Oracle Financial Services

Prepayment Models

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Oracle Financial Services Prepayment Models, Release 22.12.01

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Contents

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Get Help

Topics:

1.1 Get Help in the Applications

Use Help icons to access help in the application.

Note that not all pages have Help icons. You can also access the Oracle Help Center to find guides and videos.

Additional Resources

- Community: Use Oracle Cloud Customer Connect to get information from experts at Oracle, the Partner Community, and other users.
- Training: Take courses on Oracle Cloud from Oracle University.

1.2 Learn About Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program. Videos included in this guide are provided as a media alternative for text-based topics also available in this guide.

1.3 Get Support

You can get support at My Oracle Support.

For accessible support, visit Oracle Accessibility Learning and Support.

1.4 Get Training

Increase your knowledge of Oracle Cloud by taking courses at Oracle University.

1.5 Join Our Community

Use Cloud Customer Connect to get information from industry experts at Oracle and in the Partner Community. You can join forums to connect with other customers, post questions, and watch events.

1.6 Share Your Feedback

We welcome your feedback about Oracle Applications User Assistance. If you need clarification, find an error, or just want to tell us what you found helpful, we did like to hear from you.

You can email your feedback to My Oracle Support.

Thanks for helping us improve our User Assistance!

1.7 Before You Begin

Refer to following Documents:

- See What's New

2
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:

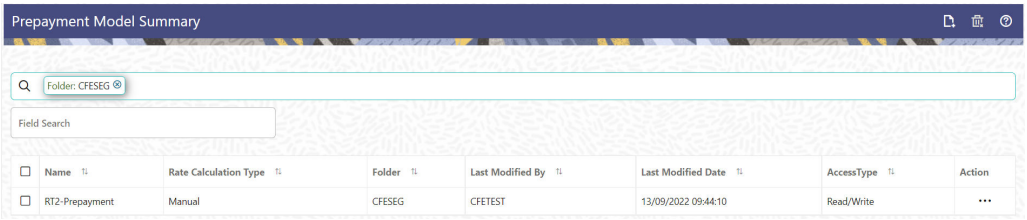
2.1 Prepayment Model Summary Page

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 2-1 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 2-1 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 2-2 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.

2.2 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.

2.3 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:

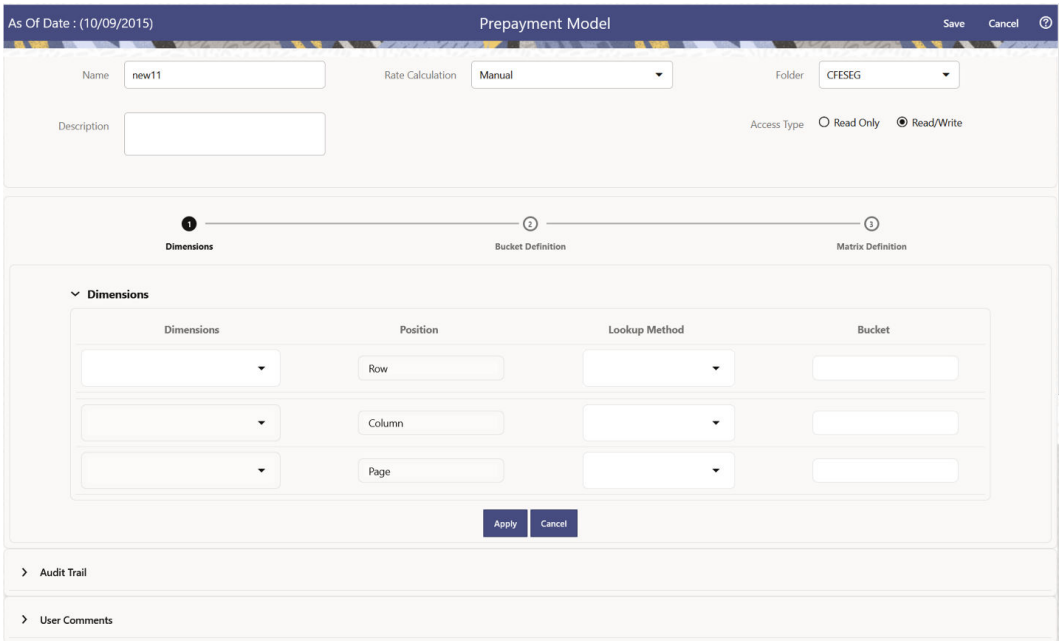
- Creating Prepayment Model with Rate Calculation as Manual
- Creating Prepayment Model with Rate Calculation as External Model

2.3.1 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 2-2 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

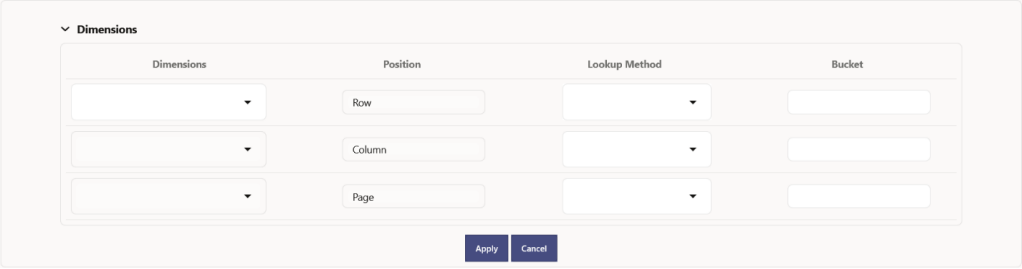
   Prepayment Rates Using Matrix Definition

2.3.1.1 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 2-3 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.

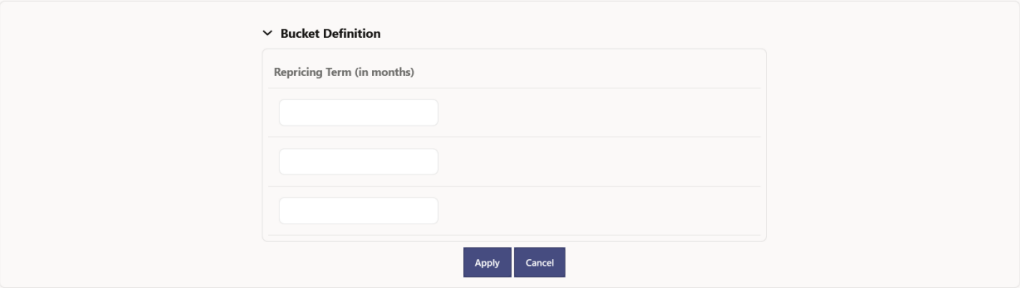
2.3.1.2 Modifying the Table Structure Using Bucket Definition section

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 2-4 Bucket Definition Section



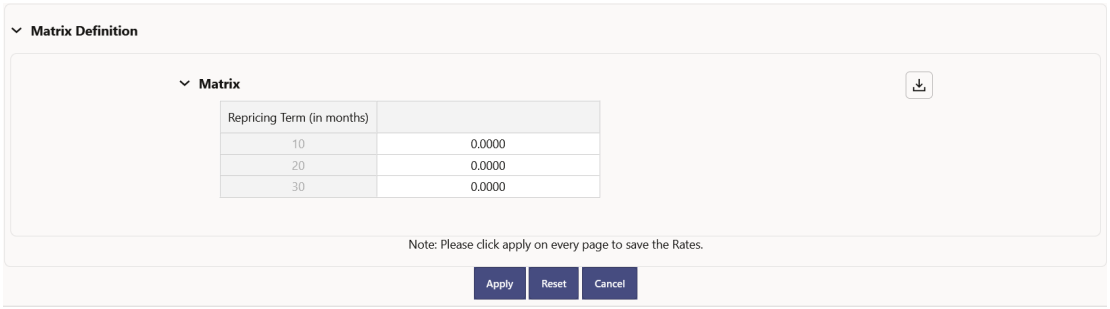
1. Assign values for each of the buckets.
2. Click **Apply**. The Prepayment Model, Prepayment Dimensions, and Buckets are saved.

2.3.1.3 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 2-5 Matrix Definition Section

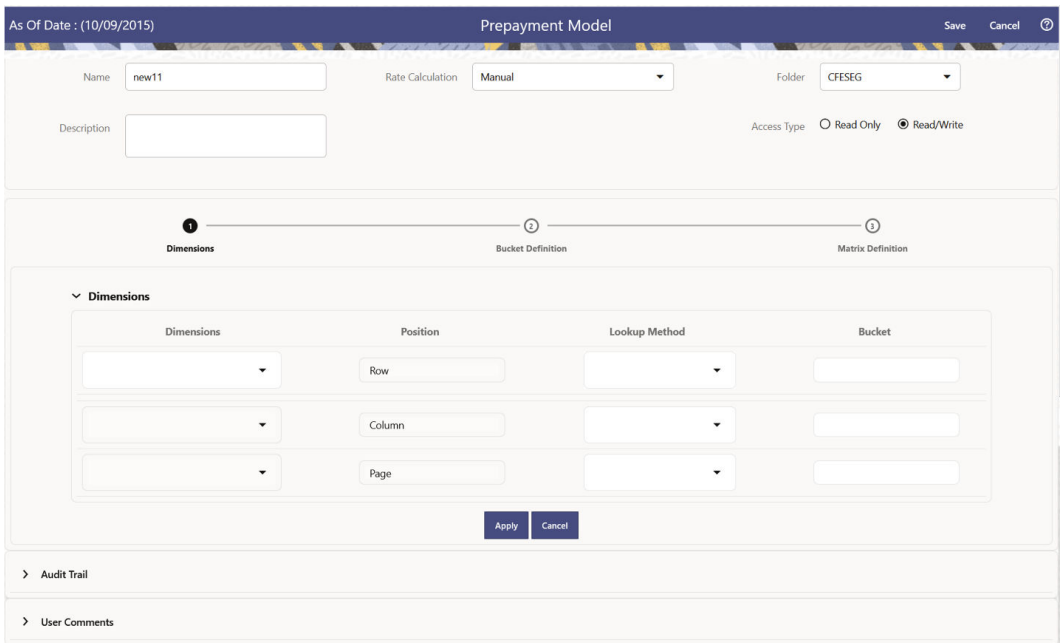


2.3.2 Creating Prepayment Model with Rate Calculation as External Model

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 2-6 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

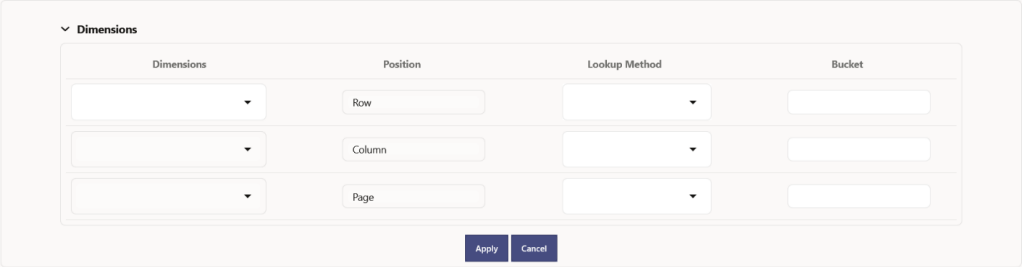
   Prepayment Rates Using Matrix Definition

2.3.2.1 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 2-7 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

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  5

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  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.

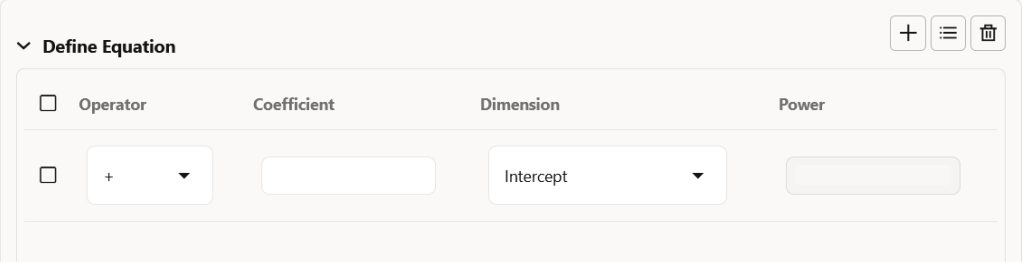
2. If required, repeat the previous three steps for up to two additional Dimensions.

> **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.

2.3.2.2 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 2-8 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**.

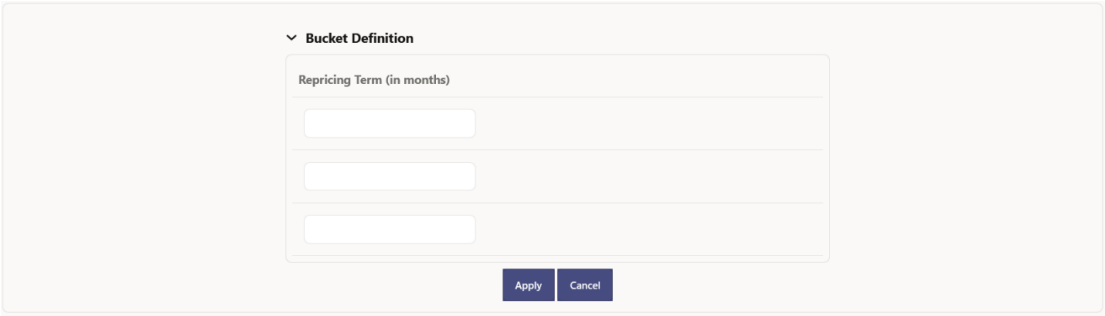
2.3.2.3 Modifying the Table Structure Using Bucket Definition section

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 2-9 Bucket Definition Section



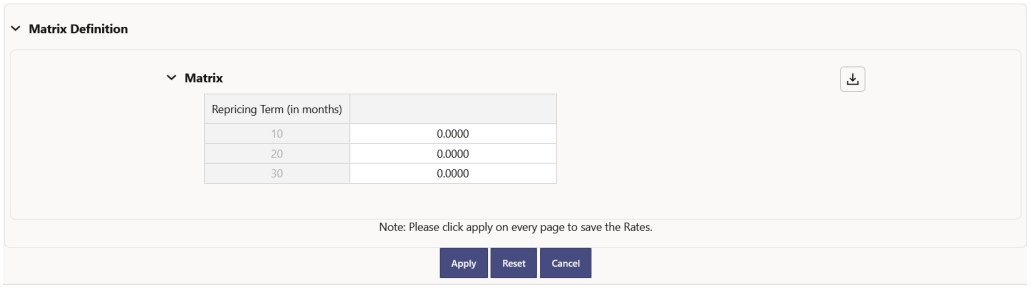
1. Assign values for each of the buckets.
2. Click **Apply**. The Prepayment Model, Prepayment Dimensions, and Buckets are saved.

2.3.2.4 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 2-10 Matrix Definition Section



2.4 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.

2.5 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.

2.6 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.

2.7 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.