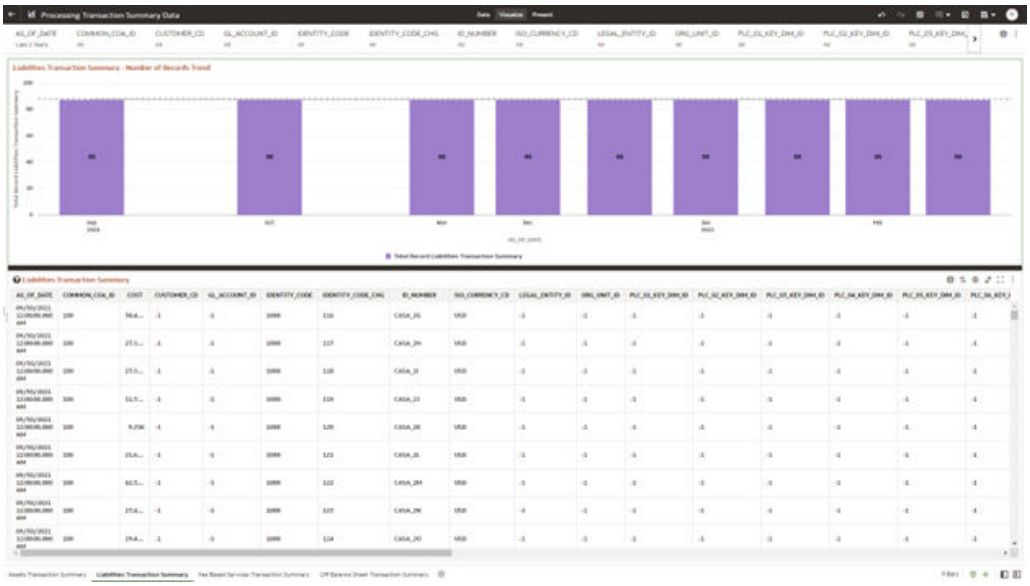
The Liabilities Transaction Summary Report provides the analysis capability on the Liability Transaction Summary Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Liabilities Transaction Summary - Number of Records Trend
  Total Record Liability Transaction Summary aggregated by AS_OF_DATE.
- Liabilities Transaction Summary
  Granular table records at ID_NUMBER level.

Figure 5-53 Processing Transaction Summary Data – Liabilities Transaction Summary



5.1.3.8.3 Fee Based Services Transaction Summary

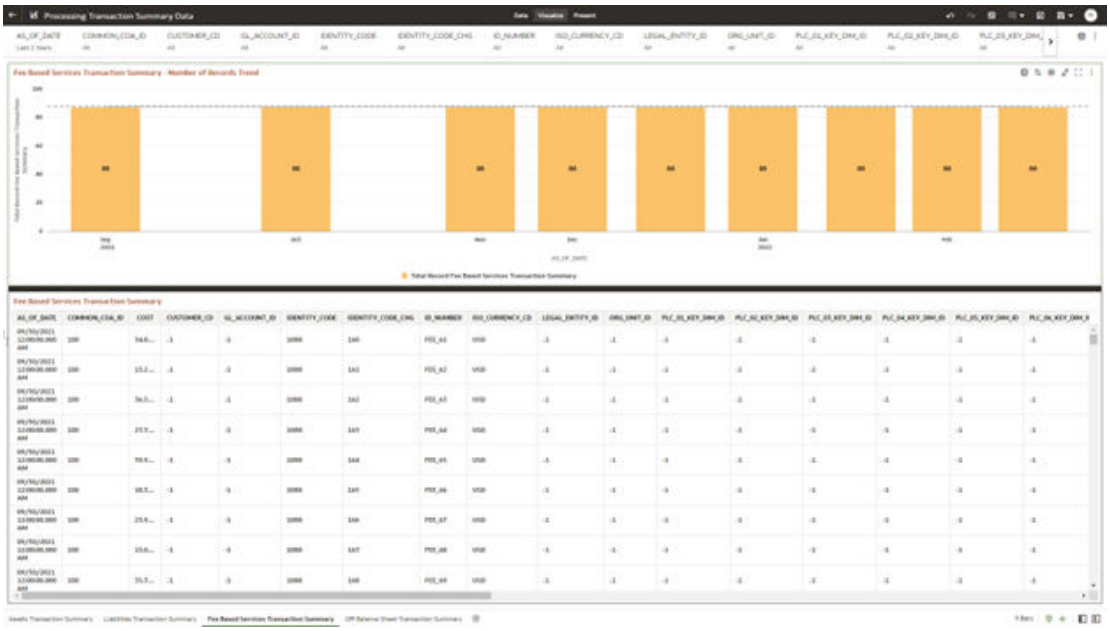
The Fee Based Services Transaction Summary Report provides the analysis capability on the Fee Based and Other Services Transaction Summary Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Fee Based Services Transaction Summary - Number of Records Trend
  Total Record Fee Based Services Transaction Summary aggregated by AS_OF_DATE.
- Fee Based Services Transaction Summary
  Granular table records at ID_NUMBER level.

Figure 5-54 Processing Transaction Summary Data – Fee Based Services Transaction Summary



5.1.3.8.4 Off Balance Sheet Transaction Summary

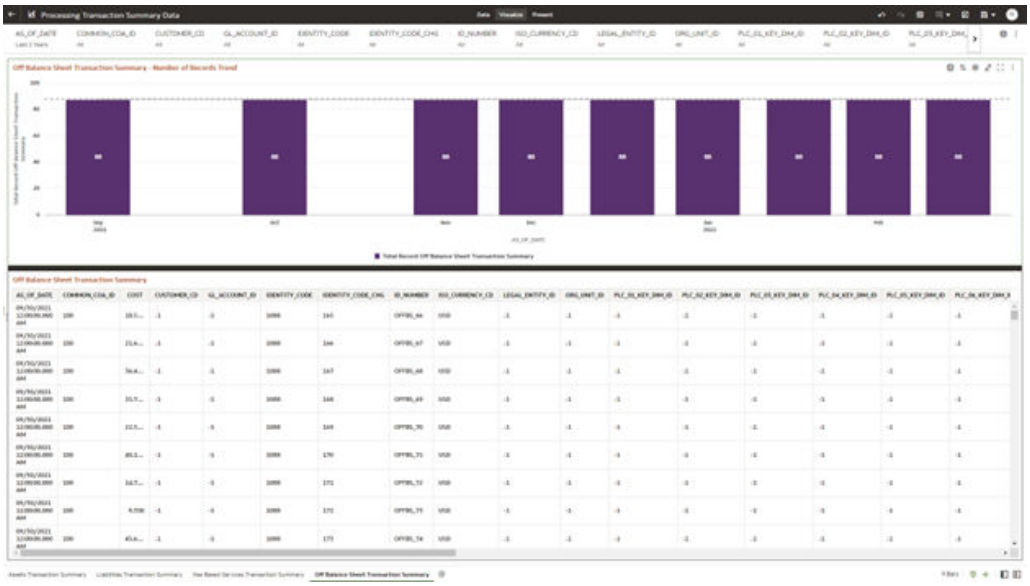
The Off Balance Sheet Transaction Summary Report provides the analysis capability on the Off Balance Sheet Transaction Summary Table.

You can use a series of Report Prompts to filter the data according to Functional Key Attributes pertaining to the Table Columns Perimeter.

The report displays the underlying data according to the following Charts' logic:

- Off Balance Sheet Transaction Summary - Number of Records Trend
  Total Record Off Balance Sheet Transaction Summary aggregated by AS_OF_DATE.
- Off Balance Sheet Transaction Summary
  Granular table records at ID_NUMBER level.

Figure 5-55 Processing Transaction Summary Data – Off Balance Sheet Transaction Summary



5.1.4 Data Insights

To access the Data Insights Report, select Analytics from the LHS Menu, and then select Data Insights.

5.1.4.1 Cash Flow Edits

The Cash Flow Edits Process allows you to verify the accuracy and check the completeness of your Instrument Table Data.

The Cash Flow Edits is arranged as a set of reports catering to analysis of the following categories:

- “Rules”
- “Process Stats”
- “Message Log”

5.1.4.2 Common Filters

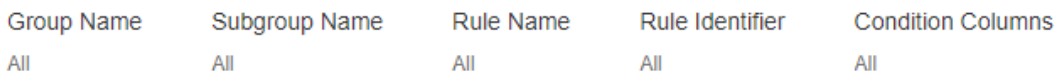
Topics:

- “Rules” Canvas Prompt Filters
- “Process Stats” Canvas Prompt Filters
- “Message Log” Canvas Prompt Filters

5.1.4.2.1 “Rules” Canvas Prompt Filters

You can use a series of Report Prompts to filter the data according to Functional Key Attributes as described below:

Figure 5-56 Canvas Prompt Filters for key Attributes

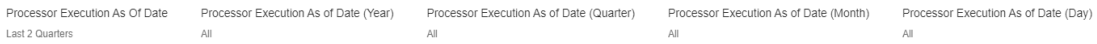


- Group Name: You can use this filter to select a specific Group value related to the available granular rules
- Subgroup Name: You can use this filter to select a specific Subgroup value related to the available granular rules
- Rule Name: You can use this filter to select a specific Rule value
- Rule Identifier: You can use this filter to select a specific Rule Identifier value
- Rule Condition Columns: You can use this filter to select a specific Condition value related to the available granular rules

5.1.4.2.2 “Process Stats” Canvas Prompt Filters

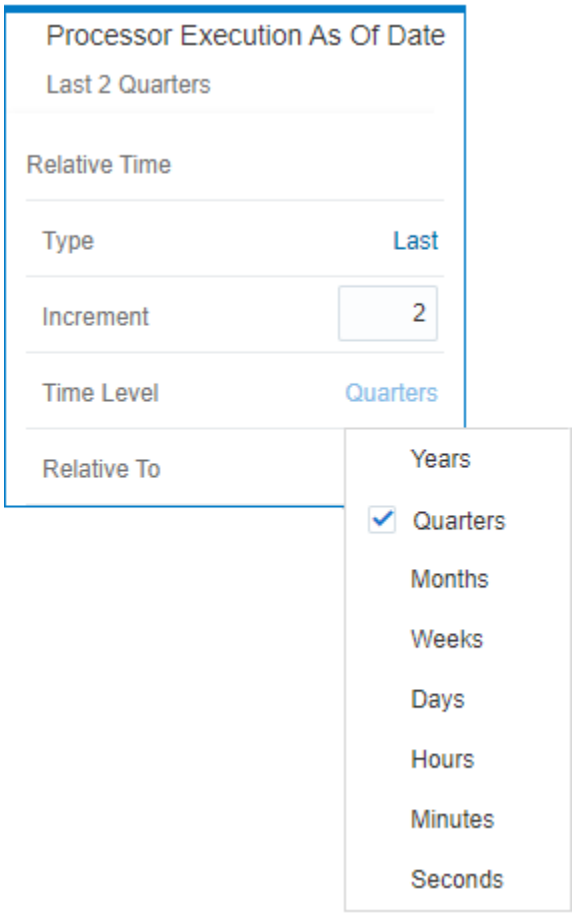
You can use a series of Report Prompts to filter the data according to Functional Key Attributes as described below:

Figure 5-57 Canvas Prompt Filters for Time Dimension



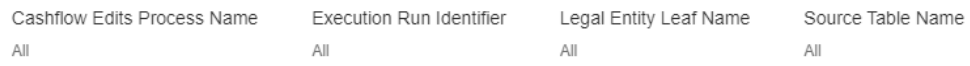
- Processor Execution As of Date: The Execution Period of the Cash Flow Edit process. You can use this filter to isolate a selected timeframe for the analysis. The following screenshot displays the possible options that this filter provides against the Time Dimension.

Figure 5-58 As of Processor Execution Date Selection



- Additional Filters for the Time Dimension as follows:
  - Processor Execution As of Date (Year)
  - Processor Execution As of Date (Quarter)
  - Processor Execution As of Date (Month)
  - Processor Execution As of Date (Day)

Figure 5-59 Canvas Prompt Filters for Standard Dimension

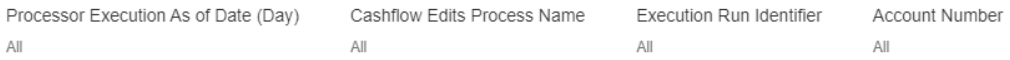


- Cashflow Edits Process Name: You can use this filter to select a specific Cashflow Edit Process value
- Execution Run Identifier: You can use this filter to select a specific Execution Run Identifier value at leaf related to the Cashflow Edits Process
- Legal Entity Leaf Name: You can use this filter to select the Legal Entity Leaf Name that is related to the Cashflow Edit Process execution
- Source Table Name: You can use this filter to select a specific Source Table value related to the to the Cashflow Edit Process execution

5.1.4.2.3 “Message Log” Canvas Prompt Filters

You can use a series of Report Prompts to filter the data according to Functional Key Attributes as described below:

Figure 5-60 Canvas Prompt Filters for Standard Dimension



- Processor Execution As of Date (Day): The Execution Period of the Cash Flow Edit process. You can use this filter to isolate a selected timeframe for the analysis
- Cashflow Edits Process Name: You can use this filter to select a specific Cashflow Edit Process value
- Execution Run Identifier: You can use this filter to select a specific Execution Run Identifier value at leaf related to the Cashflow Edits Process
- Account Number: You can use this filter to select a specific Account Number value related to the to the Cashflow Edit Process execution

5.1.4.3 Report Data Action

The Data Actions provide the capability to perform drill down analysis across the downstream report canvases. The drill down is enabled via a data action.

From “Rules” and “Process Stats” report canvases charts, you can select a combination of values, and then perform the navigation to the “message Log” report canvas.

In order to do so, with a right click on the chart selection, the data action options will appear for you to be able to navigate further as described in the following mapping:

- **Navigate to Message Log** – the Data Action will be drilling through the “Message Log” canvas.

The following screenshots show the Data Action list as well as the navigation options that appears once you right click on the desired selection.

Figure 5-61 Data Action configuration

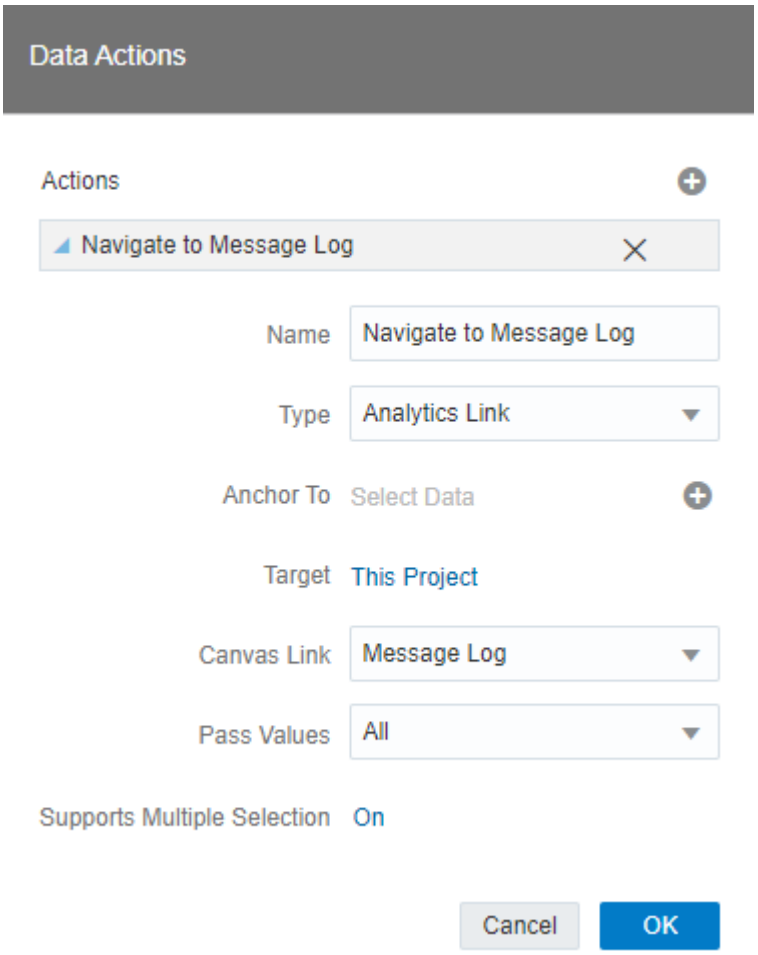
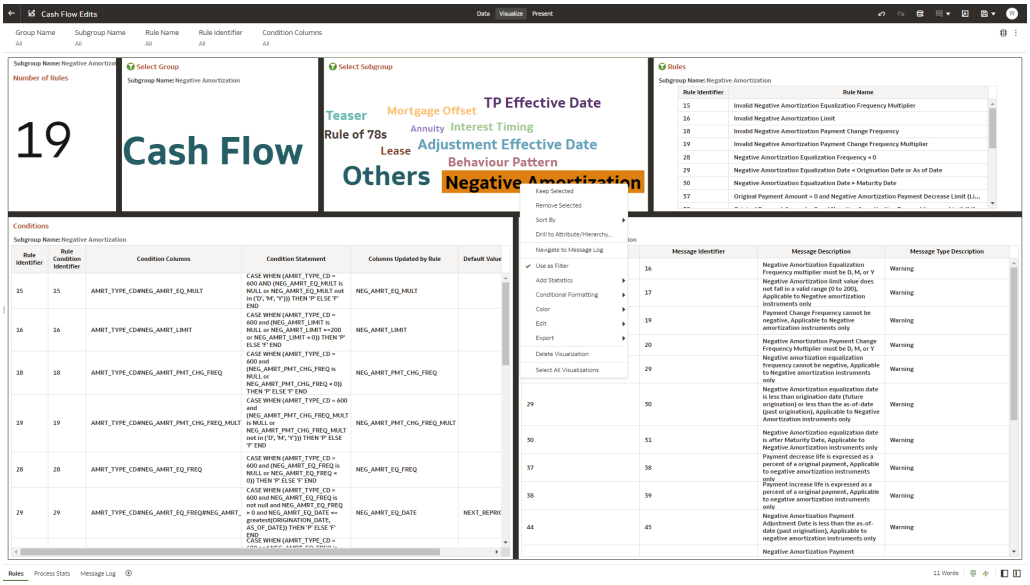


Figure 5-62 Data Action for Drill down with report Canvases



5.1.4.4 Rules

The “Rules” Report provides a view of the available Rules to be leveraged by the Cash Flow Edits processes. You can use the report to identify the list of the available rules within the Application as well as to look at their grouping and subgrouping with the granular details for Conditions and Messages.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Cash Flow Edit messages.

The report displays the underlying data according to the following Chart’ logic:

- **Number of Rules**The chart provides you with the total Number of Rules available within the Application
- **Select Group**The chart provides you with a selection capability for the desired Group of rules
- **Select Subgroup**The chart provides you with a selection capability for the desired Subgroup of rules
- **Rules**

  The chart reports the list of rules available within the Application.

  The columns displayed in the chart are the following:

  – Rule Identifier

  – Rule Name
- **Conditions**

  The chart reports the list of conditions defined for each of the rules available within the Application.

  The columns displayed in the chart are the following:

  – Rule Identifier

  – Rule Condition Identifier

  – Condition Columns

  – Condition Statements
- **Messages**

  The chart reports the list of log messages defined for each of the rules available within the Application.

  The columns displayed in the chart are the following:

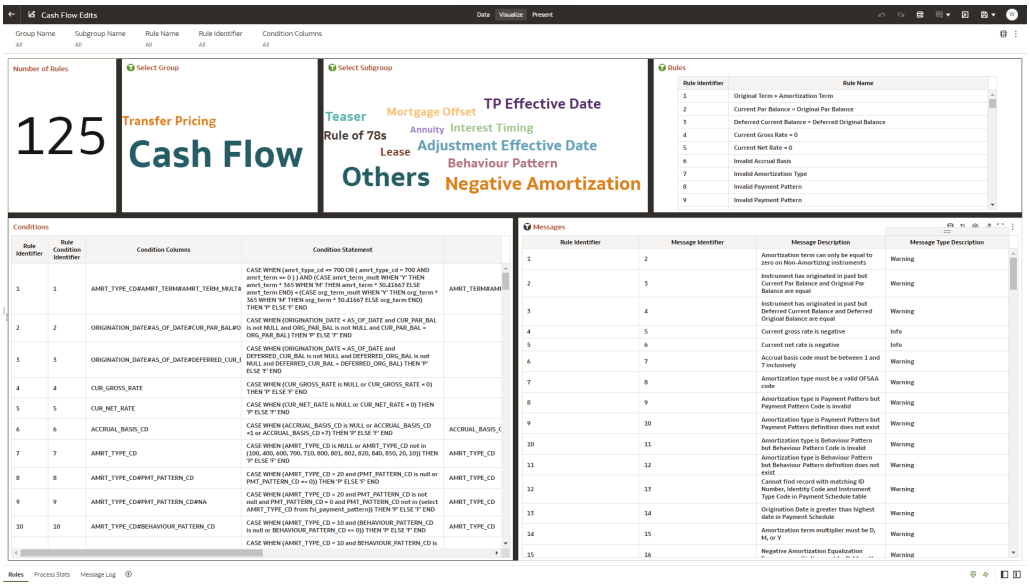
  – Rule Identifier

  – Message Identifier

  – Message Description

  – Message Type Description

Figure 5-63 "Rules" Report



5.1.4.5 Process Stats

The "Process Stats" Report provides a view of the available statistics related to the execution of the Cash Flow Edits processes. You can use the report to identify the number of errors and the aggregated details for the Cash Flow Edits executed out of the underlying Instrument table account data.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Cash Flow Edit messages.

The report displays the underlying data according to the following Chart' logic:

- **Cashflow Edits found**
  The chart reports the trend analysis of the Number of Errors for each Cash Flow Edit execution with respect to Processor Execution As of Date and the Message Type received during the executions.

  The columns displayed in the chart are the following:

  – Processor Execution As of Date (Day)
  – Cashflow Edits Process Name
  – Execution Run Identifier
  – Message Type Description
  – Number of Errors

- **Processing Time (in Mins)**
  The chart reports the trend analysis of the Processing Time for each Cash Flow Edit execution with respect to Processor Execution As of Date.

  The columns displayed in the chart are the following:

  – Processor Execution As of Date (Day)
  – Cashflow Edits Process Name

  - Execution Run Identifier
  - Processor Execution Time In Minutes

- **Number of Errors**
  The chart reports the trend analysis of the Number of Errors for each Cash Flow Edit execution with respect to Processor Execution As of Date.

  The columns displayed in the chart are the following:

  - Processor Execution As of Date (Day)
  - Cashflow Edits Process Name
  - Execution Run Identifier
  - Number of Errors

- **Number of Errors by Source Table Name**
  The chart reports the trend analysis of the Number of Errors for each Cash Flow Edit execution with respect to Processor Execution As of Date and the Source Table Name where the errors have been identified.

  The columns displayed in the chart are the following:

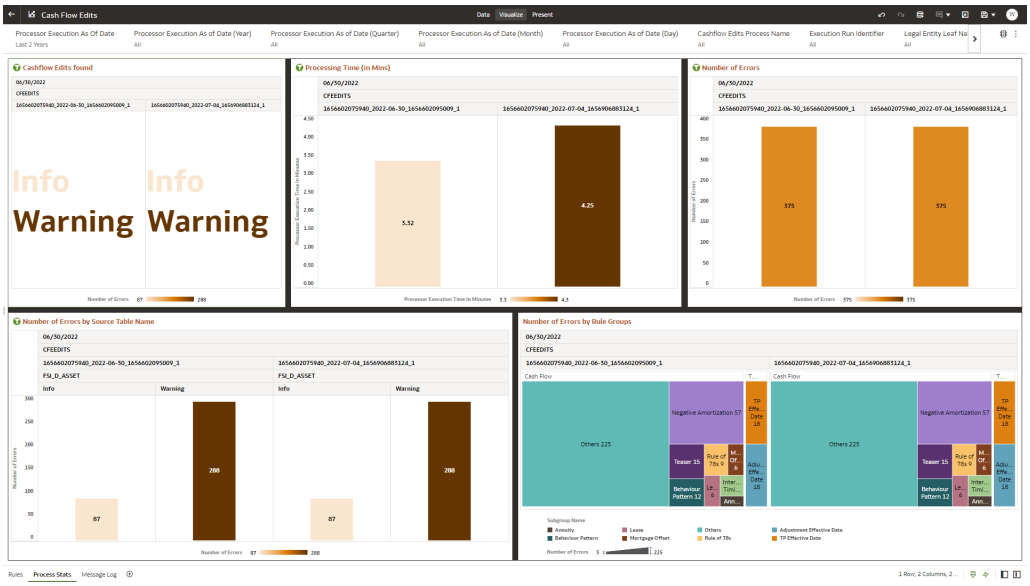
  - Processor Execution As of Date (Day)
  - Cashflow Edits Process Name
  - Execution Run Identifier
  - Source Table Name
  - Message Type Description
  - Number of Errors

- **Number of Errors by Rule Groups**
  The chart reports the trend analysis of the Number of Errors for each Cash Flow Edit execution with respect to Processor Execution As of Date and the Rule Group/Subgroup.

  The columns displayed in the chart are the following:

  - Processor Execution As of Date (Day)
  - Cashflow Edits Process Name
  - Execution Run Identifier
  - Group Name
  - Subgroup Name
  - Number of Errors

Figure 5-64 “Process Stats” Report



5.1.4.6 Message Log

The “Message Log” Report provides a view of the underlying Cash Flow Edits messages retrieved during the Cash Flow Edit Process execution, and the available granularity is at Customer Accounts level.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Cash Flow Edit messages.

The report displays the underlying data according to the following Chart’ logic:

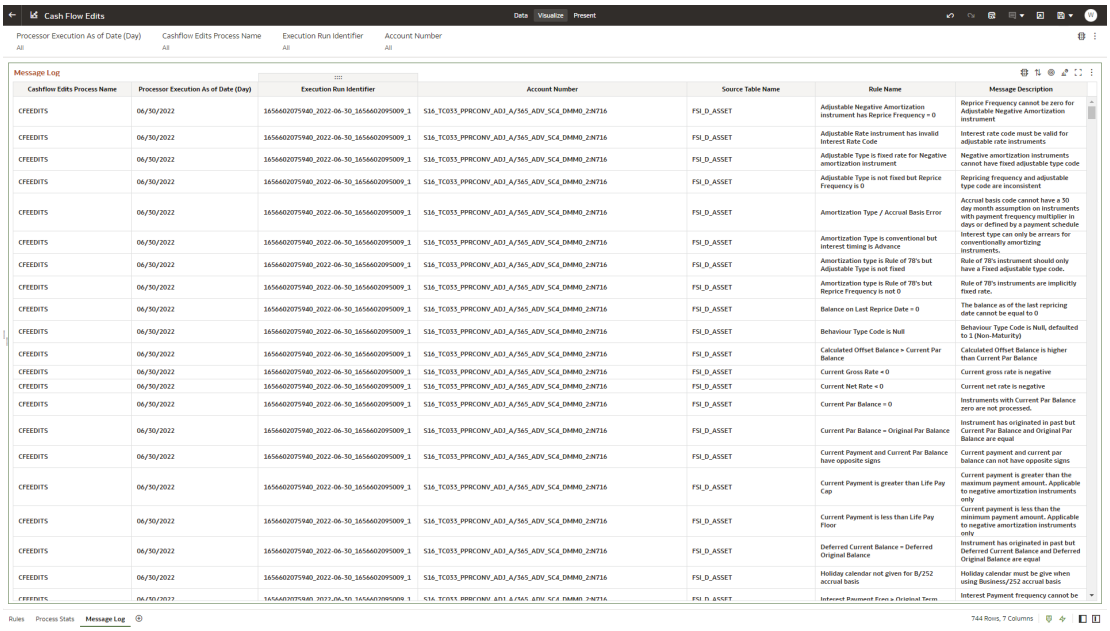
- Message Log

  The tabular report displays all the message details related to the execution of the Cash Flow Edit process, including information related to the Customer Account details.

  Following the granular elements available for this table chart:

  – "Cashflow Edits Process Name", "Processor Execution As of Date (Day)", "Execution Run Identifier", "Account Number", "Source Table Name", "Rule Name" and "Message Description".

Figure 5-65 "Message Log" Report



5.1.5 Processed Data Insights

To access the Processed Data Insights Reports, select **Analytics** from the LHS Menu, and then select **Processed Data Insights**.

- Interest Rate Risk
- Liquidity Rate Risk
- Financial Results

5.1.5.1 Interest Rate Risk

Interest Rate Risk is the potential for losses that can be triggered by a move in the interest rates. If interest rates rise, for instance, the value of a bond or other fixed-income investment in the secondary market will decline.

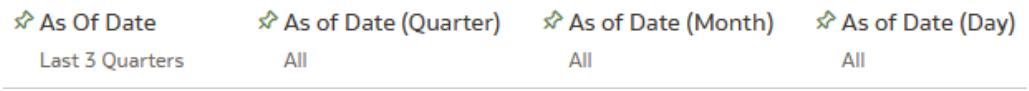
The Interest Rate Risk dashboard is arranged as a set of reports catering to analysis of the following categories:

- Interest Rate Risk Gap
- Interest Rate Risk Runoff
- Interest Rate Rate Risk Rates and Term

5.1.5.1.1 Common Filters

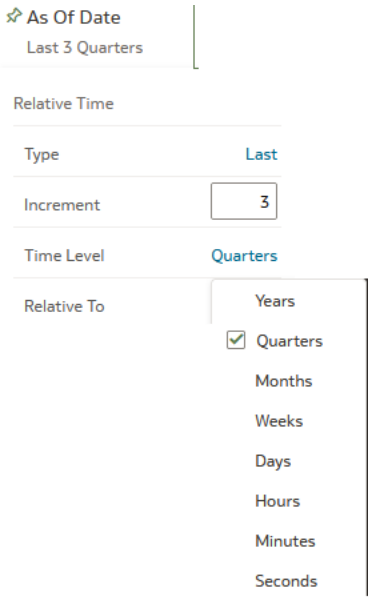
You can use a series of Report Prompts to filter the data according to Functional Key Attributes as described below:

Figure 5-66 Canvas Prompt Filters for Time Dimension



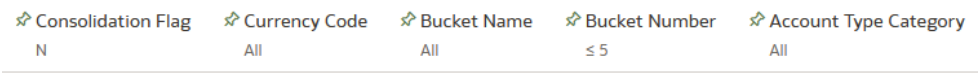
- **As of Date:** The Execution Period for the output results. You can use this filter to isolate a selected timeframe for the analysis. The following screenshot displays the possible options that this filter provides against the Time Dimension.

Figure 5-67 As of Date Selection



- Additional Filters for the **Time Dimension** as follows:
  - As of Date (Quarter)
  - As of Date (Month)
  - As of Date (Day)

Figure 5-68 Canvas Prompt Filters for Interest Rate Risk Output Process execution data



- **Consolidation Flag:** You can use this filter to select a specific Consolidation Flag to be applied to the Interest Rate Risk Process Execution Data. The Default value of this filter is set to N.
- **Currency Code:** You can use this filter to select a specific Currency Name to be applied to the Interest Rate Risk Process Execution Data.
- **Bucket Name:** You can use this filter to select a specific Bucket Name to be applied to the Interest Rate Risk Process Execution Data. Bucket Name is a

concatenation of Bucket number along with Bucket Start date and Bucket End Date.

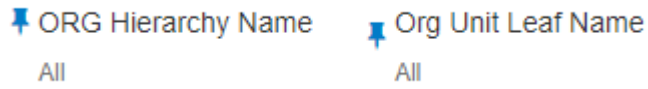
- **Bucket Number:** You can use this filter to select a specific Bucket Number to be applied to the Interest Rate Risk Process Execution Data. Bucket Number is a range filter, the default range for this filter is ≤ 5.
- **Account Type Category:** You can use this filter to select a specific Account Type Category to be applied to the Interest Rate Risk Process Execution Data.

Figure 5-69 Canvas Prompt Filters for Legal Entity key processing dimension



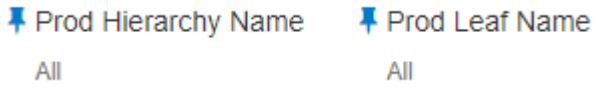
- **LE Hierarchy Name:** Select the Legal Entity hierarchy that you want to use to anayse the reports.
- **Legal Entity Leaf Name:** From the selected Legal Entity hierarchy, you can use this filter to select the Legal Entity Member to view reports.

Figure 5-70 Canvas Prompt Filters for Org Unit key processing dimension



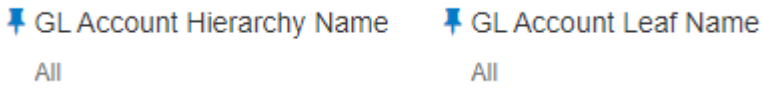
- **Org Hierarchy Name:** Select the Organization Unit hierarchy that you want to use to analyze the reports.
- **Org Unit Leaf Name:** From the selected Organization Unit hierarchy, you can use this filter to select the Organization Unit Member to view reports.

Figure 5-71 Canvas Prompt Filters for Product key processing dimension



- **Prod Hierarchy Name:** Select the Product hierarchy that you want to use to analyze the reports.
- **Prod Leaf Name:** From the selected Product hierarchy, you can use this filter to select the Product Member to view reports.

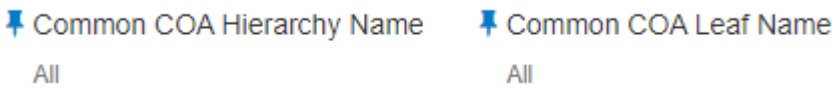
Figure 5-72 Canvas Prompt Filters for GL Account key processing dimension



- **GL Account Hierarchy Name:** Select the General Ledger (GL) hierarchy that you want to use to analyze the reports.

- **GL Account Leaf Name:** From the selected GL hierarchy, you can use this filter to select the GL Member to view reports.

Figure 5-73 Canvas Prompt Filters for Common COA key processing dimension



- **Common COA Hierarchy Name:** Select the Common Chart of Accounts (COA) hierarchy that you want to use to analyze the reports.
- **Common COA Leaf Name:** From the selected COA hierarchy, you can use this filter to select the Common COA Member to view reports.

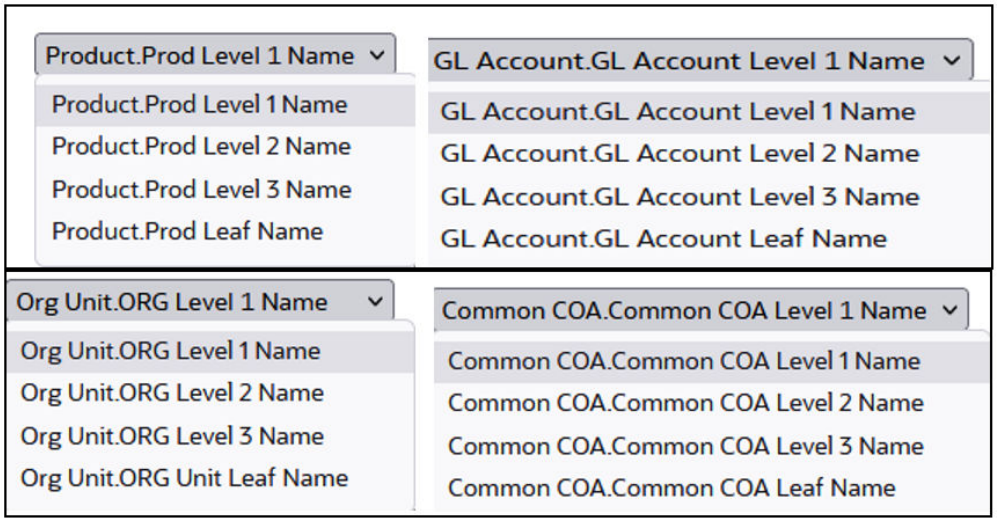
5.1.5.1.2 Report Hierarchies

The Report provides you with the roll-up and drill down capability, leveraging the available levels for the following Hierarchies:

- Product Hierarchy
- GL Account Hierarchy
- Organization Unit Entity Hierarchy
- Common COA Hierarchy

Following screenshot displays the available selections for the aforementioned hierarchies.

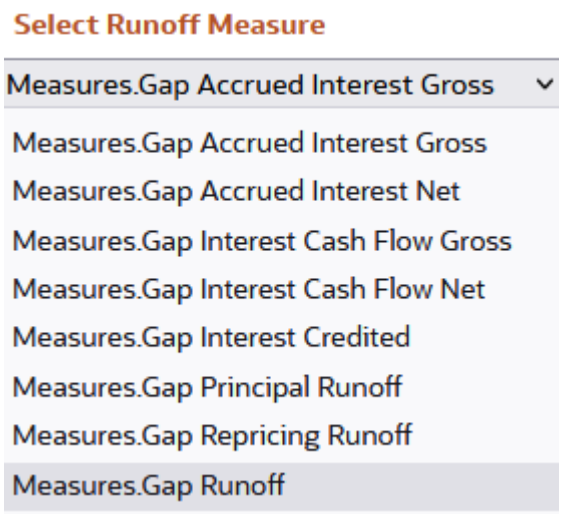
Figure 5-74 Cashflow Output key processing dimension hierarchies



5.1.5.1.3 In canvas Variable Prompts

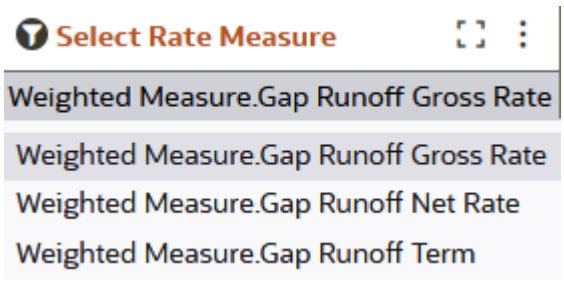
- **Select Runoff Measurement:** This is the variable prompt to select the desired Runoff measurement to be applied to the “Interest Rate Risk Runoff” report canvas charts.
  The following elements are available for selection:
  - “Gap Accrued Interest Gross”, ”Gap Accrued Interest Net”, ”Gap Interest Cash Flow Gross”, “Gap Interest Cash Flow Net”, ”Gap Interest Credited”, ”Gap Principal Runoff”, “Gap Repricing Runoff”, “Gap Runoff”.

Figure 5-75 Select Runoff measurement list



- **Select Rate & Term Measurement:** This is the variable prompt to select the desired Rate measurement to be applied to the “Interest Rate Rate Risk Rates & Term” report canvas charts.
  The following elements are available for selection:
  - “Gap Runoff Gross Rate”, “Gap Runoff Net Rate”, “Gap Runoff Term”.

Figure 5-76 Select Rate andTerm measurement list



5.1.5.1.4 Interest Rate Risk Gap

The “Interest Rate Risk Gap” report is a statement of Risk Sensitive Assets, Risk Sensitive Liabilities and difference between the two.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Interest Rate Risk Output results.

The report displays the underlying data according to the following Chart' logic:

- **Select Process Name**
  The List box filter provides you with a selection capability on the desired Process Name utilized by the Interest Rate Risk Output processes. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Execution Run Identifier**
  The List Box filter provides you with a selection capability on the desired Execution Run Identifier utilized by the Interest Rate Risk Output processes. This filter is dependent on the values selected in the Process Name filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Scenario**
  The List box filter provides you with a selection capability on the desired Scenario utilized by the Interest Rate Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Dynamic Start Date**
  The List box filter provides you with a selection capability on the desired Dynamic Start Date utilized by the Interest Rate Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier, and Scenario filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Net Gap Runoff**
  The chart reports the analysis of the Net Gap Runoff Value depending on the Account type Category processed for each Bucket with respect to As of Date and Dynamic Start Date.

  The columns displayed in the chart are the following:

  - Currency Code
  - Bucket Name
  - As Of Date (Day)
  - Account Type Category
  - Risk Sensitive Asset
  - Risk Sensitive Liability
  - Net Gap
  - Cumulative Net Gap
- **Net Repricing Gap Runoff**
  The chart reports the analysis of the Net Repricing Gap Runoff Value depending on the Account type Category processed for each Bucket with respect to As of Date and Dynamic Start Date.

  The columns displayed in the chart are the following:

  - Currency Code
  - Bucket Name

- As Of Date (Day)
- Account Type Category
- Repriced Asset
- Repriced Liability
- Net Gap Repricing Runoff
- Cumulative Net Gap Repricing Runoff

- **Net Principal Gap Runoff**

  The chart reports the analysis of the Net Principal Gap Runoff Value depending on the Account type Category processed for each Bucket with respect to As of Date and Dynamic Start Date.

  The columns displayed in the chart are the following:

  - Currency Code
  - Bucket Name
  - As Of Date (Day)
  - Account Type Category
  - Risk Sensitive Asset (Principal)
  - Risk Sensitive Liability (Principal)
  - Net Gap Principal Runoff
  - Cumulative Net Gap Principal Runoff

Figure 5-77 Interest Rate Risk GAP Report



5.1.5.1.5 Interest Rate Risk Runoff

The “Interest Rate Risk Runoff” Report provides insight into the amount of assets and liability getting repriced in each time bucket. While fixed rate instruments runoff as per contractual maturity, adjustable rate instruments are assumed to runoff on the Next Reprice Date.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Interest Rate Risk Output results.

The report displays the underlying data according to the following Chart’ logic:

- **Select Process Name**
  The List box filter provides you with a selection capability on the desired Process Name utilized by the Interest Rate Risk Output processes.
- **Select Execution Run Identifier**
  The List box filter provides you with a selection capability on the desired Execution Run Identifier utilized by the Interest Rate Risk Output processes. This filter is dependent on the values selected in the Process Name filter.
- **Select Scenario**

The List box filter provides you with a selection capability on the desired Scenario utilized by the Interest Rate Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier filter.

- **Select Dynamic Start Date**
  The List box filter provides you with a selection capability on the desired Dynamic Start Date utilized by the Interest Rate Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier, and Scenario filter.
- **Select Runoff Measure**
  The chart provides you with a selection capability on the desired Interest Rate Risk Runoff measurement.
- **Select Org Unit Hierarchy**
  The chart provides you with a selection capability for the desired Org Unit Hierarchical level.
- **Select Product Hierarchy**
  The chart provides you with a selection capability for the desired Product Hierarchical level.
- **Select GL Account Hierarchy**
  The chart provides you with a selection capability for the desired GL Account Hierarchical level.
- **Select COA Hierarchy**
  The chart provides you with a selection capability for the desired Common COA Hierarchical level.
- **Selected Runoff Measure by Product**
  The table and chart reports the generated Interest Rate Risk output Runoff Measure by Product for each Interest Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date
  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Product Hierarchy
  - Runoff Measure
- **Selected Runoff Measure by Org Unit**
  The table and chart reports the generated Interest Rate Risk output Runoff Measure by Org Unit for each Interest Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date
  - Bucket Name
  - Account Type Category

  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Org Unit Hierarchy
  - Runoff Measure

- **Selected Runoff Measure by GL Account**
  The table and chart reports the generated Interest Rate Risk output Runoff Measure by GL Account for each Interest Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date
  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - GL Account Hierarchy
  - Runoff Measure

- **Selected Runoff Measure by Common COA**
  The chart reports the generated Interest Rate Risk Output Runoff Measure by Product for each Interest Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date
  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Common COA Hierarchy
  - Runoff Measure

Figure 5-78 Interest Rate Risk Runoff Report



5.1.5.1.6 Interest Rate Risk Rates & Term

The “Interest Rate Risk Runoff” Report shows interest rate and term related measures that get calculated as part of Interest Rate Risk process.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Interest Rate Risk Output results.

The report displays the underlying data according to the following Chart’ logic:

- **Select Process Name**
  The List box filter provides you with a selection capability on the desired Process Name utilized by the Interest Rate Risk Output processes.
- **Select Execution Run Identifier**
  The List box filter provides you with a selection capability on the desired Execution Run Identifier utilized by the Interest Rate Risk Output processes. This filter is dependent on the values selected in the Process Name filter.

- **Select Scenario**
  The List box filter provides you with a selection capability on the desired Scenario utilized by the Interest Rate Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier filter.
- **Select Dynamic Start Date**
  The List box filter provides you with a selection capability on the desired Dynamic Start Date utilized by the Interest Rate Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier, and Scenario filter.
- **Select Runoff Measure**
  The chart provides you with a selection capability on the desired Interest Rate Risk Runoff measurement.
- **Select Org Unit Hierarchy**
  The chart provides you with a selection capability for the desired Org Unit Hierarchical level.
- **Select Product Hierarchy**
  The chart provides you with a selection capability for the desired Product Hierarchical level.
- **Select GL Account Hierarchy**
  The chart provides you with a selection capability for the desired GL Account Hierarchical level.
- **Select COA Hierarchy**
  The chart provides you with a selection capability for the desired Common COA Hierarchical level.
- **Selected Rate Measure by Product**
  The table and chart reports the generated Interest Rate Risk output Rate Measure by Product for each Interest Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date
  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Product Hierarchy
  - Rate Measure
- **Selected Rate Measure by Org Unit**
  The table and chart reports the generated Interest Rate Risk output Rate Measure by Org Unit for each Interest Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date
  - Bucket Name

  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Org Unit Hierarchy
  - Rate Measure

- **Selected Rate Measure by GL Account**
  The table and chart reports the generated Interest Rate Risk output Rate Measure by GL Account for each Interest Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date
  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - GL Account Hierarchy
  - Rate Measure

- **Selected Rate Measure by Common COA**
  The chart reports the generated Interest Rate Risk output Rate Measure by Product for each Interest Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date
  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Common COA Hierarchy
  - Rate Measure

Figure 5-79 Interest Rate Risk Rates and Term Report



5.1.5.2 Liquidity Rate Risk

Liquidity risk is defined as the risk of incurring losses resulting from the inability to meet payment obligations in a timely manner when they become due or from being unable to do so at a sustainable cost.

The Liquidity Rate Risk dashboard is arranged as a set of reports catering to analysis of the following categories:

- Liquidity Rate Risk Gap
- Liquidity Rate Risk Runoff
- Liquidity Rate Risk Rates & Term

5.1.5.2.1 Common filters

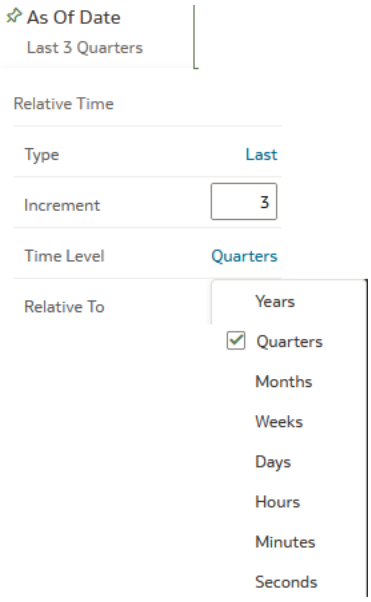
You can use a series of Report Prompts to filter the data according to Functional Key Attributes as described below:

Figure 5-80 Canvas Prompt Filters for Time Dimension



- **As of Date:** The Execution Period for the output results. You can use this filter to isolate a selected timeframe for the analysis. The following screenshot displays the possible options that this filter provides against the Time Dimension.

Figure 5-81 As of Date Selection



- Additional Filters for the Time Dimension as follows:
  - As of Date (Quarter)
  - As of Date (Month)
  - As of Date (Day)

Figure 5-82 Canvas Prompt Filters for Liquidity Rate Risk Output Process execution data



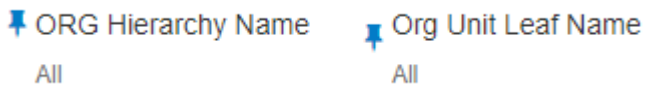
- **Consolidation Flag:** You can use this filter to select a specific Consolidation Flag Name to be applied to the Liquidity Rate Risk Process execution data. The Default value of this filter is set to N.
- **Currency Code:** You can use this filter to select a specific Currency Name to be applied to the Liquidity Rate Risk Process execution data.
- **Bucket Name:** You can use this filter to select a specific Bucket Name to be applied to the Liquidity Rate Risk Process execution data. Bucket Name is a concatenation of Bucket number along with Bucket Start date and Bucket End date.
- **Bucket Number:** You can use this filter to select a specific Bucket Number to be applied to the Liquidity Rate Risk Process execution data. Bucket Number is a range filter, the default range for this filter is ≤ 5.
- **Account Type Category:** You can use this filter to select a specific Account Type Category to be applied to the Liquidity Rate Risk Process execution data.

Figure 5-83 Canvas Prompt Filters for Legal Entity key processing dimension



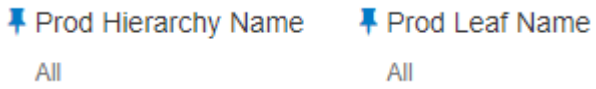
- **LE Hierarchy Name:** Select the Legal Entity hierarchy that you want to use to analyze the reports.
- **Legal Entity Leaf Name:** From the selected Legal Entity hierarchy, you can use this filter to select the Legal Entity Member to view reports.

Figure 5-84 Canvas Prompt Filters for Org Unit key processing dimension



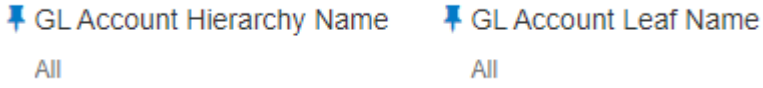
- **Org Hierarchy Name:** Select the Organization Unit hierarchy that you want to use to analyze the reports.
- **Org Unit Leaf Name:** From the selected Organization Unit hierarchy, you can use this filter to select the Organization Unit Member to view reports.

Figure 5-85 Canvas Prompt Filters for Product key processing dimension



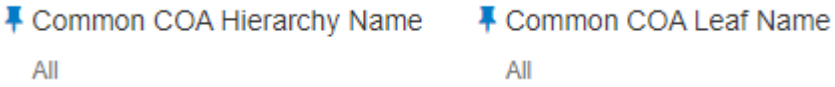
- **Prod Hierarchy Name:** Select the Product hierarchy that you want to use to analyze the reports.
- **Prod Leaf Name:** From the selected Product hierarchy, you can use this filter to select the Product Member to view reports.

Figure 5-86 Canvas Prompt Filters for GL Account key processing dimension



- **GL Account Hierarchy Name:** Select the General Ledger (GL) hierarchy that you want to use to analyze the reports.
- **GL Account Leaf Name:** From the selected GL hierarchy, you can use this filter to select the GL Member to view reports.

Figure 5-87 Canvas Prompt Filters for Common COA key processing dimension



- **Common COA Hierarchy Name:** Select the Common Chart of Accounts (COA) hierarchy that you want to use to analyze the reports.
- **Common COA Leaf Name:** From the selected COA hierarchy, you can use this filter to select the Common COA Member to view reports.

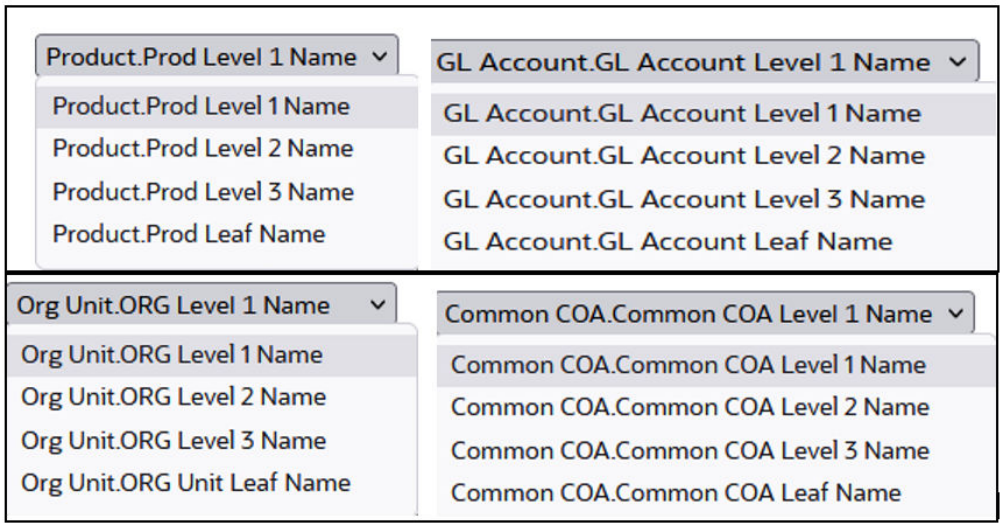
5.1.5.2.2 Report Hierarchies

The Report provides you with the roll-up and drill down capability on the Liquidity Rate Risk Output Process execution data, leveraging the available levels for the following Hierarchies:

- Product Hierarchy
- GL Account Hierarchy
- Org Unit Entity Hierarchy
- Common COA Hierarchy

Following screenshot displays the available selections for the aforementioned hierarchies.

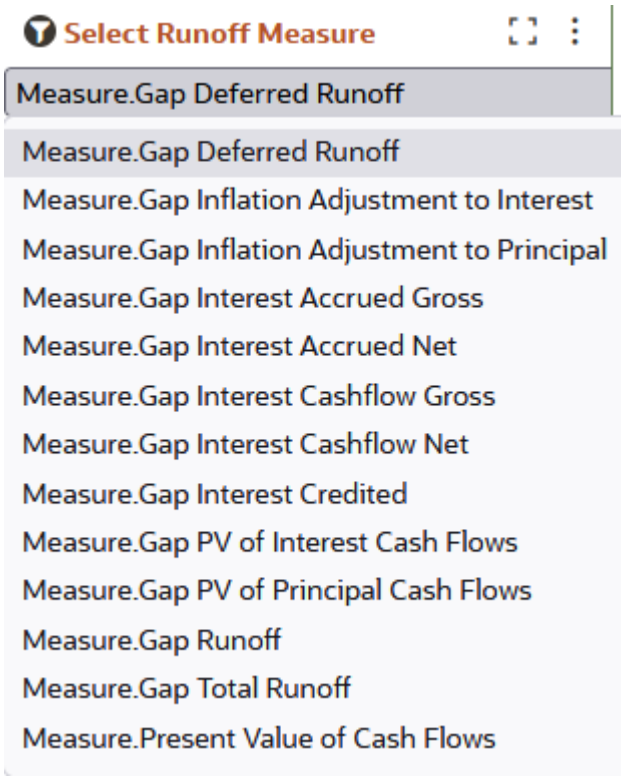
Figure 5-88 Liquidity Rate Risk Output key processing dimension hierarchies



5.1.5.2.3 In canvas Variable Prompts

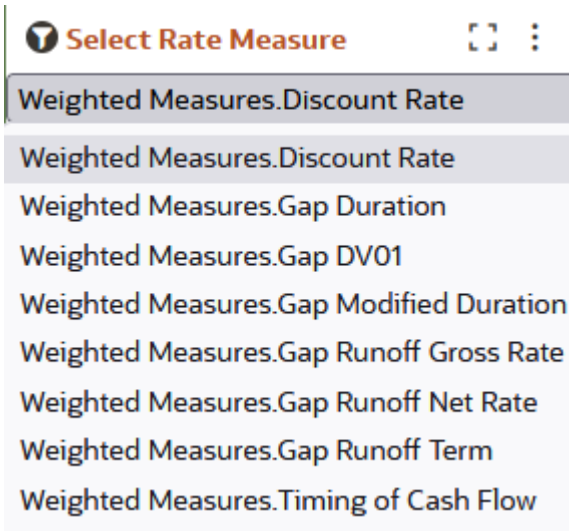
- **Select Runoff measurement:** This is the variable prompt to select the desired Runoff Measurement to be applied to the “Liquidity Rate Risk Runoff” Report canvas charts.
  The following elements are available for selection:
  - “Gap Deferred Runoff”, “Gap Inflation Adjustment to Interest”, “Gap Inflation Adjustment to Principal”, “Gap Interest Accrued Gross”, “Gap Interest Accrued Net”, “Gap Interest Cashflow Gross”, “Gap Interest Cashflow Net”, “Gap Interest Credited”, “Gap PV of Interest Cash Flows”, “Gap PV of Principapl Cash Flows”, “Gap Runoff”, “Gap Total Runoff”, “Present Value of Cash Flows”.

Figure 5-89 Select Runoff measurement list



- **Select Rate & Term measurement:** This is the variable prompt to select the desired Rate measurement to be applied to the “Liquidity Rate Rate Risk Rates & Term” Report canvas charts.
  The following elements are available for selection:
  - “Discount Rate”, “Gap Duration”, “Gap Dv01”, “Gap Modified Duration”, “Gap Runoff Gross Rate”, “Gap Runoff Net Rate”, “Gap Runoff Term”, “Timing of Cash Flow”.

Figure 5-90 Select Rate and Term measurement list



5.1.5.2.4 Liquidity Rate Risk Gap

The “Liquidity Rate Risk Gap” Report is a statement of mismatch between inflows and outflows in each time bucket .

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Liquidity Rate Risk Output results.

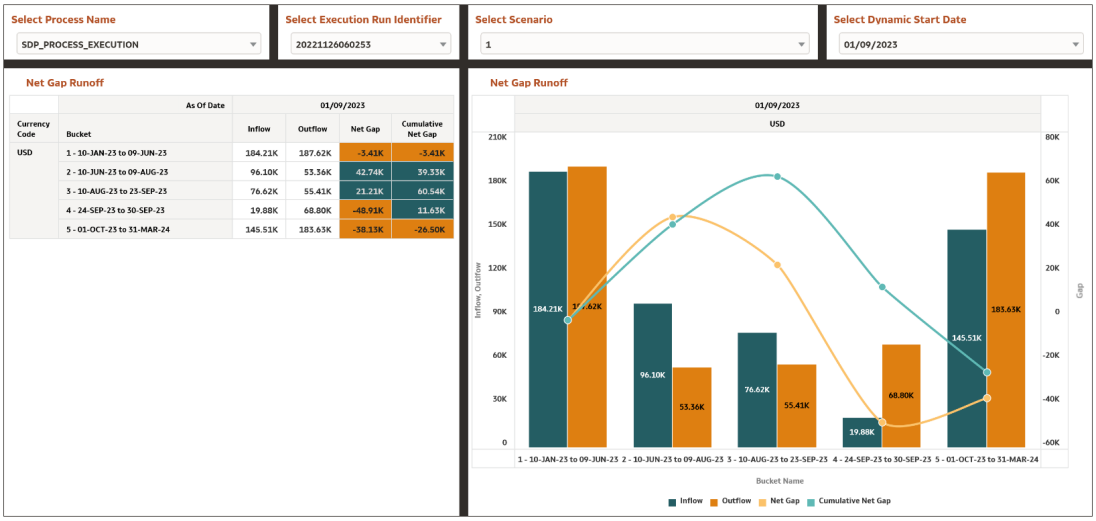
The report displays the underlying data according to the following Chart’ logic:

- **Select Process Name**
  The List box filter provides you with a selection capability on the desired Process Name utilized by the Liquidity Rate Risk Output processes. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Execution Run Identifier**
  The List box filter provides you with a selection capability on the desired Execution Run Identifier utilized by the Liquidity Rate Risk Output processes. This filter is dependent on the values selected in the Process Name filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Scenario**
  The List box filter provides you with a selection capability on the desired Scenario utilized by the Liquidity Rate Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Dynamic Start Date**
  The List box filter provides you with a selection capability on the desired Dynamic Start Date utilized by the Liquidity Rate Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier, and Scenario filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Net Gap Runoff**
  The chart reports the analysis of the Net Gap Runoff Value depending on the Account type Category processed for each Bucket with respect to As of Date and Dynamic Start Date.

  The columns displayed in the chart are the following:

  - Currency Code
  - Bucket Name
  - As Of Date (Day)
  - Account Type Category
  - Inflow
  - Outflow
  - Net Gap
  - Cumulative Net Gap

Figure 5-91 Liquidity Rate Risk GAP Report



5.1.5.2.5 Liquidity Rate Risk Runoff

The “Liquidity Rate Risk Runoff” Report provides insight into the various kinds of projected runoff that are expected from the balance sheet.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Liquidity Rate Risk Output results.

The report displays the underlying data according to the following Chart’ logic:

- **Select Process Name**
  The List box filter provides you with a selection capability on the desired Process Name utilized by the Liquidity Rate Risk Output processes.
- **Select Execution Run Identifier**
  The List box filter provides you with a selection capability on the desired Execution Run Identifier utilized by the Liquidity Rate Risk Output processes. This filter is dependent on the values selected in the Process Name filter.
- **Select Scenario**
  The List box filter provides you with a selection capability on the desired Scenario utilized by the Liquidity Rate Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier filter.
- **Select Dynamic Start Date**
  The List box filter provides you with a selection capability on the desired Dynamic Start Date utilized by the Liquidity Rate Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier, and Scenario filter.
- **Select Runoff Measure**
  The chart provides you with a selection capability on the desired Liquidity Rate Risk Runoff measurement.
- **Select Org Unit Hierarchy**
  The chart provides you with a selection capability for the desired Org Unit Hierarchical level.
- **Select Product Hierarchy**

The chart provides you with a selection capability for the desired Product Hierarchical level.

- **Select GL Account Hierarchy**
  The chart provides you with a selection capability for the desired GL Account Hierarchical level.
- **Select COA Hierarchy**
  The chart provides you with a selection capability for the desired Common COA Hierarchical level.
- **Selected Runoff Measure by Product**
  The table and chart reports the generated Interest Rate Risk output Runoff Measure by Product for each Liquidity Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date
  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Product Hierarchy
  - Runoff Measure
- **Selected Runoff Measure by Org Unit**
  The table and chart reports the generated Interest Rate Risk output Runoff Measure by Org Unit for each Liquidity Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date
  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Org Unit Hierarchy
  - Runoff Measure
- **Selected Runoff Measure by GL Account**
  The table and chart reports the generated Interest Rate Risk output Runoff Measure by GL Account for each Liquidity Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date

  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - GL Account Hierarchy
  - Runoff Measure

- **Selected Runoff Measure by Common COA**
  The chart reports the generated Interest Rate Risk output Runoff Measure by Product for each Liquidity Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date
  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Common COA Hierarchy
  - Runoff Measure

Figure 5-92 Liquidity Rate Risk Runoff Report



5.1.5.2.6 Liquidity Rate Risk Rates & Term

The “Liquidity Rate Risk Runoff” Report shows interest rate and term related measures that get calculated as part of Liquidity Risk process.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Liquidity Rate Risk Output results.

The report displays the underlying data according to the following Chart’ logic:

- **Select Process Name**
  The List box filter provides you with a selection capability on the desired Process Name utilized by the Liquidity Rate Risk Output processes.
- **Select Execution Run Identifier**
  The List box filter provides you with a selection capability on the desired Execution Run Identifier utilized by the Liquidity Rate Risk Output processes. This filter is dependent on the values selected in the Process Name filter.
- **Select Scenario**
  The List box filter provides you with a selection capability on the desired Scenario utilized by the Liquidity Rate Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier filter.
- **Select Dynamic Start Date**
  The List box filter provides you with a selection capability on the desired Dynamic Start Date utilized by the Liquidity Rate Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier, and Scenario filter.
- **Select Runoff Measure**
  The chart provides you with a selection capability on the desired Liquidity Rate Risk Runoff measurement.
- **Select Org Unit Hierarchy**
  The chart provides you with a selection capability for the desired Org Unit Hierarchical level.
- **Select Product Hierarchy**
  The chart provides you with a selection capability for the desired Product Hierarchical level.
- **Select GL Account Hierarchy**
  The chart provides you with a selection capability for the desired GL Account Hierarchical level.
- **Select COA Hierarchy**
  The chart provides you with a selection capability for the desired Common COA Hierarchical level.
- **Selected Rate Measure by Product**
  The table and chart reports the generated Liquidity Rate Risk output Rate Measure by Product for each Liquidity Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  – Dynamic Start Date
  – Bucket Name
  – Account Type Category

  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Product Hierarchy
  - Rate Measure

- **Selected Rate Measure by Org Unit**
  The table and chart reports the generated Liquidity Rate Risk output Rate Measure by Org Unit for each Liquidity Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date
  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Org Unit Hierarchy
  - Rate Measure

- **Selected Rate Measure by GL Account**
  The table and chart reports the generated Liquidity Rate Risk output Rate Measure by GL Account for each Liquidity Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date
  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - GL Account Hierarchy
  - Rate Measure

- **Selected Rate Measure by Common COA**
  The chart reports the generated Liquidity Rate Risk output Rate Measure by Product for each Liquidity Rate Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Dynamic Start Date

- Bucket Name
- Account Type Category
- Process Name
- As of Date (Day)
- Execution Run Identifier
- Currency Code
- Common COA Hierarchy
- Runoff Measure

Figure 5-93 Runoff by KPDs Report



5.1.5.3 Financial Results

The Financial Results dashboard presents the projected income and expense statement.

The Financial Result is arranged as a set of reports catering to analysis of the following categories:

- Financial Risk Runoff
- Financial Risk Rates & Term

5.1.5.3.1 Common filters

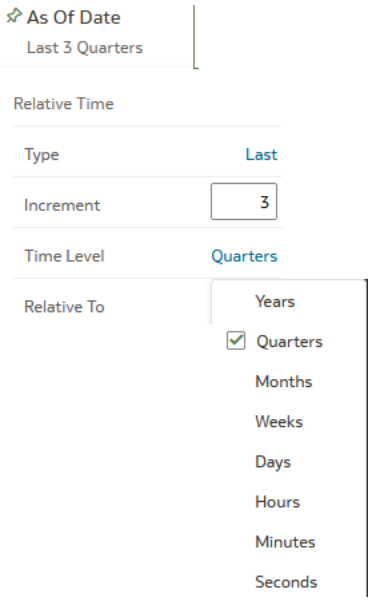
You can use a series of Report Prompts to filter the data according to Functional Key Attributes as described below:

Figure 5-94 Canvas Prompt Filters for Time Dimension



- **As of Date:** The Execution Period for the output results. You can use this filter to isolate a selected timeframe for the analysis. The following screenshot displays the possible options that this filter provides against the Time Dimension.

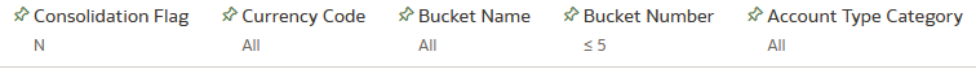
Figure 5-95 As of Date Selection



- Additional Filters for the Time Dimension as follows:
  - As of Date (Quarter)
  - As of Date (Month)

– As of Date (Day)

Figure 5-96 Canvas Prompt Filters for Liquidity Rate Risk Output Process execution data



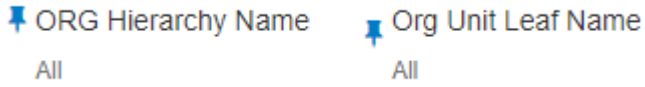
- **Consolidation Flag:** You can use this filter to select a specific Consolidation Flag Name to be applied to the Financial Risk Process execution data. The Default value of this filter is set to N.
- **Currency Code:** You can use this filter to select a specific Currency Name to be applied to the Financial Risk Process execution data.
- **Bucket Name:** You can use this filter to select a specific Bucket Name to be applied to the Financial Risk Process execution data. Bucket Name is a concatenation of Bucket number along with Bucket Start date and Bucket End date.
- **Bucket Number:** You can use this filter to select a specific Bucket Number to be applied to the Financial Risk Process execution data. Bucket Number is a range filter, the default range for this filter is ≤ 5.
- **Account Type Category:** You can use this filter to select a specific Account Type Category to be applied to the Financial Risk Process execution data.

Figure 5-97 Canvas Prompt Filters for Legal Entity key processing dimension



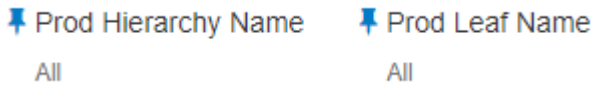
- **LE Hierarchy Name:** Select the Legal Entity hierarchy that you want to use to analyze the reports.
- **Legal Entity Leaf Name:** From the selected Legal Entity hierarchy, you can use this filter to select the Legal Entity Member to view reports.

Figure 5-98 Canvas Prompt Filters for Org Unit key processing dimension



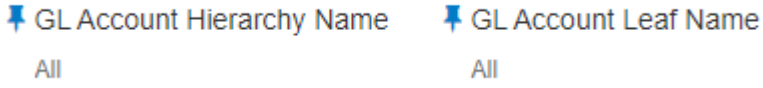
- **Org Hierarchy Name:** Select the Organization Unit hierarchy that you want to use to analyze the reports.
- **Org Unit Leaf Name:** From the selected Organization Unit hierarchy, you can use this filter to select the Organization Unit Member to view reports.

Figure 5-99 Canvas Prompt Filters for Product key processing dimension



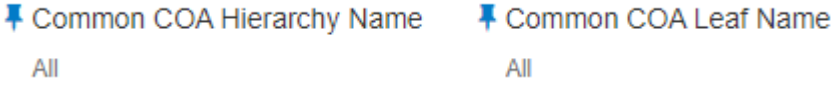
- **Prod Hierarchy Name:** Select the Product hierarchy that you want to use to analyze the reports.
- **Prod Leaf Name:** From the selected Product hierarchy, you can use this filter to select the Product Member to view reports.

Figure 5-100 Canvas Prompt Filters for GL Account key processing dimension



- **GL Account Hierarchy Name:** Select the General Ledger (GL) hierarchy that you want to use to analyze the reports.
- **GL Account Leaf Name:** From the selected GL hierarchy, you can use this filter to select the GL Member to view reports.

Figure 5-101 Canvas Prompt Filters for Common COA key processing dimension



- **Common COA Hierarchy Name:** Select the Common Chart of Accounts (COA) hierarchy that you want to use to analyze the reports.
- **Common COA Leaf Name:** From the selected COA hierarchy, you can use this filter to select the Common COA Member to view reports.

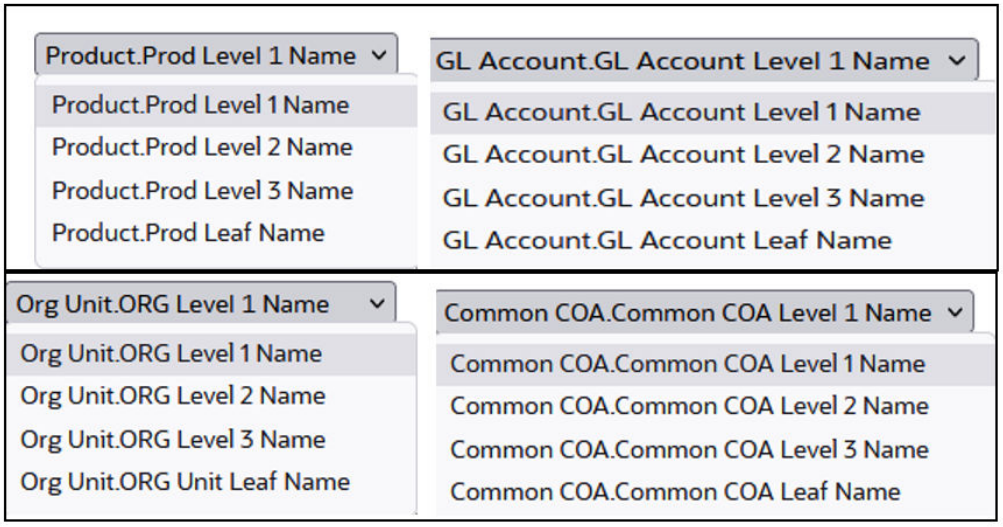
5.1.5.3.2 Report Hierarchies

The Report provides you with the roll-up and drill down capability on the Financial Risk Output Process execution data, leveraging the available levels for the following Hierarchies:

- Product Hierarchy
- GL Account Hierarchy
- Org Unit Entity Hierarchy
- Common COA Hierarchy

Following screenshot displays the available selections for the aforementioned hierarchies.

Figure 5-102 Financial Risk Output key processing dimension hierarchies



5.1.5.3.3 In canvas Variable Prompts

- **Select Runoff measurement:** This is the variable prompt to select the desired Runoff measurement to be applied to the “Financial Risk Runoff” Report canvas charts.
  The following elements are available for selection:
  - "Accrued Interest (Without Offset)","Accrued Interest Net (Without Offset)","Accumulated Devolvement Amount","Accumulated Interest CF Gross","Accumulated Interest CF Net","Accumulated Translation Amount","Deferred Runoff","Devolvement Runoff","Inflation Adjustment to Interest","Inflation Adjustment to Principal","Interest Accrued","Interest Accrued Gross","Interest Cash Flow","Interest Cash Flow (Without Offset)","Interest Cash Flow Gross","Interest Credited","Interest Gross (Without Offset)","Life Cap Balance","Life Cap Effect - Amount","Market Value","Maturity Runoff - Negative","Maturity Runoff - Positive","MOA Prepay Runoff","Neg-Am Balance","Non Interest Expenses","Non Interest Income","Non Maturity - Core Runoff","Non Maturity - Volatile Runoff","Non Performing Asset Runoff","Option Exercise Gain/ Loss","Option Exercise Market Value","Payment Runoff - Negative","Payment Runoff - Positive","Period Cap Balance","Period Cap Effect - Amount","Prepay Runoff - Negative","Prepay Runoff - Positive","Present Value of Interest Cash Flows","Present Value of Principal Cash Flows","Realized Currency Gain/ Loss (Principal)","Realized Currency Gain/Loss (Interest - Gross)","Realized Currency Gain/Loss (Interest - Net)","Recovery Runoff","Tease Balance","Tease Effect - Amount","Total Call Runoff Amount","Total Currency Gain/ Loss (Principal)","Total Put Runoff Amount","Total Runoff - Negative","Total Runoff - Positive","Writeoff Negative","Writeoff Positive".
- **Select Rate & Term measurement:** This is the variable prompt to select the desired Rate measurement to be applied to the “Financial Risk Rates & Term” report canvas charts.
  The following elements are available for selection:

- "After Repricing Gross Rate","After Repricing Net Rate","Average Gross Rate","Average Net Rate","Before Repricing Gross Rate","Before Repricing Net Rate","Beginning Gross Rate","Beginning Net Rate","Discount Rate IS","Dollar Duration","Ending Gross Rate","Ending Net Rate","Fully Indexed Gross Rate","Fully Indexed Net Rate","Life Cap Effect - Rate","Modified Duration","Option Exercise Rate","Period Cap Effect - Rate","Prepay Runoff Gross Rate","Prepay Runoff Net Rate","Strike Rate - Rate Based Approach","Tease Effect - Rate","Timing of Call Runoff","Timing of Devolvement Runoff","Timing of Maturity Runoff - Negative","Timing of Maturity Runoff - Positive","Timing of MOA Prepay Runoff","Timing of Non Maturity - Core Runoff","Timing of Non Maturity - Volatile Runoff","Timing of Non Performing Asset Runoff","Timing of Payment Runoff - Negative","Timing of Payment Runoff - Positive","Timing of Prepay Runoff - Negative","Timing of Prepay Runoff - Positive","Timing of Put Runoff","Timing of Recovery Runoff","Timing of Total Runoff - Negative","Timing of Total Runoff - Positive","Timing of Writeoff Negative","Timing of Writeoff Positive","Total Runoff Gross Rate","Total Runoff Net Rate","WARM".

5.1.5.3.4 Financial Risk Runoff

The “Financial Risk Runoff” Report is used to analyze the balances, runoff amounts, interest and related measures by time bucket.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Financial Risk Output results.

The report displays the underlying data according to the following Chart’ logic:

- **Select Process Name**
  The List box filter provides you with a selection capability on the desired Process Name utilized by the Financial Risk Output processes.
- **Select Execution Run Identifier**
  The List box filter provides you with a selection capability on the desired Execution Run Identifier utilized by the Financial Risk Output processes. This filter is dependent on the values selected in the Process Name filter.
- **Select Scenario**
  The List box filter provides you with a selection capability on the desired Scenario utilized by the Financial Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier filter.
- **Select Dynamic Start Date**
  The List box filter provides you with a selection capability on the desired Dynamic Start Date utilized by the Financial Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier, and Scenario filter.
- **Select Runoff Measure**
  The chart provides you with a selection capability on the desired Financial Risk Runoff measurement.
- **Select Org Unit Hierarchy**
  The chart provides you with a selection capability for the desired Org Unit Hierarchical level.
- **Select Product Hierarchy**
  The chart provides you with a selection capability for the desired Product Hierarchical level.
- **Select GL Account Hierarchy**

The chart provides you with a selection capability for the desired GL Account Hierarchical level.

- **Select COA Hierarchy**
  The chart provides you with a selection capability for the desired Common COA Hierarchical level.
- **Selected Runoff Measure by Product**
  The table and chart reports the generated Interest Rate Risk output Runoff Measure by Product for each Financial Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Product Hierarchy
  - Runoff Measure
- **Selected Runoff Measure by Org Unit**
  The table and chart reports the generated Financial Risk output Runoff Measure by Org Unit for each Financial Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Org Unit Hierarchy
  - Runoff Measure
- **Selected Runoff Measure by GL Account**

  The table and chart reports the generated Financial Risk output Runoff Measure by GL Account for each Financial Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier

  - Currency Code
  - GL Account Hierarchy
  - Runoff Measure

- **Selected Runoff Measure by Common COA**

  The chart reports the generated Financial Risk output Runoff Measure by Product for each Financial Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Common COA Hierarchy
  - Runoff Measure

Figure 5-103 Financial Risk Runoff Report



5.1.5.3.5 Financial Risk Rates & Term

The “Financial Risk Rates & Term” Report provides an analysis of interest rates and term measure corresponding to each bucket.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Financial Risk Output results.

The report displays the underlying data according to the following Chart’ logic:

- **Select Process Name**
  The List box filter provides you with a selection capability on the desired Process Name utilized by the Financial Risk Output processes.
- **Select Execution Run Identifier**
  The List box filter provides you with a selection capability on the desired Execution Run Identifier utilized by the Financial Risk Output processes. This filter is dependent on the values selected in the Process Name filter.
- **Select Scenario**
  The List box filter provides you with a selection capability on the desired Scenario utilized by the Financial Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier filter.
- **Select Dynamic Start Date**
  The List box filter provides you with a selection capability on the desired Dynamic Start Date utilized by the Financial Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier, and Scenario filter.
- **Select Rates Measure**
  The chart provides you with a selection capability on the desired Financial Risk Runoff measurement.
- **Select Org Unit Hierarchy**
  The chart provides you with a selection capability for the desired Org Unit Hierarchical level.
- **Select Product Hierarchy**
  The chart provides you with a selection capability for the desired Product Hierarchical level.
- **Select GL Account Hierarchy**
  The chart provides you with a selection capability for the desired GL Account Hierarchical level.
- **Select COA Hierarchy**
  The chart provides you with a selection capability for the desired Common COA Hierarchical level.
- **Selected Rate Measure by Product**
  The table and chart reports the generated Liquidity Rate Risk output Rate Measure by Product for each Financial Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Bucket Name
  - Account Type Category
  - Process Name

  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Product Hierarchy
  - Rate Measure

- **Selected Rate Measure by Org Unit**
  The table and chart reports the generated Liquidity Rate Risk output Rate Measure by Org Unit for each Financial Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - Org Unit Hierarchy
  - Rate Measure

- **Selected Rate Measure by GL Account**

  The table and chart reports the generated Liquidity Rate Risk output Rate Measure by GL Account for each Financial Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Bucket Name
  - Account Type Category
  - Process Name
  - As of Date (Day)
  - Execution Run Identifier
  - Currency Code
  - GL Account Hierarchy
  - Rate Measure

- **Selected Rate Measure by Common COA**

  The chart reports the generated Liquidity Rate Risk output Rate Measure by Product for each Financial Risk Output execution with respect to As of Date and Bucket Name.

  The columns displayed in the chart are the following:

  - Bucket Name
  - Account Type Category
  - Process Name

- As of Date (Day)
- Execution Run Identifier
- Currency Code
- Common COA Hierarchy
- Rate Measure

Figure 5-104 Financial Risk Rates and Term Report



5.1.5.3.6 Financial Risk Balance

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Financial Risk Output results.

The report displays the underlying data according to the following Chart' logic:

Select Process Name The List box filter provides you with a selection capability on the desired Process Name utilized by the Financial Risk Output processes.

- **Select Execution Identifier**

The List box filter provides you with a selection capability on the desired Execution Identifier utilized by the Financial Risk Output processes. This filter is dependent on the values selected in the Process Name filter.

- **Select Scenario**

The List box filter provides you with a selection capability on the desired Scenario utilized by the Financial Risk Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier filter.

- **Select Balance Measure**

The chart provides you with a selection capability on the desired Financial Risk Balance measurement.

Select Org Unit Hierarchy The chart provides you with a selection capability for the desired Org Unit Hierarchical level.

Select Product Hierarchy The chart provides you with a selection capability for the desired Product Hierarchical level.

Select GL Account Hierarchy The chart provides you with a selection capability for the desired GL Account Hierarchical level.

Select COA Hierarchy The chart provides you with a selection capability for the desired Common COA Hierarchical level.

Selected Balance Measure by Product

The table and chart reports the generated Interest Rate Risk output Balance Measure by Product for each Financial Risk Output execution with respect to As of Date and Bucket Name.

The columns displayed in the chart are the following:

- Bucket Name
- Account Type Category
- Process Name
- As of Date (Day)
- Execution Identifier
- Currency Code
- Product Hierarchy
- Balance Measure

Selected Balance Measure by Org Unit

The table and chart reports the generated Financial Risk output Balance Measure by Org Unit for each Financial Risk Output execution with respect to As of Date and Bucket Name.

The columns displayed in the chart are the following:

- Bucket Name
- Account Type Category
- Process Name
- As of Date (Day)
- Execution Identifier
- Currency Code
- Org Unit Hierarchy
- Balance Measure

Selected Balance Measure by GL Account

The table and chart reports the generated Financial Risk output Balance Measure by GL Account for each Financial Risk Output execution with respect to As of Date and Bucket Name.

The columns displayed in the chart are the following:

- Bucket Name
- Account Type Category
- Process Name
- As of Date (Day)
- Execution Run Identifier
- Currency Code
- GL Account Hierarchy
- Balance Measure

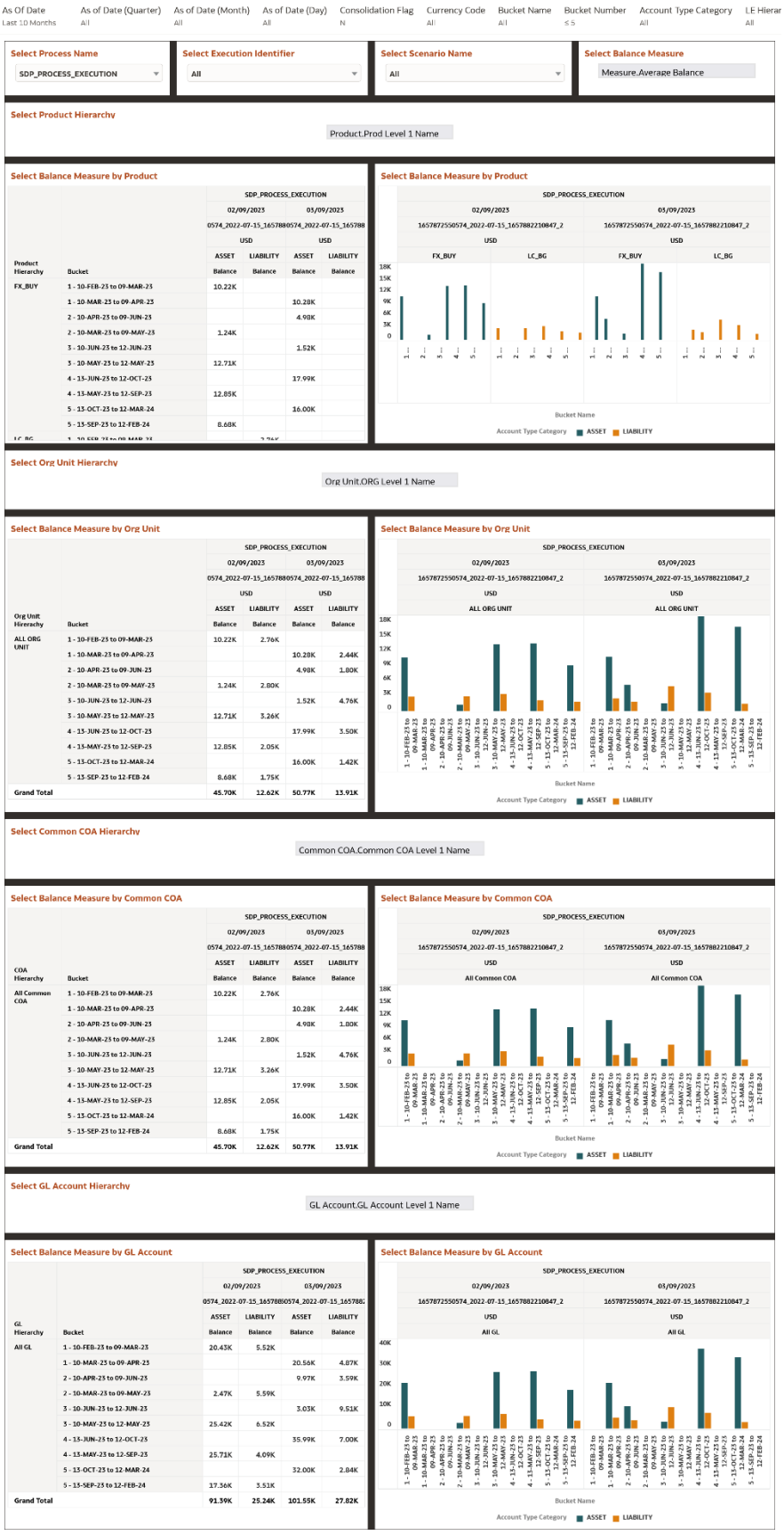
Selected Balance Measure by Common COA

The chart reports the generated Financial Risk output Balance Measure by Product for each Financial Risk Output execution with respect to As of Date and Bucket Name.

The columns displayed in the chart are the following:

- Bucket Name
- Account Type Category
- Process Name
- As of Date (Day)
- Execution Run Identifier
- Currency Code
- Common COA Hierarchy
- Balance Measure

Figure 5-105 Financial Risk Balance Report



5.1.5.4 Market Value

The ALM Market Value dashboard is arranged as a set of reports catering to analysis of the following categories:

- Common Business- Balance
- Common Business - Rate
- Account Summary

5.1.5.4.1 Common Filters

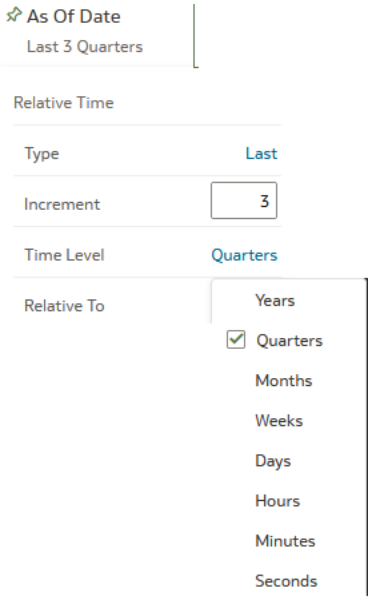
You can use a series of Report Prompts to filter the data according to Functional Key Attributes as described below:

Figure 5-106 Canvas Prompt Filters for Time Dimension



- **As of Date:** The Execution Period for the output results. You can use this filter to isolate a selected timeframe for the analysis. The following screenshot displays the possible options that this filter provides against the Time Dimension.

Figure 5-107 As of Date Selection



  - Additional Filters for the Time Dimension as follows:
  - As of Date (Quarter)
  - As of Date (Month)

  - As of Date (Day)

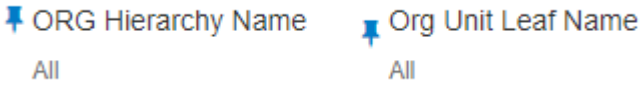
- **Consolidation Flag:** You can use this filter to select a specific Consolidation Flag Name to be applied to the Financial Risk Process execution data. The Default value of this filter is set to N.
- **Currency Code:** You can use this filter to select a specific Currency Name to be applied to the Financial Risk Process execution data.
- **Account Type Category:** You can use this filter to select a specific Account Type Category to be applied to the Financial Risk Process execution data.

Figure 5-108 Canvas Prompt Filters for Legal Entity key processing dimension



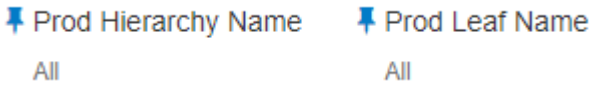
- **LE Hierarchy Name:** Select the Legal Entity hierarchy that you want to use to anayse the reports.
- **Legal Entity Leaf Name:** From the selected Legal Entity hierarchy, you can use this filter to select the Legal Entity Member to view reports.

Figure 5-109 Canvas Prompt Filters for Org Unit key processing dimension



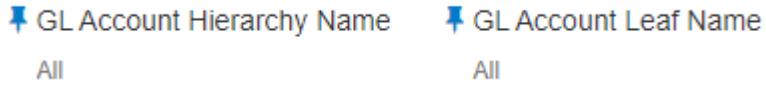
- **Org Hierarchy Name:** Select the Organization Unit hierarchy that you want to use to anayse the reports.
- **Org Unit Leaf Name:** From the selected Organization Unit hierarchy, you can use this filter to select the Organization Unit Member to view reports.

Figure 5-110 Canvas Prompt Filters for Product key processing dimension



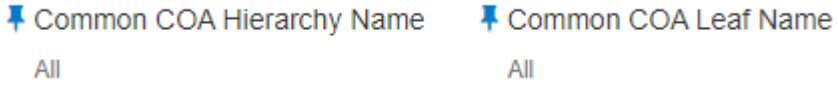
- **Prod Hierarchy Name:** Select the Product hierarchy that you want to use to anayse the reports.
- **Prod Leaf Name:** From the selected pProduct hierarchy, you can use this filter to select the Product Member to view reports.

Figure 5-111 Canvas Prompt Filters for GL Account key processing dimension



- **GL Account Hierarchy Name:** Select the General Ledger (GL) hierarchy that you want to use to anayse the reports.
- **GL Account Leaf Name:** From the selected GL hierarchy, you can use this filter to select the GL Memberto view reports.

Figure 5-112 Canvas Prompt Filters for Common COA key processing dimension



- **Common COA Hierarchy Name:** Select the Common Chart of Accounts (COA) hierarchy that you want to use to anayse the reports.
- **Common COA Leaf Name:** From the selected COA hierarchy, you can use this filter to select the Common COA Member to view reports.

5.1.5.4.2 Current Business - Balance

This report displays values related to current business Balances like Beginning balance, ending balance, Average balance etc.

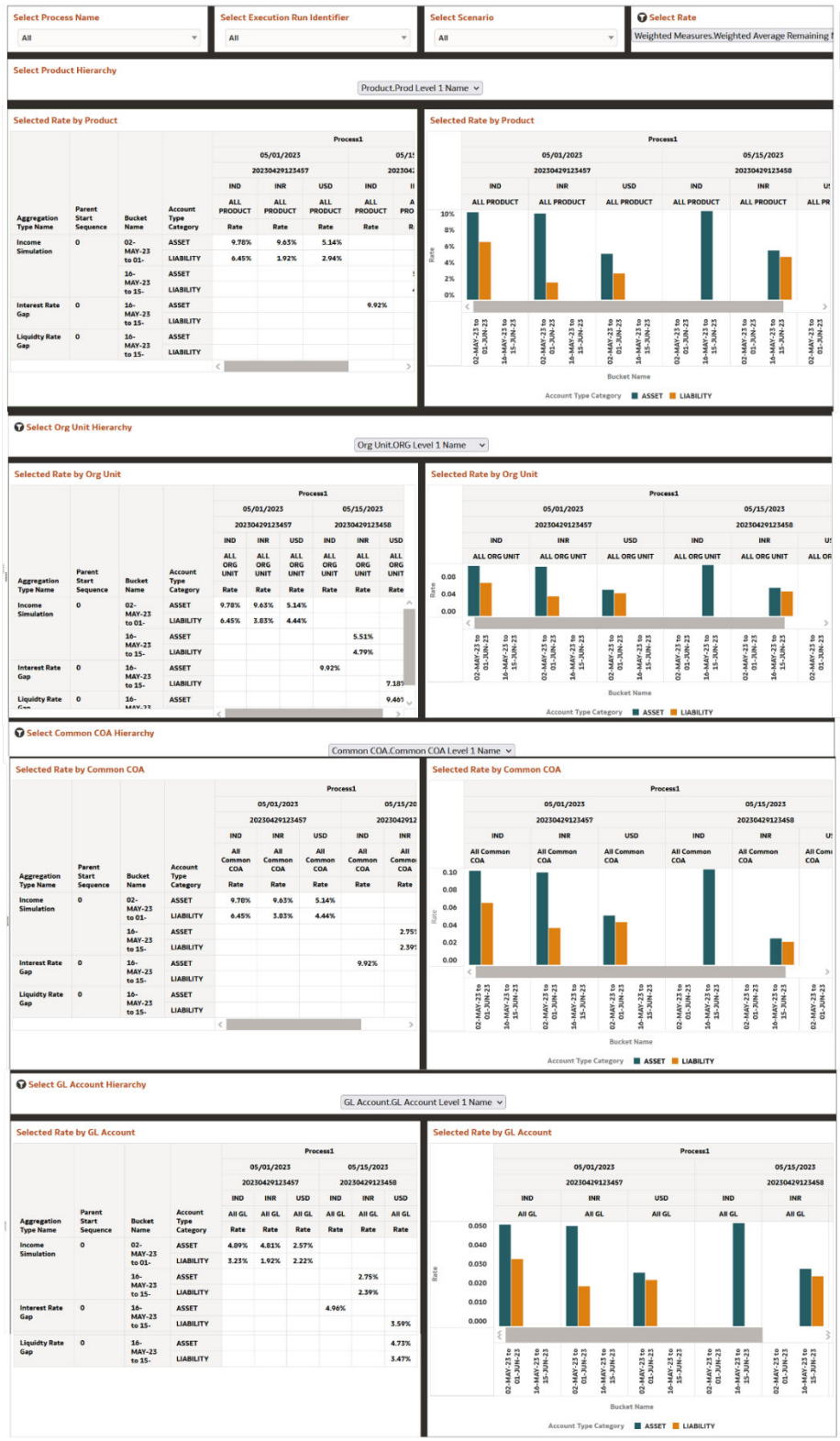
Figure 5-113 Current Business - Balance



5.1.5.4.3 Current Business – Rates

This report displays rates related to current business like Beginning rate, ending rate, Average rate etc.

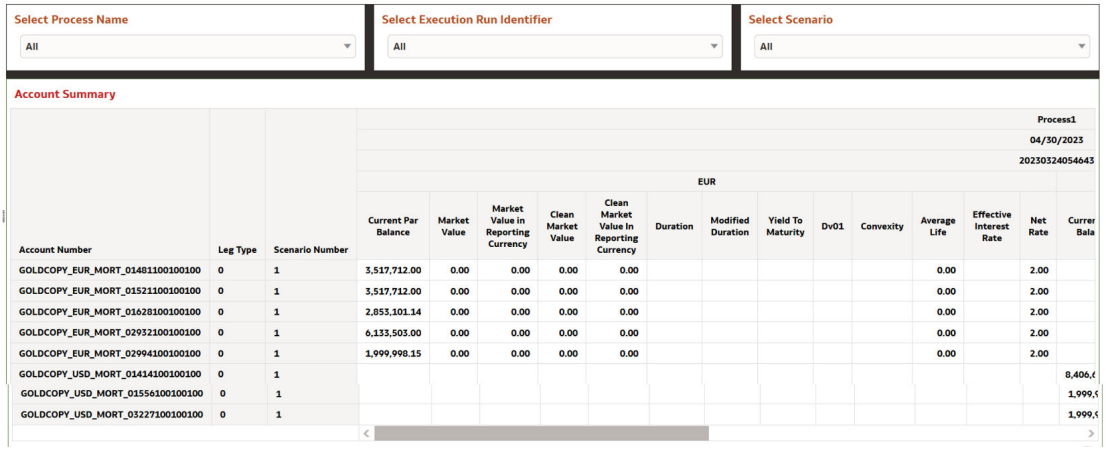
Figure 5-114 Current Business – Rates



5.1.5.4.4 Account Summary

Within ALM BI, customer account-level data from both the OFSAA Staging Area and Instrument tables and consolidated into the standardized relational ALM BI data model. This consolidation is performed to organize all the relevant account-level data into a single Fact structure to be used for reporting.

Figure 5-115 Account Summary



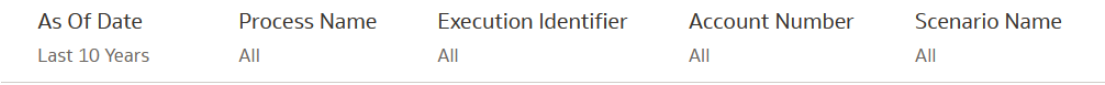
5.1.5.5 Cash flow Detail

This report displays the results from the detail cash flow - audit table.

5.1.5.5.1 Common filters

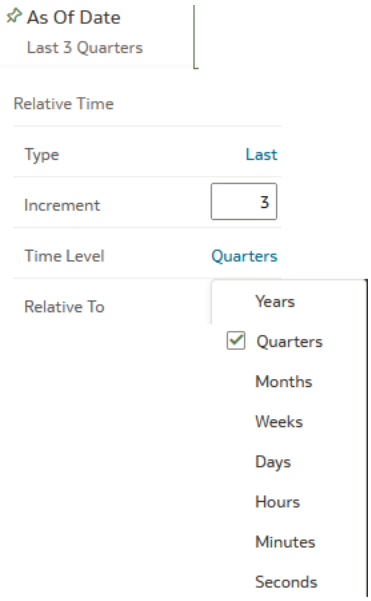
You can use a series of Report Prompts to filter the data according to Functional Key Attributes as described below:

Figure 5-116 Canvas Prompt Filters for Time Dimension



- **As of Date:** The Execution Period for the output results. You can use this filter to isolate a selected timeframe for the analysis. The following screenshot displays the possible options that this filter provides against the Time Dimension.

Figure 5-117 As of Date Selection

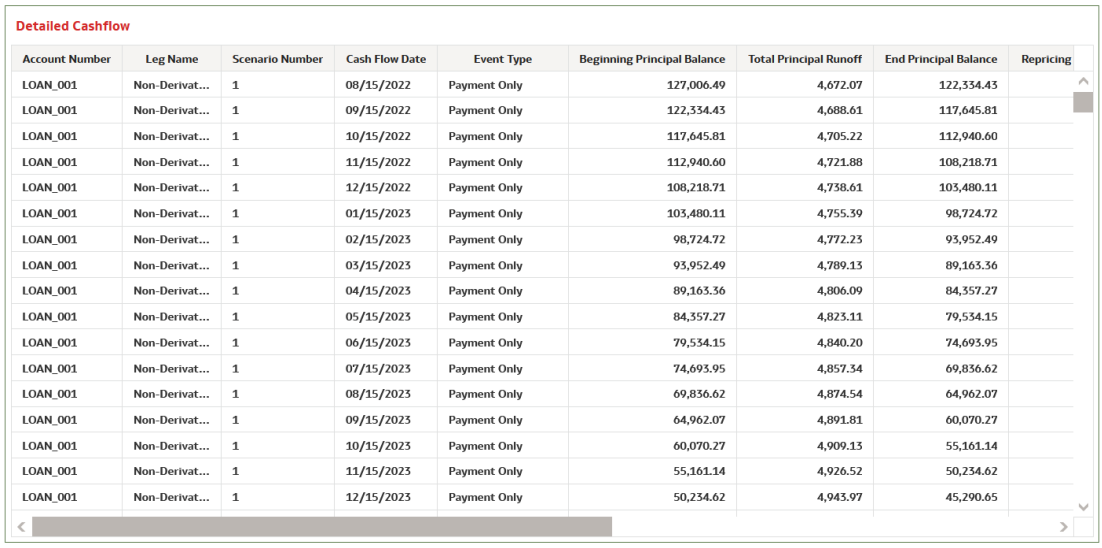


  - Additional Filters for the Time Dimension as follows:
  - As of Date (Quarter)
  - As of Date (Month)
  - As of Date (Day)
- **Process Name:** You can use this filter to select a specific Process Name to be applied to the Detailed Cashflow Process execution data. The Default value of this filter is set to N.
- **Execution Identifier:** You can use this filter to select a specific Execution Identifier to be applied to the Detailed Cashflow Process execution data.
- **Account Number:** You can use this filter to select a specific Account Number to be applied to the Detailed Cashflow Process execution data.
- **Scenario Name:** You can use this filter to select a specific Scenario Name to be applied to the Detailed Cashflow Process execution data.

5.1.5.5.2 Detailed Cashflow

This report contains account level detailed cash flow information for the number of instrument records selected on the Audit block of the ALM Process. Each instrument record is processed and generates a unique set of cash flows as defined by that instrument record's will be displayed in the below format as output.

Figure 5-118 Detailed Cashflow



Detailed Cashflow

Account Number	Leg Name	Scenario Number	Cash Flow Date	Event Type	Beginning Principal Balance	Total Principal Runoff	End Principal Balance	Repricing
LOAN_001	Non-Derivat...	1	08/15/2022	Payment Only	127,006.49	4,672.07	122,334.43	
LOAN_001	Non-Derivat...	1	09/15/2022	Payment Only	122,334.43	4,688.61	117,645.81	
LOAN_001	Non-Derivat...	1	10/15/2022	Payment Only	117,645.81	4,705.22	112,940.60	
LOAN_001	Non-Derivat...	1	11/15/2022	Payment Only	112,940.60	4,721.88	108,218.71	
LOAN_001	Non-Derivat...	1	12/15/2022	Payment Only	108,218.71	4,738.61	103,480.11	
LOAN_001	Non-Derivat...	1	01/15/2023	Payment Only	103,480.11	4,755.39	98,724.72	
LOAN_001	Non-Derivat...	1	02/15/2023	Payment Only	98,724.72	4,772.23	93,952.49	
LOAN_001	Non-Derivat...	1	03/15/2023	Payment Only	93,952.49	4,789.13	89,163.36	
LOAN_001	Non-Derivat...	1	04/15/2023	Payment Only	89,163.36	4,806.09	84,357.27	
LOAN_001	Non-Derivat...	1	05/15/2023	Payment Only	84,357.27	4,823.11	79,534.15	
LOAN_001	Non-Derivat...	1	06/15/2023	Payment Only	79,534.15	4,840.20	74,693.95	
LOAN_001	Non-Derivat...	1	07/15/2023	Payment Only	74,693.95	4,857.34	69,836.62	
LOAN_001	Non-Derivat...	1	08/15/2023	Payment Only	69,836.62	4,874.54	64,962.07	
LOAN_001	Non-Derivat...	1	09/15/2023	Payment Only	64,962.07	4,891.81	60,070.27	
LOAN_001	Non-Derivat...	1	10/15/2023	Payment Only	60,070.27	4,909.13	55,161.14	
LOAN_001	Non-Derivat...	1	11/15/2023	Payment Only	55,161.14	4,926.52	50,234.62	
LOAN_001	Non-Derivat...	1	12/15/2023	Payment Only	50,234.62	4,943.97	45,290.65	

5.1.6 Rates and Results

This report displays the IRC Name, IRC Term Point, Forecast Type, and Minimum Rate.

5.1.6.1 Forecast Interest Rates

Forecasting interest rates allows Banks to predict the movement of interest rates and inform regulatory bodies and investment managers accordingly. By having an informed prediction of the movement of interest rates, markets can preemptively adapt to changing conditions.

The Forecast Interest Rates dashboard is arranged as a set of reports catering to analysis of the following categories:

- “Interest Rates”
- “Implied Forward Coefficient”

5.1.6.1.1 Interest Rates

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Interest Rate Output results.

The report displays the underlying data according to the following Chart’ logic:

- **As of Date:**
  The Execution Period for the output results. You can use this filter to isolate a selected timeframe for the analysis. The following screenshot displays the possible options that this filter provides against the Time Dimension.
- **Select Process Name**
  The List box filter provides you with a selection capability on the desired Process Name utilized by the Interest Rate Output processes. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Execution Run Identifier**

The List box filter provides you with a selection capability on the desired Execution Run Identifier utilized by the Interest Rate Output processes. This filter is dependent on the values selected in the Process Name filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.

- **Select Scenario**
  The List box filter provides you with a selection capability on the desired Scenario utilized by the Interest Rate Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Interest Rate Curve**
  The List box filter provides you with a selection capability on the desired Interest Rate Curve utilized by the Forecast Interest Rate Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier, and Scenario filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Forecast Month**
  The List box filter provides you with a selection capability on the desired Forecast Month utilized by the Forecast Interest Rate Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier, and Scenario filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.

Figure 5-119 Interest Rates



5.1.6.1.2 Implied Forward Coefficient

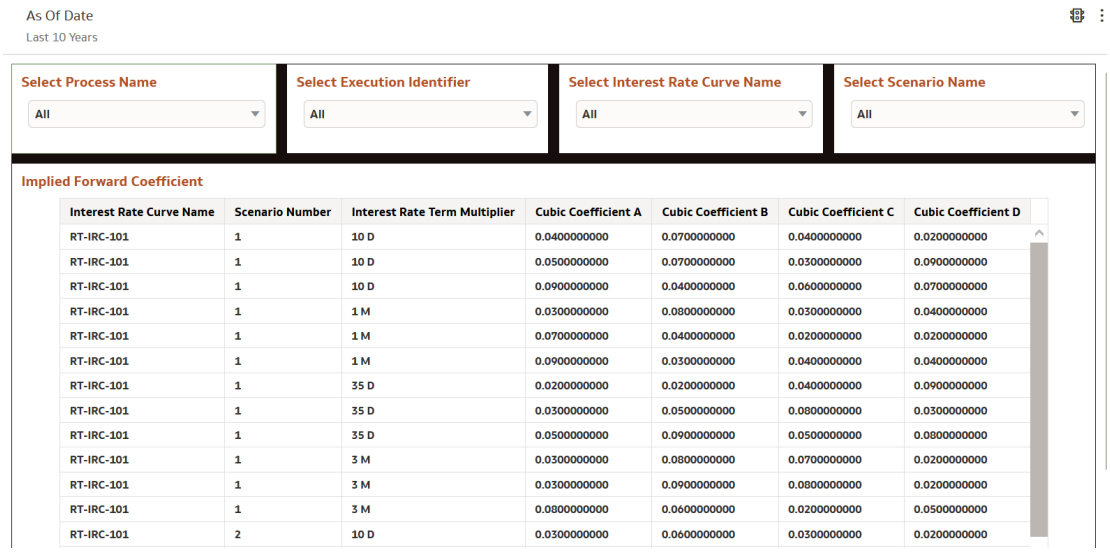
Forecast interest rates based implied rate is an interest rate equal to the difference between the spot rate and the forward or futures rate.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Interest Rate Output results.

The report displays the underlying data according to the following Chart' logic:

- **As of Date:**
  The Execution Period for the output results. You can use this filter to isolate a selected timeframe for the analysis. The following screenshot displays the possible options that this filter provides against the Time Dimension.
- **Select Process Name**
  The List box filter provides you with a selection capability on the desired Process Name utilized by the Interest Rate Output processes. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Execution Run Identifier**
  The List box filter provides you with a selection capability on the desired Execution Run Identifier utilized by the Interest Rate Output processes. This filter is dependent on the values selected in the Process Name filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Scenario**
  The List box filter provides you with a selection capability on the desired Scenario utilized by the Interest Rate Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.

Figure 5-120 Implied Forward Coefficient



Interest Rate Curve Name	Scenario Number	Interest Rate Term Multiplier	Cubic Coefficient A	Cubic Coefficient B	Cubic Coefficient C	Cubic Coefficient D
RT-IRC-101	1	10 D	0.0400000000	0.0700000000	0.0400000000	0.0200000000
RT-IRC-101	1	10 D	0.0500000000	0.0700000000	0.0300000000	0.0900000000
RT-IRC-101	1	10 D	0.0900000000	0.0400000000	0.0600000000	0.0700000000
RT-IRC-101	1	1 M	0.0300000000	0.0800000000	0.0300000000	0.0400000000
RT-IRC-101	1	1 M	0.0700000000	0.0400000000	0.0200000000	0.0200000000
RT-IRC-101	1	1 M	0.0900000000	0.0300000000	0.0400000000	0.0400000000
RT-IRC-101	1	35 D	0.0200000000	0.0200000000	0.0400000000	0.0900000000
RT-IRC-101	1	35 D	0.0300000000	0.0500000000	0.0800000000	0.0300000000
RT-IRC-101	1	35 D	0.0500000000	0.0900000000	0.0500000000	0.0800000000
RT-IRC-101	1	3 M	0.0300000000	0.0800000000	0.0700000000	0.0200000000
RT-IRC-101	1	3 M	0.0300000000	0.0900000000	0.0800000000	0.0200000000
RT-IRC-101	1	3 M	0.0800000000	0.0600000000	0.0200000000	0.0500000000
RT-IRC-101	2	10 D	0.0300000000	0.0600000000	0.0300000000	0.0200000000

5.1.6.2 Forecast Currency Rates

Liquidity risk is defined as the risk of incurring losses resulting from the inability to meet payment obligations in a timely manner when they become due or from being unable to do so at a sustainable cost.

The Forecast Interest Rates dashboard is arranged as a set of reports catering to analysis of the following categories:

- “Forecast Exchange Rate”
- “Historical Exchange Rate”

5.1.6.2.1 Forecast Exchange Rate

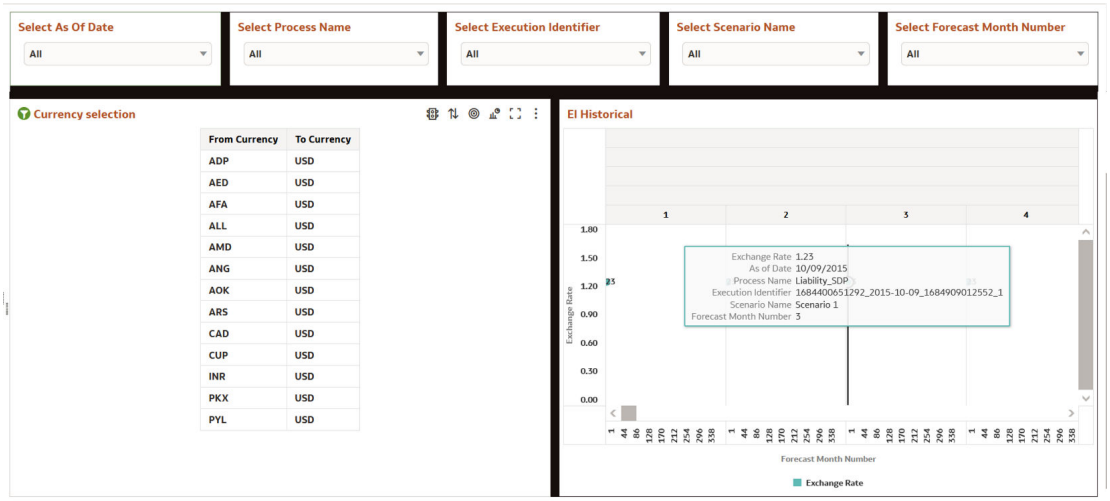
Forecast exchange rate are necessary to evaluate the cash flows involved as part of Forex risk which is one the key ALM pillars. Thus, exchange rate forecasting is very important to evaluate the benefits and risks attached to the international business environment.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Economic Indicator Output results.

The report displays the underlying data according to the following Chart’ logic:

- **As of Date:**
  The Execution Period for the output results. You can use this filter to isolate a selected timeframe for the analysis. The following screenshot displays the possible options that this filter provides against the Time Dimension.
- **Select Process Name**
  The List box filter provides you with a selection capability on the desired Process Name utilized by the Forecast Exchange Rate Output processes. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Execution Run Identifier**
  The List box filter provides you with a selection capability on the desired Execution Run Identifier utilized by the Forecast Exchange Rate Output processes. This filter is dependent on the values selected in the Process Name filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Scenario**
  The List box filter provides you with a selection capability on the desired Scenario utilized by the Forecast Exchange Rate Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Forecast Month**
  The List box filter provides you with a selection capability on the desired Forecast Month utilized by the Forecast Exchange Rate Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier, and Scenario filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.

Figure 5-121 Forecast Exchange Rate



5.1.6.2.2 Historical Exchange Rate

This report compares the Historical Exchange Rate and Forecast Economic Indicators across time buckets.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Economic Indicator Output results.

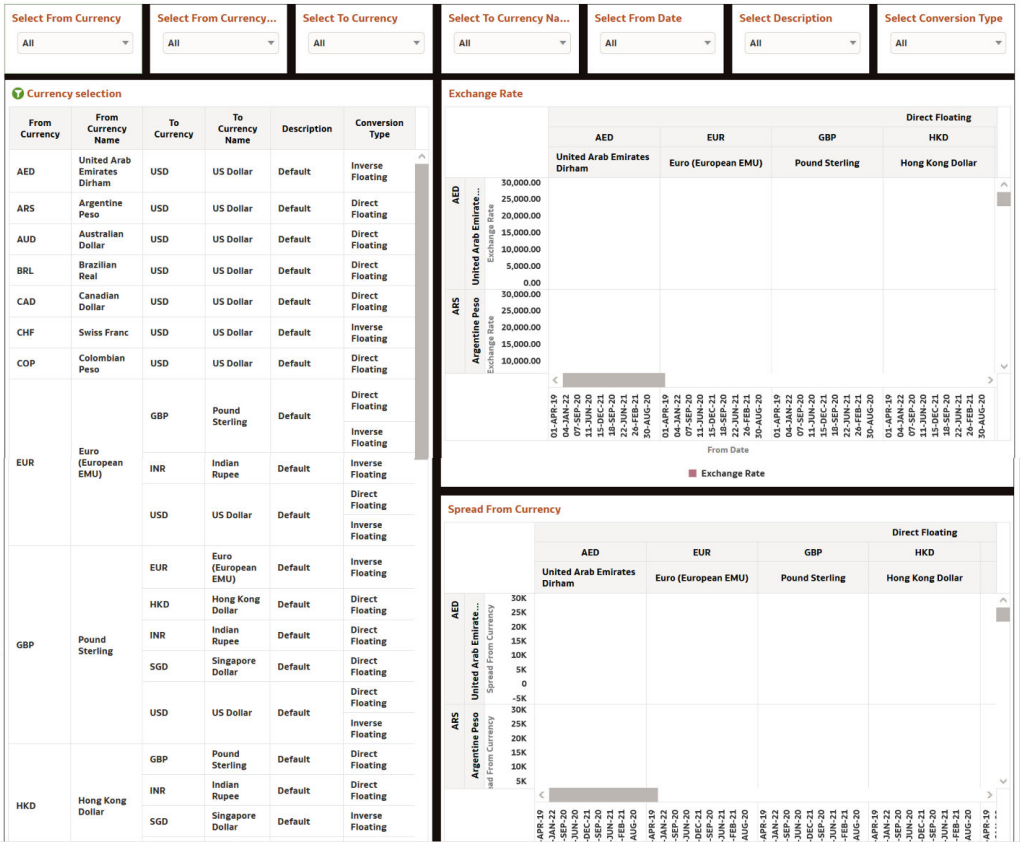
The report displays the underlying data according to the following Chart' logic:

- **Select From Currency**
  The List box filter provides you with a selection capability on the desired From Currency utilized by the Historical Exchange Rate Output processes. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select From Currency Name**
  The List box filter provides you with a selection capability on the desired From Currency Name utilized by the Historical Exchange Rate Output processes. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select To Currency**
  The List box filter provides you with a selection capability on the desired To Currency utilized by the Historical Exchange Rate Output processes. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select To Currency Name**
  The List box filter provides you with a selection capability on the desired To Currency Name utilized by the Historical Exchange Rate Output processes. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select From Date**
  The List box filter provides you with a selection capability on the desired From Date utilized by the Historical Exchange Rate Output processes. This filter is dependent on the values selected in the Process Name filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Description**
  The List box filter provides you with a selection capability on the desired Description utilized by the Historical Exchange Rate Output processes. This filter is dependent on the

values selected in the Process Name, Execution Run Identifier filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.

- **Select Conversion Type**
  The List box filter provides you with a selection capability on the desired Conversion Type utilized by the Historical Exchange Rate Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier, and Scenario filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.

Figure 5-122 Historical Exchange Rate



5.1.6.3 Forecast Economic Indicator

Liquidity risk is defined as the risk of incurring losses resulting from the inability to meet payment obligations in a timely manner when they become due or from being unable to do so at a sustainable cost.

The Forecast Interest Rates dashboard is arranged as a set of reports catering to analysis of the following categories:

- “Historical”
- “Forecast”

5.1.6.3.1 Forecast Economic Indicator

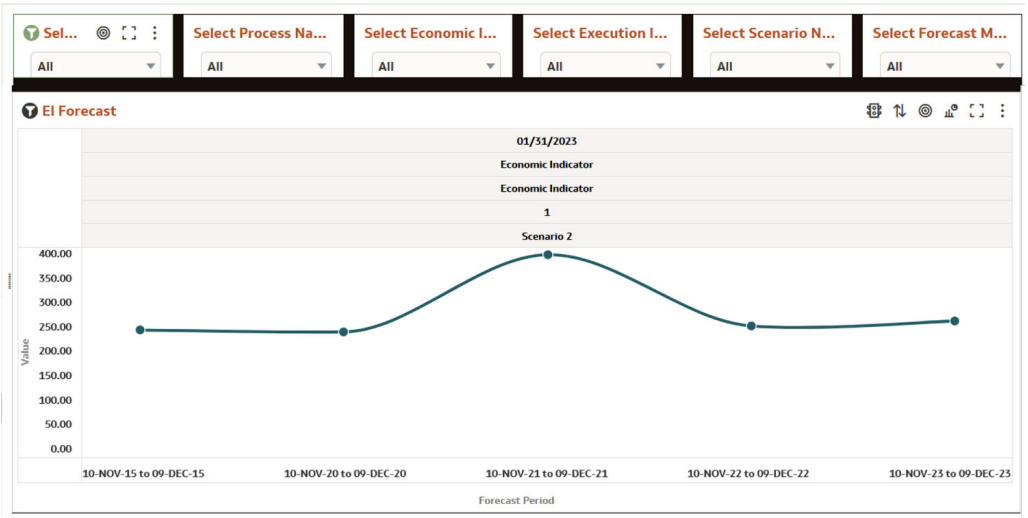
Forecast Economic Indicators are used to predict when changes in the economic cycle may occur and predict other significant shifts in the economy

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Economic Indicator Output results.

The report displays the underlying data according to the following Chart' logic:

- **As of Date**
  The Execution Period for the output results. You can use this filter to isolate a selected timeframe for the analysis. The following screenshot displays the possible options that this filter provides against the Time Dimension.
- **Select Process Name**
  The List box filter provides you with a selection capability on the desired Process Name utilized by the Economic Indicator Output processes. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Economic Indicator**
  The List box filter provides you with a selection capability on the desired Economic Indicator Name utilized by the Economic Output processes. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Execution Run Identifier**
  The List box filter provides you with a selection capability on the desired Execution Run Identifier utilized by the Economic Indicator Output processes. This filter is dependent on the values selected in the Process Name filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Scenario**
  The List box filter provides you with a selection capability on the desired Scenario utilized by the Economic Indicator Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.
- **Select Forecast Month**
  The List box filter provides you with a selection capability on the desired Forecast Month utilized by the Economic Indicator Output processes. This filter is dependent on the values selected in the Process Name, Execution Run Identifier, and Scenario filter. This is a Single select filter, without any selection the reports will not fetch any meaningful results.

Figure 5-123 Forecast Economic Indicators



5.1.6.3.2 Historical Economic Indicator

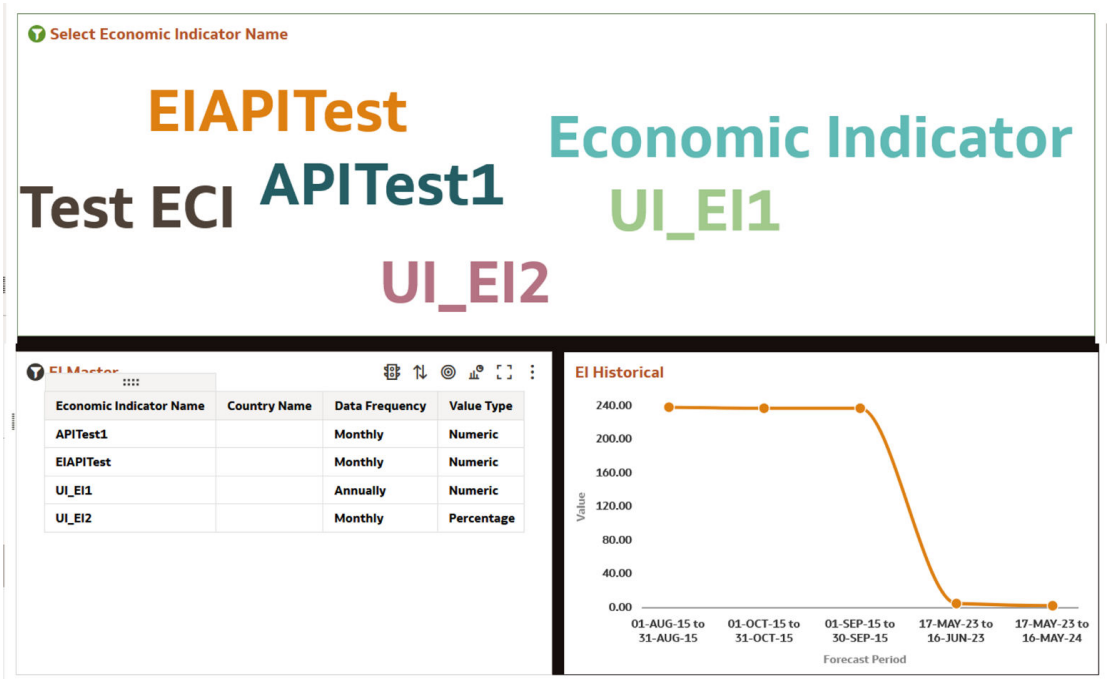
Historical economic indicator report shows macroeconomic to measure current performance and predictions of future performance to understand current and future economic activity and opportunity.

You can use a series of Report Prompts, as previously described, to filter the data according to key attributes pertaining to the underlying Economic Indicator Output results.

The report displays the underlying data according to the following Chart' logic:

Select Economic Indicator The List box filter provides you with a selection capability on the desired Economic Indicator Name utilized by the Economic Output processes. This is a Single select filter, without any selection the reports will not fetch any meaningful results.

Figure 5-124 Historical Economic Indicator



5.1.7 Audit

This section covers following topics:

- Process Error
- ALM Assumptions

5.1.7.1 Process Error

This report displays the results from the Process Errors table

5.1.7.1.1 Process Error Account Details

This report allows users to see the process errors with their impact on account level details.

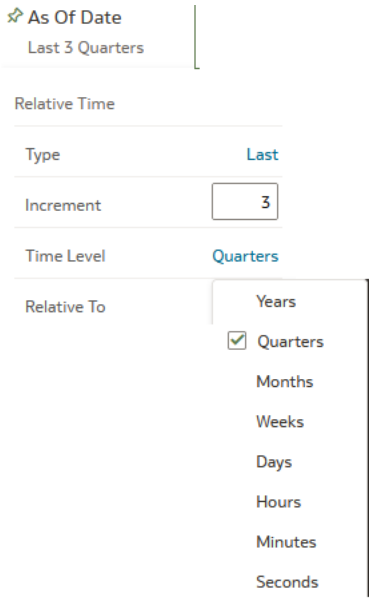
Figure 5-125 Canvas Prompt Filters for Time Dimension



You can use a series of Report Prompts to filter the data according to Functional Key Attributes as described below:

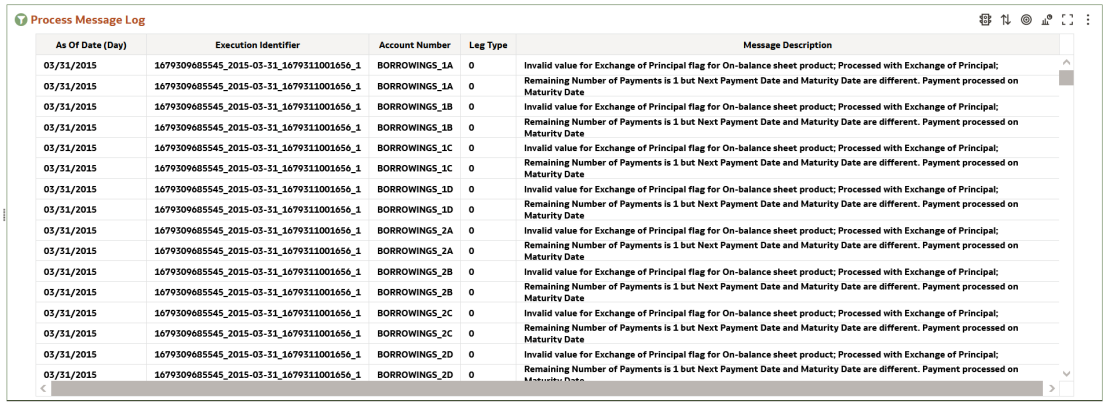
- As of Date: The Execution Period for the output results. You can use this filter to isolate a selected timeframe for the analysis. The following screenshot displays the possible options that this filter provides against the Time Dimension.

Figure 5-126 As of Date Selection



- Additional Filters for the Time Dimension as follows:
- As of Date (Quarter)
- As of Date (Month)
- As of Date (Day)
- **Leg Type:** You can use this filter to select a specific Leg Type to be applied to the Process Error execution data.
- **Process Name:** You can use this filter to select a specific Process Name to be applied to the Process Error execution data. The Default value of this filter is set to N.
- **Execution Identifier:** You can use this filter to select a specific Execution Identifier to be applied to the Process Error execution data.
- **Scenario Name:** You can use this filter to select a specific Scenario Name to be applied to the Process Error execution data.
- **Account Number:** You can use this filter to select a specific Account Number to be applied to the Process Error execution data

Figure 5-127 Report



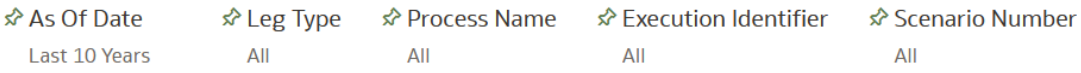
As Of Date (Day)	Execution Identifier	Account Number	Leg Type	Message Description
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_1A	0	Invalid value for Exchange of Principal flag for On-balance sheet product; Processed with Exchange of Principal;
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_1A	0	Remaining Number of Payments is 1 but Next Payment Date and Maturity Date are different. Payment processed on Maturity Date
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_1B	0	Invalid value for Exchange of Principal flag for On-balance sheet product; Processed with Exchange of Principal;
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_1B	0	Remaining Number of Payments is 1 but Next Payment Date and Maturity Date are different. Payment processed on Maturity Date
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_1C	0	Invalid value for Exchange of Principal flag for On-balance sheet product; Processed with Exchange of Principal;
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_1C	0	Remaining Number of Payments is 1 but Next Payment Date and Maturity Date are different. Payment processed on Maturity Date
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_1D	0	Invalid value for Exchange of Principal flag for On-balance sheet product; Processed with Exchange of Principal;
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_1D	0	Remaining Number of Payments is 1 but Next Payment Date and Maturity Date are different. Payment processed on Maturity Date
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_2A	0	Invalid value for Exchange of Principal flag for On-balance sheet product; Processed with Exchange of Principal;
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_2A	0	Remaining Number of Payments is 1 but Next Payment Date and Maturity Date are different. Payment processed on Maturity Date
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_2B	0	Invalid value for Exchange of Principal flag for On-balance sheet product; Processed with Exchange of Principal;
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_2B	0	Remaining Number of Payments is 1 but Next Payment Date and Maturity Date are different. Payment processed on Maturity Date
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_2C	0	Invalid value for Exchange of Principal flag for On-balance sheet product; Processed with Exchange of Principal;
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_2C	0	Remaining Number of Payments is 1 but Next Payment Date and Maturity Date are different. Payment processed on Maturity Date
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_2D	0	Invalid value for Exchange of Principal flag for On-balance sheet product; Processed with Exchange of Principal;
03/31/2015	1679309685545_2015-03-31_1679311001656_1	BORROWINGS_2D	0	Remaining Number of Payments is 1 but Next Payment Date and Maturity Date are different. Payment processed on Maturity Date

5.1.7.1.2 Process Error Summary

This report displays the summarized results of the Process Errors table.

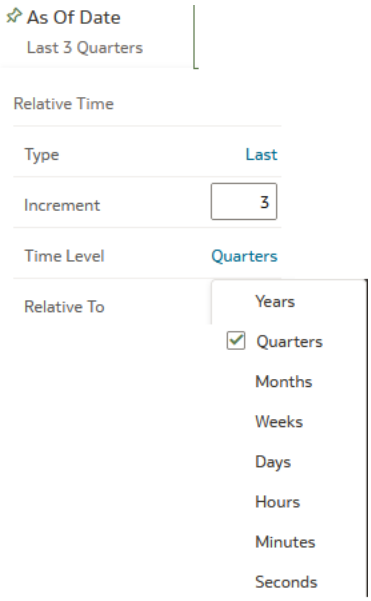
You can use a series of Report Prompts to filter the data according to Functional Key Attributes as described below:

Figure 5-128 Canvas Prompt Filters for Time Dimension



- As of Date: The Execution Period for the output results. You can use this filter to isolate a selected timeframe for the analysis. The following screenshot displays the possible options that this filter provides against the Time Dimension.

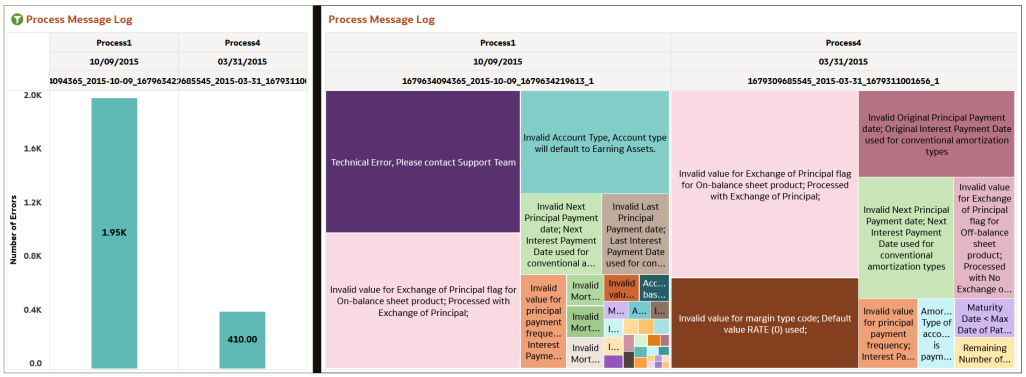
Figure 5-129 As of Date Selection



  - Additional Filters for the Time Dimension as follows:
  - As of Date (Quarter)
  - As of Date (Month)
  - As of Date (Day)

- **Leg Type:** You can use this filter to select a specific Leg Type to be applied to the Process Error execution data.
- **Process Name:** You can use this filter to select a specific Process Name to be applied to the Process Error execution data. The Default value of this filter is set to N.
- **Execution Identifier:** You can use this filter to select a specific Execution Identifier to be applied to the Process Error execution data.
- **Scenario Name:** You can use this filter to select a specific Scenario Name to be applied to the Process Error execution data.

Figure 5-130 Report



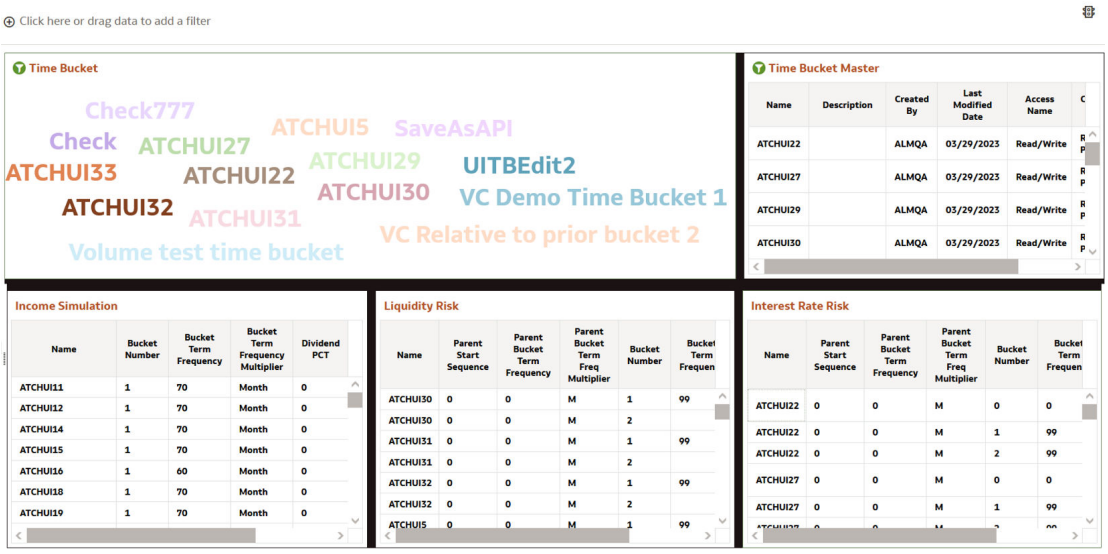
5.1.7.2 ALM Assumption

Report displays the deterministic ALM Processes with related embedded assumption rules.

5.1.7.2.1 Time Bucket

This report displays the all Time Bucket definition configured like (Income simulation, LR, Repricing) for Static and Dynamic ALM process.

Figure 5-131 Time Bucket Report

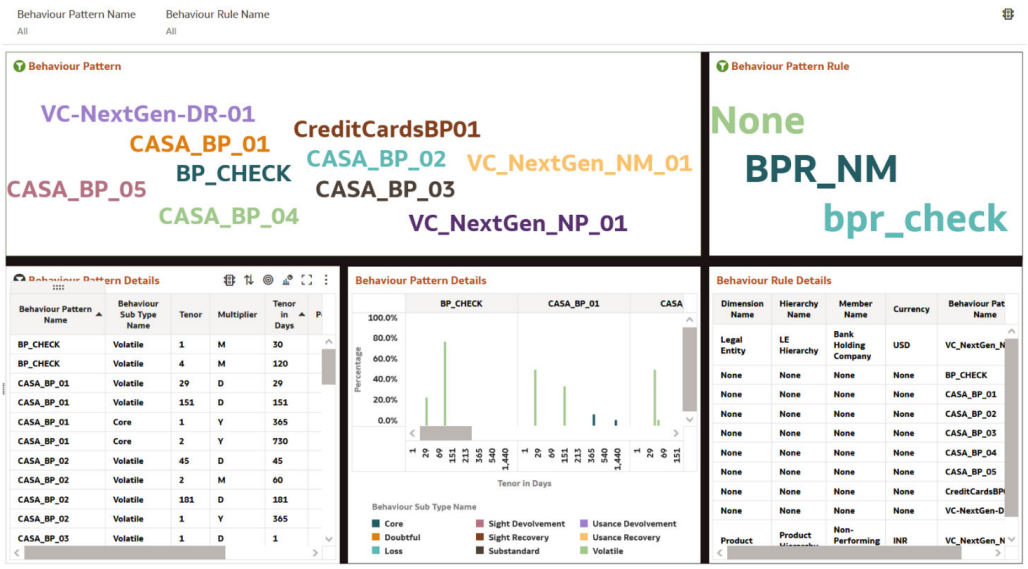


5.1.7.2.2 Behaviour Pattern

This report displays the all behavior pattern rules configured in ALM.

- **Behaviour Pattern Name:** You can use this filter to select a specific Behavious Pattern Name to be applied to the ALM Assumption data.
- **Behaviour Rule Name:** You can use this filter to select a specific Behavious Rule Name to be applied to the ALM Assumption data.

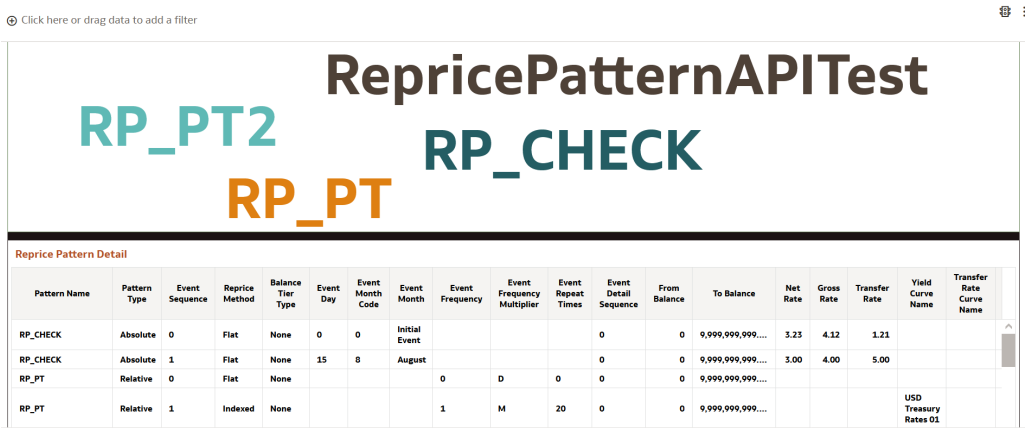
Figure 5-132 Behaviour Pattern Report



5.1.7.2.3 Repricing Pattern

This report displays the all Repricing Pattern rules configured in ALM.

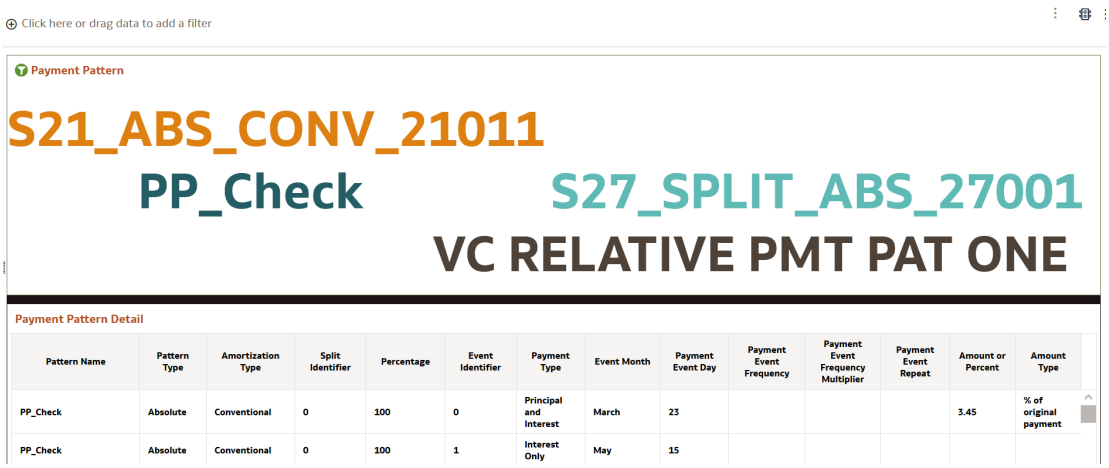
Figure 5-133 Repricing Pattern Report



5.1.7.2.4 Payment Pattern

This report displays the all payment pattern rules configured in ALM.

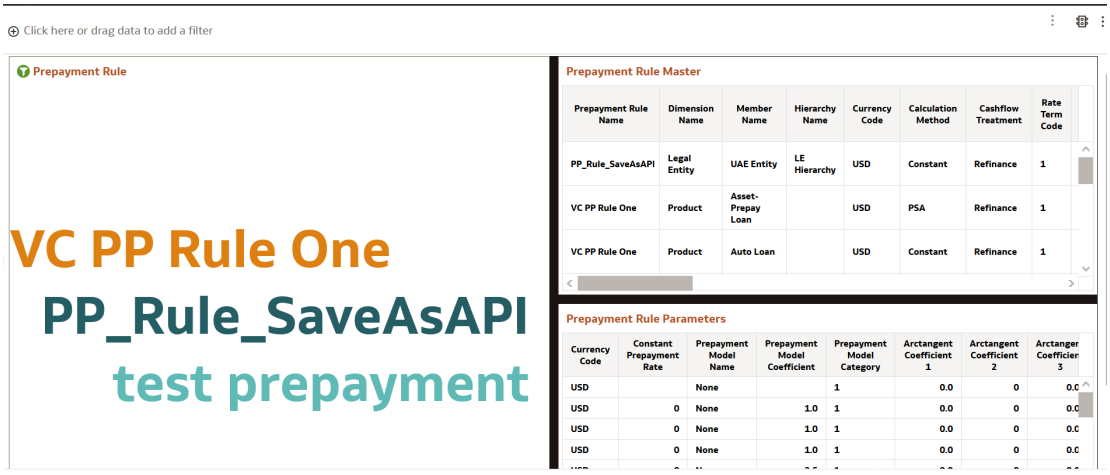
Figure 5-134 Payment Pattern Report



5.1.7.2.5 Prepayment Rule

This report displays the Prepayment rule defined as part of assumptions.

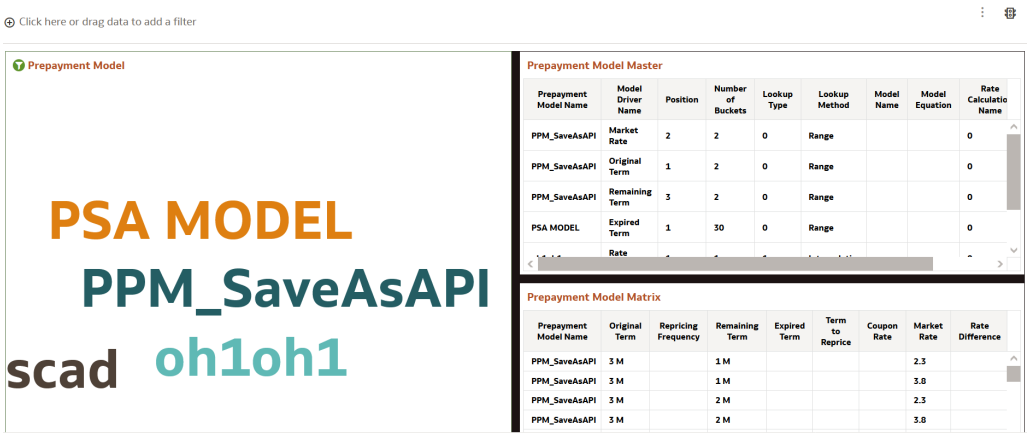
Figure 5-135 Prepayment Rule Report



5.1.7.2.6 Prepayment Model

This report displays the Prepayment Model assumptions.

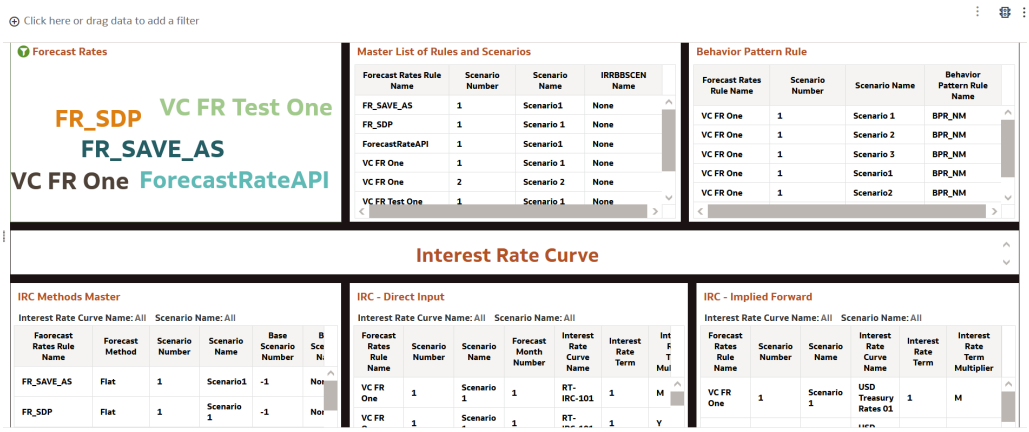
Figure 5-136 Prepayment Model Report



5.1.7.2.7 Forecast Rates

This report displays the IRC Name, IRC Term Point, Forecast Type, and Minimum Rate.

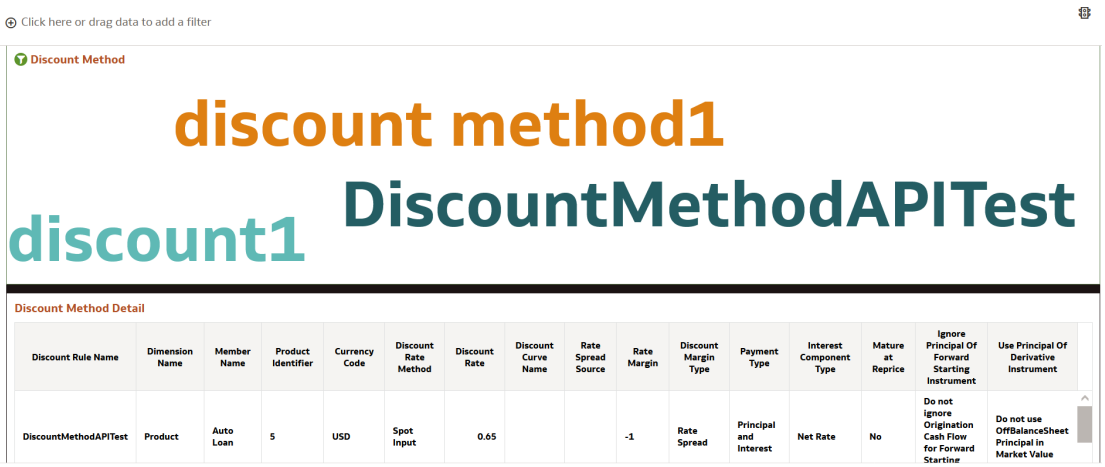
Figure 5-137 Forecast Rates Report



5.1.7.2.8 Discount Methods

Report displays the Discount Method assumptions

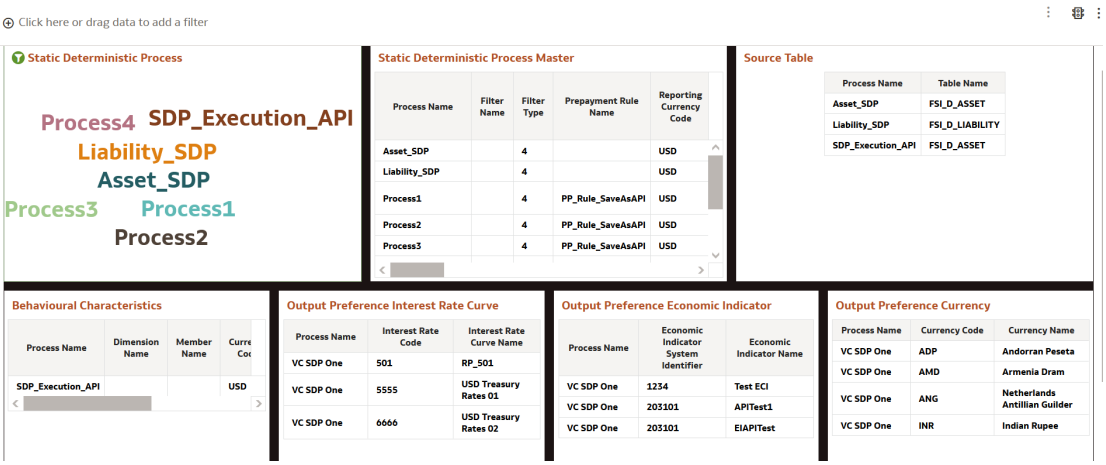
Figure 5-138 Discount Methods Report



5.1.7.2.9 Static Deterministic Process

Report displays the static deterministic process assumptions defined for the particular process run.

Figure 5-139 Static Deterministic Process Report



6
Technical Documents

This chapter covers the following topics:

1. A download specification provides an efficient way to manage the sourcing of data into the staging area. This is done by mapping the staging model at a column level to use cases.
   For the Asset Liability Management Cloud Service Download Specifications, see the MOS Doc ID 2940325.1.
2. The Reference Guide emphasizes business analysis and provides definitions, analytical concepts, processes, and calculations used in the Oracle Financial Services Cash Flow Engine (CFE). The information provided includes data requirements, payment and repricing event logic, calculation formulas, and various methodologies used to produce cash flows.
   For the Reference Guide , see the Reference Guide.
3. This guide contains detailed information necessary for correct data population, including field definitions, and recommended default values for the cash flow processing fields. For more information, see Data Dictionary Guide