

Oracle Financial Services Interest Rate Curve

User Guide

Release 22.06.01

Jun 2022



Oracle Financial Services Interest Rate Curve User Guide

Copyright © 2022 Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable.

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are “commercial computer software” pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

For information on third party licenses, see the [OFSA Licensing Information User Manual](#).

Document Control

Version Number	Revision Date	Change Log
1.0	June 2022	Created and released the Oracle Financial Services Interest Rate Curve User Guide.

Table of Contents

- 1 Get Help 5**
 - 1.1 Get Help in the Applications 5
 - 1.1.1 *Additional Resources* 5
 - 1.2 Learn About Accessibility 5
 - 1.3 Get Support..... 5
 - 1.4 Get Training..... 5
 - 1.5 Join Our Community 6
 - 1.6 Share Your Feedback 6
 - 1.7 Before You Begin 6
- 2 Interest Rate Curve 7**
 - 2.1 Searching for Interest Rate Curve 7
 - 2.2 Creating an Interest Rate Curve..... 8
 - 2.2.1 *Interest Rate Curve Tabs*..... 9

1 Get Help

Topics:

- [Get Help](#)
- [Learn About Accessibility](#)
- [Get Support](#)
- [Get Training](#)
- [Join Our Community](#)
- [Share Your Feedback](#)
- [Before You Begin](#)

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.

1.1.1 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, and are 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'd 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

See the following Documents:

- See [What's New](#)
- [Getting started with Profitability and Balance Sheet Management Cloud Service](#)

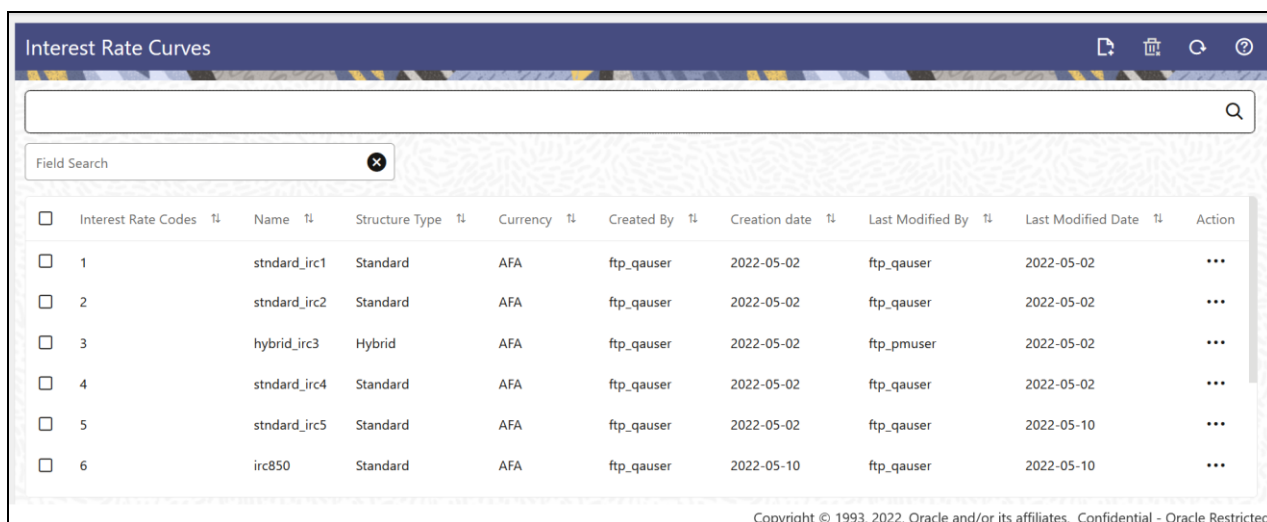
2 Interest Rate Curve

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 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.

Historical Interest Rate Data is utilized in PBSM 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 1: Interest Rate Curves Summary Page



Interest Rate Codes	Name	Structure Type	Currency	Created By	Creation date	Last Modified By	Last Modified Date	Action
1	standard_irc1	Standard	AFA	ftp_qauser	2022-05-02	ftp_qauser	2022-05-02	...
2	standard_irc2	Standard	AFA	ftp_qauser	2022-05-02	ftp_qauser	2022-05-02	...
3	hybrid_irc3	Hybrid	AFA	ftp_qauser	2022-05-02	ftp_pmuser	2022-05-02	...
4	standard_irc4	Standard	AFA	ftp_qauser	2022-05-02	ftp_qauser	2022-05-02	...
5	standard_irc5	Standard	AFA	ftp_qauser	2022-05-02	ftp_qauser	2022-05-10	...
6	irc850	Standard	AFA	ftp_qauser	2022-05-10	ftp_qauser	2022-05-10	...

2.1 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.

2.2 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 PBSM, 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.

2.2.1 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.

2.2.1.1 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 2: Terms & Attributes Tab

Terms & Attributes			Historical Rates		Hybrid Term Structure	
Curve Identifier Par Treasury						
<input type="checkbox"/> Term	Multiplier	Rate Format	Compounding Basis	Accrual Basis	Actions	
<input type="checkbox"/> 1	Months	Zero Coupon Yield	Annual	Actual/Actual		
<input type="checkbox"/> 2	Months	Zero Coupon Yield	Annual	Actual/Actual		
<input type="checkbox"/> 6	Months	Yield to Maturity	Annual	30/360		
<input type="checkbox"/> 1	Years	Yield to Maturity	Annual	30/360		
<input type="checkbox"/> 2	Years	Yield to Maturity	Annual	30/360		

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.

2.2.1.2 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

2.2.1.2.1 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.

2.2.1.2.2 Deletion of Historical Rates

To delete Historical Rates entered, select one or more rows and then click Delete.

2.2.1.2.3 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.

2. On the Interest Rates toolbar, click the **Import** icon. Select the file containing the Historical Rates.
3. 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.
4. Add or edit data if required.
5. Click **Apply** to save.

2.2.1.3 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 PBSM 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.

2.2.1.4 Define a Hybrid Curve

Defining a Hybrid Curve supports four different definitions based on the Hybrid Curve Type.

2.2.1.4.1 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.

2.2.1.4.2 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.

2.2.1.4.3 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.

2.2.1.4.4 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.

2.2.1.5 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.

OFSAA Support

Raise a Service Request (SR) in [My Oracle Support \(MOS\)](#) for queries related to the OFSAA Applications.

Send Us Your Comments

Oracle welcomes your comments and suggestions on the quality and usefulness of this publication. Your input is an important part of the information used for revision.

- Did you find any errors?
- Is the information clearly presented?
- Do you need more information? If so, where?
- Are the examples correct? Do you need more examples?
- What features did you like most about this manual?

If you find any errors or have any other suggestions for improvement, indicate the title and part number of the documentation along with the chapter/section/page number (if available) and contact the My Oracle Support.

Before sending us your comments, you might like to ensure that you have the latest version of the document wherein any of your concerns have already been addressed. You can access My Oracle Support site that has all the revised or recently released documents.

