

Oracle Financial Services

Interest Rate Curves



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Get Help

Topics:

- [Get Help in the Applications](#)
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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](#)

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Interest Rates

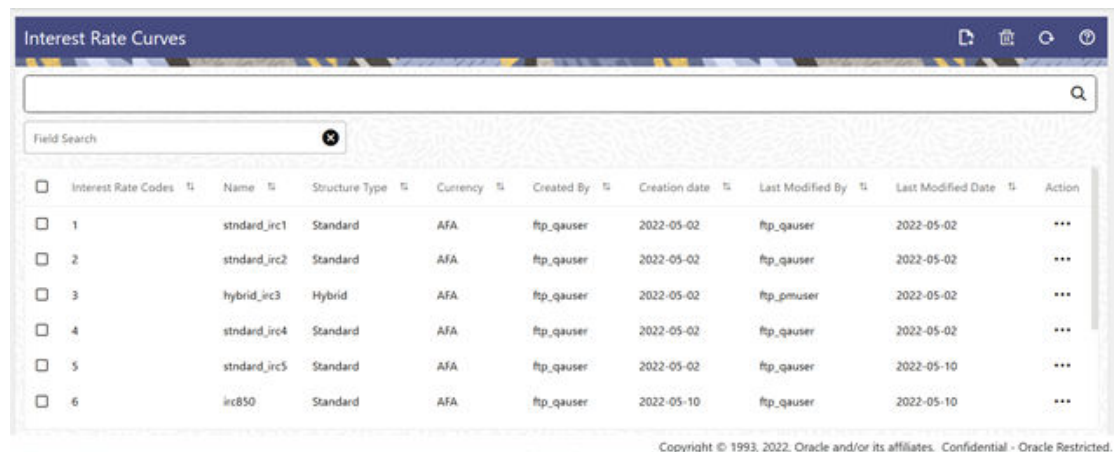
The quality and availability of Interest Rate information vary throughout the world. In many markets, gathering comprehensive rate information is a challenge because of insufficient security types, inconsistent quoting conventions, and lack of liquidity. The Interest Rate Curve in Cloud Service allows 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.

Interest Rate Rule Summary

This page is the gateway to all Interest Rate Rules and related functionality. You can navigate to other pages relating to Interest Rate Rules from this point.

Figure 2-1 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_gauser	2022-05-02	ftp_gauser	2022-05-02	...
2	standard_irc2	Standard	AFA	ftp_gauser	2022-05-02	ftp_gauser	2022-05-02	...
3	hybrid_irc3	Hybrid	AFA	ftp_gauser	2022-05-02	ftp_gauser	2022-05-02	...
4	standard_irc4	Standard	AFA	ftp_gauser	2022-05-02	ftp_gauser	2022-05-02	...
5	standard_irc5	Standard	AFA	ftp_gauser	2022-05-02	ftp_gauser	2022-05-10	...
6	irc850	Standard	AFA	ftp_gauser	2022-05-10	ftp_gauser	2022-05-10	...

Search Interest Rate Rule

Prerequisites: Predefined Interest Rate Rule

To search for a Interest Rate Rule, follow these steps:

Click **Search** after entering the search criteria. The search results are displayed in a table containing all the Interest Rate Rules that meet the search criteria.

Or

The other method to search a Interest Rate Rule is using the **Field Search** option. The Field Search is an inline wildcard UI search that allows you to enter value partially or fully and the rows that match the entered string in any of its column is fetched in the Summary table. Enter

the **Interest Rate Code**, **Name**, **Currency**, **Rate Format**, and **Structure Type** of the Interest Rate Rule and click **Search** .

The Interest Rate Rule summary table displays the following columns:

- **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.
- **Action:** Displays the following list of actions that can be performed on the selected Interest Rate Rule.
 - **Add:** Click **Add** icon at the top right of the summary page to build a new Interest Rate 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:** You can view existing Interest Rate Rule, and you can edit existing Interest Rate Rules, provided you have read/write privileges. View/Edit to view or edit the contents of a Interest Rate Rule in Read/Write format. Depending on user privileges the Rule will open in either View or Edit mode.
 - **Save As:** You can copy Interest Rate Rules to avoid having to enter data multiple times. This saves time and effort and reduces mistakes. Click on the **Action** icon against the Interest Rate Rule Name and select **Save As** to create a copy of an existing Interest Rate Rule.
 - **Delete:** You can delete Interest Rate Rules that are no longer required. Click on the **Action** icon against the Interest Rate Rule Name and select **Delete** to delete an existing Interest Rate Rule.

 Note:

A Interest Rate Rule cannot be retrieved after deletion. Restrictions on deleting Interest Rate Rules are:

- * You cannot delete Interest Rate Rules if you have only Read privileges. Only users with Read/Write privileges and Interest Rate Rule owners can delete Interest Rate Rules.
- * You cannot delete a Interest Rate Rule that has a dependency.

- **Dependency Check:** You can check dependencies for rules to know where a particular Interest Rate Rule has been used. This also prevents accidental deletion of rules having dependencies. Click on the **Action** icon against the Interest Rate Rule Name and select Dependency Check to generate a report on all Rules that utilize your selected Interest Rate Rule.

 Note:

This is functionality will be released in future.

Also See:

- [Create Interest Rate Rule](#)

2.1 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.
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 Standard, Hybrid Yield Curve, and Managed Rates Definitions. Hybrid Yield Curves are re-expressions of one or more pre-existing Standard Yield Curves. For more information, see [Hybrid Term Structure](#). Managed Rates are free form, user-defined formula, that is, equation based objects. For more information, see [Managed Rates](#). Standard Interest Rate Curves are used to define the Yield Curve and to add, edit, or delete Historical Interest Rate Data. After you have saved the Yield Curve, you cannot change the selected Structure Type.
- The Interest Rate Curve Tabs are:
 - Terms & Attributes
 - Historical Rates
 - Parameters
 - Hybrid Term Structure
 - Managed Rates

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.

2.1.1 Terms & Attributes

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 2-2 Terms and Attributes Tab

Terms & Attributes			Historical Rates		Hybrid Term Structure	
☐	Term	Multiplier	Rate Format	Compounding Basis	Accrual Basis	Actions
☐	1	Months	Zero Coupon Yield	Annual	Actual/Actual	
☐	2	Months	Zero Coupon Yield	Annual	Actual/Actual	
☐	3	Months	Zero Coupon Yield	Annual	Actual/Actual	
☐	6	Months	Zero Coupon Yield	Annual	Actual/Actual	
☐	1	Years	Zero Coupon Yield	Annual	Actual/Actual	
☐	2	Years	Zero Coupon Yield	Annual	Actual/Actual	

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.

2.1.2 Parameters Tab

Fixed income instruments are used for forecasting and simulating the Cash Flows. The Cash Flow Engine needs interest rate models to simulate the evolution of interest rates. The Cash Flow Engine uses these models as part of the stochastic engine. You can enter the parameters for these models in the following ways:

- System-generated calculations through Parameter Estimation
- Direct input into the UI
- Excel Import

- Data Loader

The following interest rate models are available:

- Extended Vasicek
- Ho and Lee
- Merton
- Vasicek

Parameter Estimation

This section explains the procedure to calculate the estimated parameters.

Conditions for Parameter Estimation

If the following conditions are met, you can calculate parameters for any Term Structure Model for a given Effective Date, based on your relative look back term and a sufficient number of observations (available historical rates) for the IRC. If you rerun with a different look-back term, it will overwrite the existing parameters for the selected Term Structure Model on that IRC's Effective Date.

- **Term point:** Underlying historical rates must be available for a 30-Day or 1-Month term point.
- **Minimum Number of historical rates:** A total of at least 10 historical rates (observations) are required, on appropriate look-back dates.
- **Lookback Dates:** Historical rates must be available on dates looking back from the Parameter's Effective Date (the End Date), in 30-day intervals moving backward from End Date to Start Date, for a minimum of 10 intervals.
For example: If the first rate's Effective Date is 1 Jan. 2013, then the second rate's date must be 2 Dec. 2012 (1 Jan. 2013, 30 days = 2 Dec. 2012), and so on. If a rate is not found for the required date, the engine looks for a rate within the neighborhood of 5 days up or down (therefore a total range of 10 days), searching iteratively starting with Date -1, then Date +1, through Date +5, then Date -5. The next rate lookup would be 60 days before the End Date, and so on.

The minimum relative term for all lookbacks must be at least 300 Days (that is, to accommodate a minimum of ten 30-day intervals). Using the above logic, if a rate is not found for the lookup date (or date within the neighboring range), an error will be logged in FSI_PROCESS_ERRORS with ID_Number to identify the Interest Rate Code, and the parameter estimation Engine will exit.

To define the Parameter Estimation, follow these steps:

1. Navigate to Parameters tab of Interest Rate Curve.

Figure 2-3 Parameters Tab on Interest Rate Curve window

Effective Date	Term Structure Model	Mean Reversion Speed	Long Run Rate	Volatility	Rate Data Source
No data to display.					

2. Enter the Effective Date Range filter.
3. After clicking Add, default parameters for the **Extended Vasicek Model** are displayed for one Effective Date (the System Date on which the Interest Rate Code was created). You can edit these parameters or add new parameters using **Add**.
4. Enter the **Effective Date**. Note that the **Effective Date** cannot be greater than the **Current System Date**.
5. Select the Model from the **Term Structure Model** drop-down list. Effective Date and Term Structure Model combination must be unique within this IRC.
6. The following term structure models of interest rates:
 - Extended Vasicek
 - Ho and Lee
 - Merton
 - Vasicek
7. The following parameters needed by the models:

Table 2-1 List of supported parameters for Models Term structure models in Interest Rate

Model	Parameter 1	Parameter 2	Parameter 3
Extended Vasicek	Volatility	Mean Reversion Speed	
Ho and Lee	Volatility		
Merton	Volatility		
Vasicek	Volatility	Mean Reversion Speed	Long Run Rate

8. Enter values for **Long Run Rate** and **Volatility** in percentages. For example, a Long Run Rate of 5% is displayed as 5.000. To maintain the integrity of data, Rate Management restricts the accepted input values. The valid range and the default setting for each parameter.

Table 2-2 Valid Range and Default Values of Interest Rate Parameters

Parameter	Valid Range	Default Value
Volatility	0% to 500%	0.01
Mean reversion speed	0.00 to 500	0.0
Long run rate	0.00% to 500%	0.0

9. Click Apply.

2.1.3 Historical Rates

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

2.1.3.1 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.

2.1.3.2 Deletion of Historical Rates

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

2.1.3.3 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.

2.1.4 Hybrid Interest Rate Curves

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.

2.1.4.1 Define 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](#)

2.1.4.1.1 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.

2.1.4.1.2 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.

2.1.4.1.3 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.

2.1.4.1.4 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.

2.1.4.2 Generate Hybrid 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.

2.1.5 Managed Rates

Managed rates are IRC objects that are based on a logical and/or mathematical formula instead of being based on a yield curve. This is useful if you do not have a straight forward application function that generates a rate based on a formula. Managed Rates are formula-driven IRC (interest rate curve or yield curve) objects. The Managed Rates UI provides the following functionalities:

- Allows to create a managed rates formula with the help of equation builder.
- You can create a managed rates formula by using existing IRC, Currency, Economic Indicator objects and combining it with various mathematical operators.
- Execute managed rates using Scheduler Service

Managed Rate Formulas

Managed Rates are free form, user-defined formula, that is, equation based objects. You can use a variety of mathematical, logical, or reference functions to define a Managed Rate. Regardless of the complexity of the function, it always return only one numerical value every time when it is evaluated.

For example, there are three basic inputs for Market Rates formulas:

Numerical and mathematical values, including embedded functions (for example, "SUM" or "AVERAGE").

Existing Rate Management objects such as interest rate curves, economic indicators, and foreign currencies

Reference in time specification, that is, a relative or absolute reference in time either in the past, present, or future.

**Note:**

Formulas are statements. These can be mathematical, logical, or reference one or more Application objects, but it returns a *single* numerical value.

For example:

Formula input: 1+1

Returns: 2

It is not mandatory to include the "=" symbol in the expression as this is already implied.

There is no nominal value of the rate, that is, it cannot be an accrual, day count, compounding, or other rate identities; it is simply a number.

Basic syntax is required if other service objects are reference, then you must specify three distinct components:

1. Object type code or name
2. Object ID
3. Tenor
4. Place in time in the forecast

[Object type code].[Object ID].[Tenor if IRC, 0 if anything else].[Place in time]

For example, suppose you want a formula that refers to an interest rate curve's 1 month tenor on a current basis, then its syntax would look something like this:

Figure 2-4 Example of Managed Rate

The screenshot displays the Oracle Financial Services Manager interface. The top navigation bar includes tabs for 'Terms & Attributes', 'Historical Rates', 'Parameters', 'Hybrid Term Structure', and 'Managed Rates'. The 'Managed Rates' tab is active. On the left, a search bar is present above a tree view. The tree view shows a hierarchy: 'Interest Rates Curve' (expanded) contains '700-T-USD' and '202-IRC_202-USD' (expanded). Under '202-IRC_202-USD', the '1M' tenor is selected. The right pane shows the formula 'IRC(IRC_202,1M,0)'.

Here,

[IRC_202] is the IRC code (Object ID)

[1M] is the Term.

[0] is time. This calculates Past, present or future dates/rates with ease for any term/tenor and forecast method definition. The default value is 0. [0] means the now. [-1] refers to back one period. [\$] refers to constrained time period.

**Note:**

If the time value falls outside of provided numbers, the Application will refer to the closest matching value. If no value can be retrieved or if the value is null, then the Managed Rate formula will not be evaluated.

Managed Rate Processes

When you validate Managed Rates, it is processed under two conditions:

1. Managed Rates for Historical Values

You can use the entered managed rate to derive one or more historical values as specific points in time at or before the current As-of Date.

Function is executed at the Rate Management level for Managed Rate functions. Specify one or more historical dates that you want to processed and then execute a batch to derive the associated values. All historical values would be stored in a managed rate historical table.

If a Managed Rate formula has time references that are constrained, the formula will default to the last available value provided. If no value is provided (e.g. value cannot be retrieved or is null), then no rate will be provided for that historical date.

2. Managed Rates for Forecasted Values

For forecasted values in an ALM process as established in Forecast Rates. Managed Rates will be forecasted using the forecasted base objects like IRC, Currency and Economic Indicator.

For more information, see [Interest Rate Forecast Methods](#).

To define Managed Rate, follow these steps:

1. Select **Structure Type** as **Managed Rates**.
2. Navigate to **Managed Rates** tab.

**Note:**

This tab will be active only when **Structure Type** is selected as **Managed Rates**.

3. Select the Function type as Interest Rate Curve, Currency, or Economic Indicator to define a formula.
4. Double-click the Function code to move it to Formula section.
5. Update the formula. Use arithmetical operator from Operator to define formula if required.

Figure 2-5 Formula section
Interest Rate Curve

This function evaluates rate of selected term point of Interest Rate Curve, in the past, present or future

IRC(Name, Term_Point, Time_Reference) Time_Reference indicates the rate to be forward or backward looking. 0 indicates current period, positive value indicate forward time and negative value indicates prior period. It can also be relative (moving) or absolute (fixed). Use '\$' symbol for absolute Term Reference.

Currency

This function evaluates exchange rate of selected currency pair in the past, present or future

CCY(From_Currency, To_Currency, Time_Reference) Time_Reference indicates the rate to be forward or backward looking. 0 indicates current period, positive value indicate forward time and negative value indicates prior period. It can also be relative (moving) or absolute (fixed). Use '\$' symbol for absolute Term Reference.

Economic Indicator

This function evaluates value of selected Economic Indicator in the past, present or future

ECOIND(Name, Time_Reference) Time_Reference indicates the rate to be forward or backward looking. 0 indicates current period, positive value indicate forward time and negative value indicates prior period. It can also be relative (moving) or absolute (fixed). Use '\$' symbol for absolute Term Reference.

6. Click **Validate**. A successful formula validation message is displayed.
7. After defining and verifying the Managed Rates, execute the IRC using scheduler service.

Executing Managed Rates using Scheduler

To execute the batch, navigate to Operations and Processes and select Scheduler. Select Schedule Batch and search for **Historical Managed Rates** and execute.

OR

You can also define new batch to execute the Managed Rates 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 Component as **IRC Managed Rates**.
3. From the LHS menu, navigate to **Operations and Processes**, select **Scheduler**, and then select **Schedule Batch** to execute the batch. Select the batch and click Execute. For more details about Scheduler processes, see the Scheduler Services.
4. From the LHS menu, navigate to **Operations and Processes**, select **Scheduler**, and then select **Monitor Batch**. There may be multiple executions of the batch. Select the latest execution and click Start Monitor. The UI displays the status of the batch.

2.2 IRC Data Migration

On-prem to SaaS Migration

Data Export from On-prem

Users have to connect to the database and export the data in the prescribed CSV format. 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

Data Import to SaaS

For more information on importing the data, see [Interest Rates Loader](#).

SaaS to SaaS Migration

Data Export from SaaS

Users have to export data using the Data Maintenance Interface and select the VW_FSI_IRC_RATE_HIST view. For more information about how to export data using the Data Maintenance Interface, see [Data Maintenance Interface](#).

Data Import to SaaS

For importing the data, see [Interest Rates Loader](#).