Nasdaq Calypso

Product Details

Version 18

Revision 2.0

December 2024

Approved

1. Product Details Window

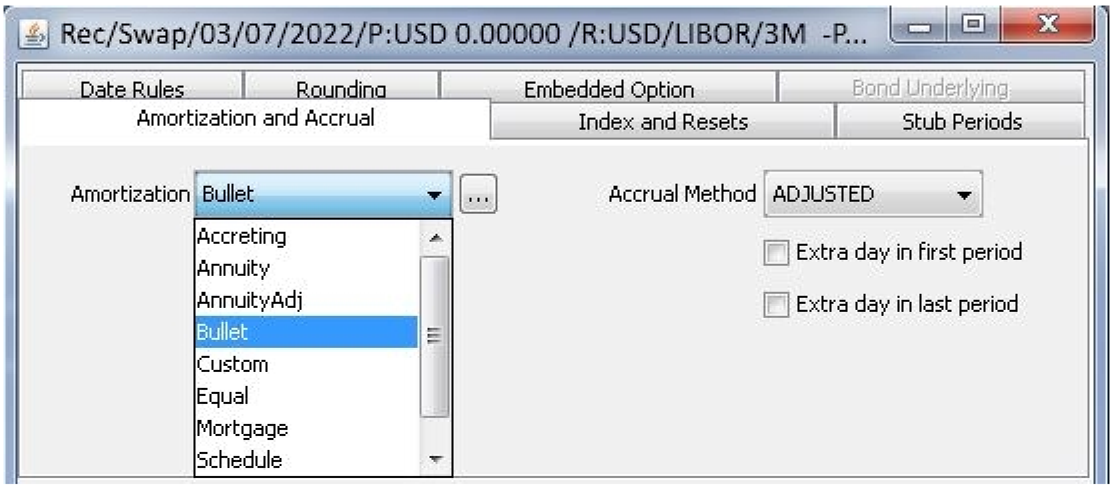
This window appears when you double-click any red label in a trade worksheet.

This documents describes the settings of the Product Detail window.

» Click **Apply** after setting the details, to apply them to the selected product (a swap, a cap floor, etc.) – You then need to generate the cashflows to view the changes.

1.1 Amortization and Accrual Panel

Select the Amortization and Accrual panel.



» Select the amortization structure from the Amortization field. Then click **...** to set the parameters of the selected structure. The default is Bullet (no amortization, no parameters are required). The amortization structures are described below. They are defined in the domain "principalStructure".

Not all amortizations structures are available for all products.

» Select the adjustment method of the accrual period from the Accrual Method field:

- ADJUSTED — Adjusts the period's end date if it falls on a non-business day, according to the payment date roll convention. Rolling the end date adjusts the period length, so a rolled date changes the interest amount.
- UNADJUSTED — Does not adjust the period's end date for non-business days.
- MAT_UNADJUSTED — Adjusts the period's end date if it falls on a weekend unless it is the last period (maturity), in which case it is not adjusted. Thus the adjustment method may affect intermediate interest amounts, but it does not change the maturity date.
- MAT_ADJUSTED — Adjusts only the last accrual period on a valid business day. Cashflows up to maturity are treated as unadjusted. If the end date of final accrual lands on a non-business day, however, it is adjusted to the next valid business day. The maturity date of the trade is not affected.
- FRN — Adjusts the period's end date for non-business days to the next business day unless the next business day is in the following month, in which case it uses the preceding business day.

» For trades using compounding, select from the Compounding Method field:
  - ADJUSTED — Adjusts the payment's begin/end dates if it falls on a non-business day, according to the payment date roll convention.
  - FRN — Adjusts the period's end date for non-business days to the next business day unless the next business day is in the following month, in which case it uses the preceding business day.
  - MAT_UNADJUSTED — Adjusts the period's end date if it falls on a weekend unless it is the last period (maturity), in which case it is not adjusted.
  - UNADJUSTED — Does not adjust the compound's begin/end date for non-business days.

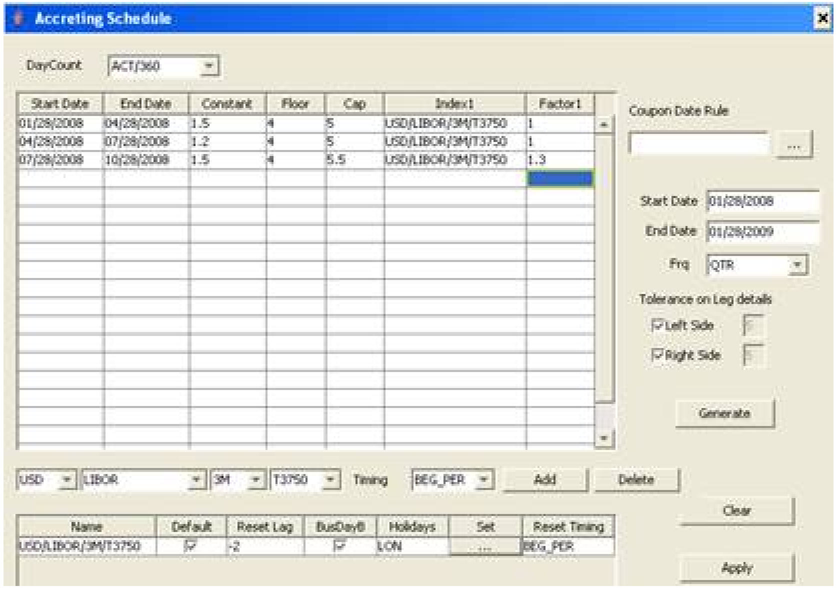
» Click “Extra day in first period” to add a day to the first payment period, or “Extra day in last period” to add a day to the last payment period. The system uses the daycount (nominator+1)/denominator on the first or last cashflow - For example ACT+1/360.

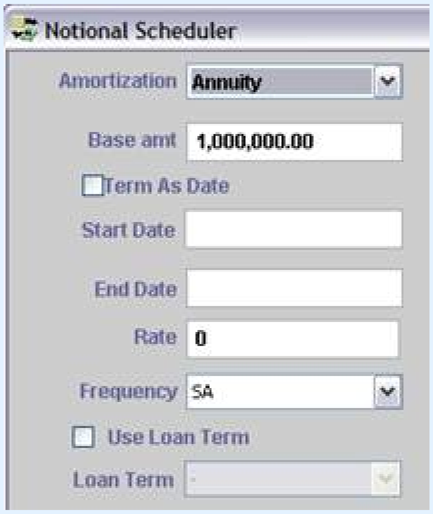
Amortization Structures

When a parametrized amortization type is used, it is possible to control the logic for the first amortization period by setting a true/false value for the domain "isAmortStartDateDirect":

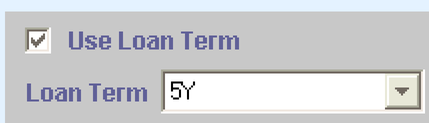
- When false (default), it assumes the first amortization occurs in the first coupon period where Pmt End Date >= Amort Start Date + Amort Tenor.
- When true, it assumes the first amortization occurs in the first coupon period where the Pmt End Date > Amort Start Date.

Values	Description
Accreting	The principal accrues according to a rate schedule. The rate schedule is based on a formula that can be made of a constant rate increase, a cap, a floor, and one or more rate indices with a factor. The accretion rate calculated by inputs from the current period is applied to the next period. The accretion rate index can reset at the beginning of the period or in arrears. Rate = (1st Factor * 1st Rate Index Reset + ... nth Factor * nth Rate Index Reset + Constant), and is compared to the cap and floor. For the cases with actual principal exchange, you have to set one more period as accretion end date. You can select “Accretion Sample Dts” from the Cashflow menu to view the reset dates of the rate schedule. Click ... to set the Accreting parameters. It brings up the Accreting Schedule window.

Values	Description
	 » Select a date rule from the Coupon Date Rule field to generate the schedule using the date rule, or select a frequency from the Frq field to generate the schedule using a frequency. » Enter start and end dates. » There are no tolerance days by default – Uncheck Left Side and/or Right Side to allow tolerance days on the left leg and/or right leg respectively. Enter the number of days. Default is 5. » Click **Generate** to generate the schedule. » Enter the constant rate increase, cap and floor as needed. You can also add a rate index with a factor over the index. To add a rate index, select a rate index and set all the required parameters on the index then click **Add**. You can then enter a factor. If you add multiple indices, you can enter a factor for each index. Index1 / Factor1 / Index2 / Factor2: USD/LIBOR/3M/T3750 / 1 / USD/LIBOR/6M/T3750 / 1 USD/LIBOR/3M/T3750 / 1 / USD/LIBOR/6M/T3750 / 1.2 USD/LIBOR/3M/T3750 / 1.3 / USD/LIBOR/6M/T3750 / 1.34 » Then click **Apply** to apply the amortization structure.
Annuity	The amount of each payment (interest + principal) remains constant over the life of the product. The interest payments are larger in the beginning and decrease over time, while the principal repayments are smaller in the beginning and increase over time. Click **...** to set the Annuity parameters. It brings up the Notional Scheduler window.

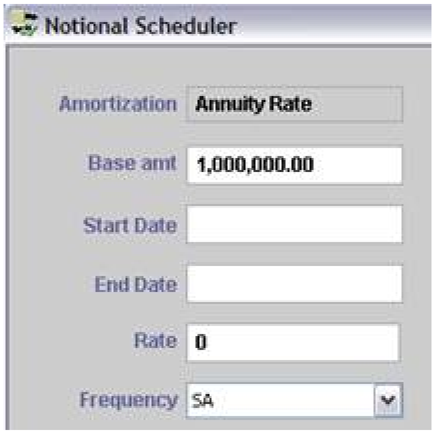
<table>
<tr><th>Values</th><th>Description</th></tr>
<tr><td></td><td>


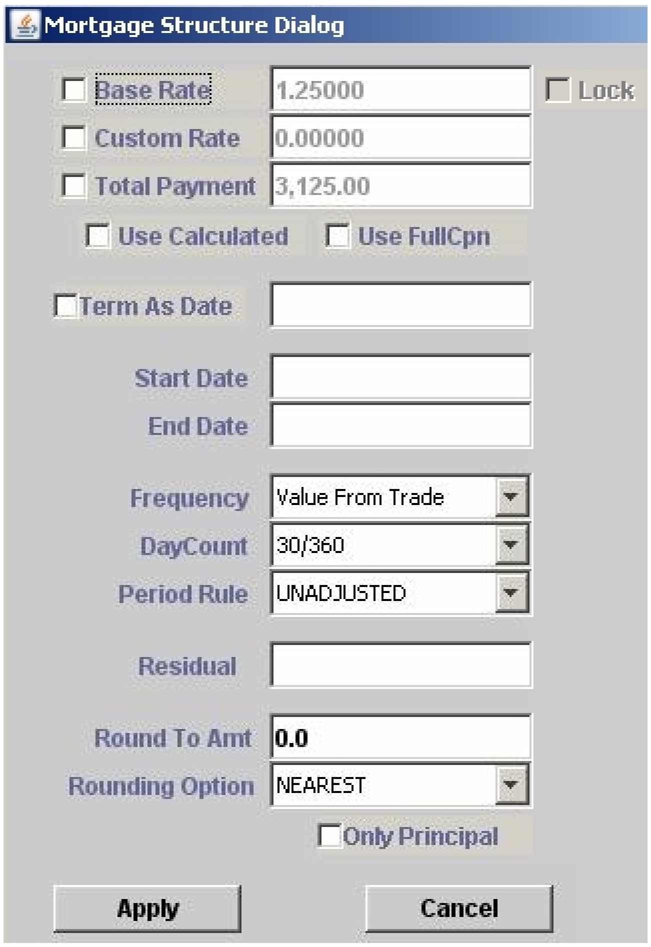
» Enter the initial principal amount in the “Base amt” field.
» Check the “Term As Date” checkbox to enter a date for the annuity term. Otherwise, the system uses the end date of the period.
» Enter the start and end dates for the amortization schedule if different from the trade’s dates, in the Start Date and End Date fields.
» Enter the fixed amortization rate in the Rate field.
» Select the amortization frequency from the Frequency field.
» Check the “Use Loan Term” checkbox to disable the Start Date and End Date fields. In this case, select a term from the Loan Term field. It can be greater than the duration of the product.



» Then click **Apply** to apply the amortization structure.
</td></tr>
<tr><td>AnnuityAdj</td><td>Select this for non-constant annuity payments. For calculations where Amort = Annuity on a cash instrument, it will take into account the exact number of days according to the daycount on intermediate amounts.

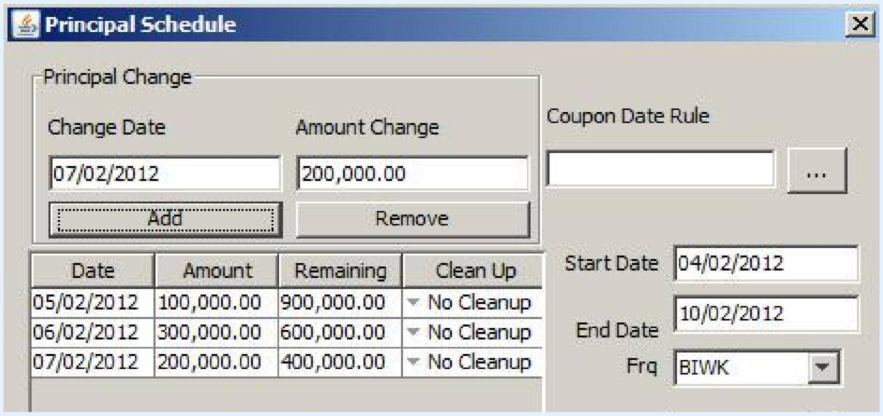
Click **...** to set the AnnuityAdj parameters. It brings up the Notional Scheduler window. See Annuity above for details.</td></tr>
</table>

Values	Description
	
Bullet	No amortization - No parameters are required.
Custom	The amortization structure is set to Custom by the system when you customize the cashflows.
Equal	The principal is amortized in equal payments, one for each interest period of the trade, so that the final repayment of principal occurs in the last interest period. In this case, the amortized principal is the same for each calculation period. Click ... to set the Equal parameters. It brings up the Notional Scheduler window.  » Enter the initial principal amount in the “Base amt” field. » Enter the start and end dates for the amortization schedule if different from the trade’s dates, in the Start Date and End Date fields. » Select the amortization frequency from the Frequency field. » Check the “Term As Date” checkbox to enter a date for the equal term. Otherwise, the system uses the end date of the period.

Values	Description
	» Then click **Apply** to apply the amortization structure.
Mortgage	You can define a Mortgage structure for Swaps, Cancellable Swaps, Caps & Floors, and Swaptions. The Mortgage structure ensures that the annuity (interest plus amortization) for every period is the same. It is similar to the Annuity structure, but it supports all daycount conventions, and periods of different length. Click **...** to set the Mortgage parameters. It brings up the Mortgage Scheduler window.  If you check "Use Calculated", the parameters are used to compute the amortization amount. Otherwise, they are used to compute the annuity amount (amortization plus interest). The base rate defaults to the fixed rate of the trade and the custom rate is an amortization rate that you can enter. » You can check Base Rate and Custom Rate, the annuity or amortization amount is computed using Base Rate + Custom Rate.

Values	Description
	You can also modify the base rate as needed. Or, you can check "Lock" to lock the base rate. » You can also check the Base Rate only or the Custom Rate only to compute the annuity or amortization amount. » Or, you can check Total Payment to set the interest amount as the annuity or amortization amount. » The "Use FullCpn" checkbox is only used in the case of a stub period. If you check "Use FullCpn", the full annuity or amortization amount is used for the stub period. Otherwise, it is prorated to the length of the stub period. » You can check the “Term As Date” checkbox to enter a date for the mortgage term. Otherwise, the system uses the end date of the period. » Enter the start and end dates for the amortization schedule if different from the trade’s dates, in the Start Date and End Date fields. » Select the amortization frequency from the Frequency field. It defaults to the trade’s payment frequency (Value from Trade). » Select a daycount from the DayCount field. It defaults to the trade’s payment daycount. » Select an adjustment method for the period from the Period Rule field. – ADJUSTED — Adjusts the period’s end date if it falls on a non-business day, according to the payment date roll convention. – UNADJUSTED — Does not adjust the period’s end date for non-business days. – MAT_UNADJUSTED — Adjusts the period’s end date if it falls on a weekend unless it is the last period (maturity), in which case it is not adjusted. Thus the adjustment method may affect intermediate amounts, but it does not change the maturity date. – FRN — Adjusts the period’s end date for non-business days to the next business day unless the next business day is in the following month, in which case it uses the preceding business day. » Enter the residual principal amount after the mortgage term completes in the Residual field as needed. It defaults to the notional amount of the period following the last selected period. » Enter the unit amount to which the mortgage amount should be rounded in the “Round to Amt” field, and select the rounding method from the Rounding Option field. For example, if “Round to Amt” is $1.00 and the rounding option is NEAREST, the mortgage amount will be rounded to the nearest dollar. You can check the “Only Principal” checkbox to apply the rounding conventions to the principal only. Otherwise, they also apply to the interest.

<table>
<tr><th>Values</th><th>Description</th></tr>
<tr><td></td><td>» Then click Apply to apply the amortization structure.</td></tr>
<tr><td>Negotiable</td><td>
Only applies to Cash trades.
To specify principal changes.
Click ... to set the Negotiable parameters. It brings up the Principal Schedule window.



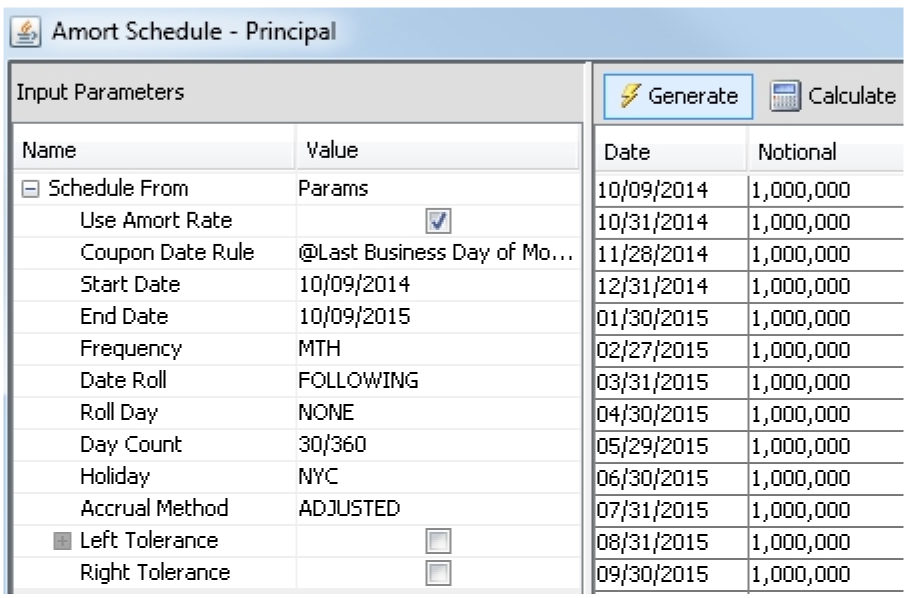
» Enter a date and an amount and click Add. The system displays the remaining principal after each principal change.
» You can also choose to perform interest cleanup on the principal change date:
– FFCP = False - The interest cleanup is split between the interest on the initial principal and the remaining principal.
– FFCP = True - The interest cleanup is split between the interest on the principal change amount and the remaining principal.
See below details
» Click Apply when you are done.
Interest Cleanup
If FFCP = False, the interest calculation is split as follows:
• First period:
Interest Cleanup = Principal on CF Start Date * Nb days from CF Start Date to first Cleanup Date * Rate / DayCount
• Subsequent period:
Interest Cleanup = Remaining principal on CF Cleanup Date * Nb days from previous Cleanup Date to Next Cleanup Date (or CF End Date) * Rate / DayCount
If FFCP = True, the interest calculation is split as follows:
• First period:
Interest Cleanup = Principal Change amount * Nb days from CF Start Date to first
</td></tr>
</table>

<table>
<tr><th>Values</th><th>Description</th></tr>
<tr><td></td><td>Cleanup Date * Rate / DayCount

• Second period:

Interest Cleanup = Remaining principal on CF Cleanup Date * Nb days from CF Start Date to Next Cleanup Date (or CF End Date) * Rate / DayCount</td></tr>
<tr><td>Schedule</td><td>To generate an amortization schedule according to a date rule and a set of parameters, or according to custom cashflows.

Click ... to set the Schedule parameters. It brings up the Schedule window.



Schedule from Parameters

» Select “Params” from the “Schedule From” field.
» Check the "Use Amort Rate" checkbox to use amortization rates.
» Select a date rule from the Coupon Date Rule field to generate the schedule using the date rule, or select a frequency from the Frequency field to generate the schedule using a frequency.
» Enter start and end dates.
» Select date roll information, daycount convention, holiday calendars, and the accrual method.
» Left Tolerance is set to False by default. Select True to allow tolerance days on the left leg, and enter the number of days. Default is 5.

» Right Tolerance is set to False by default. Select True to allow tolerance days on the</td></tr>
</table>

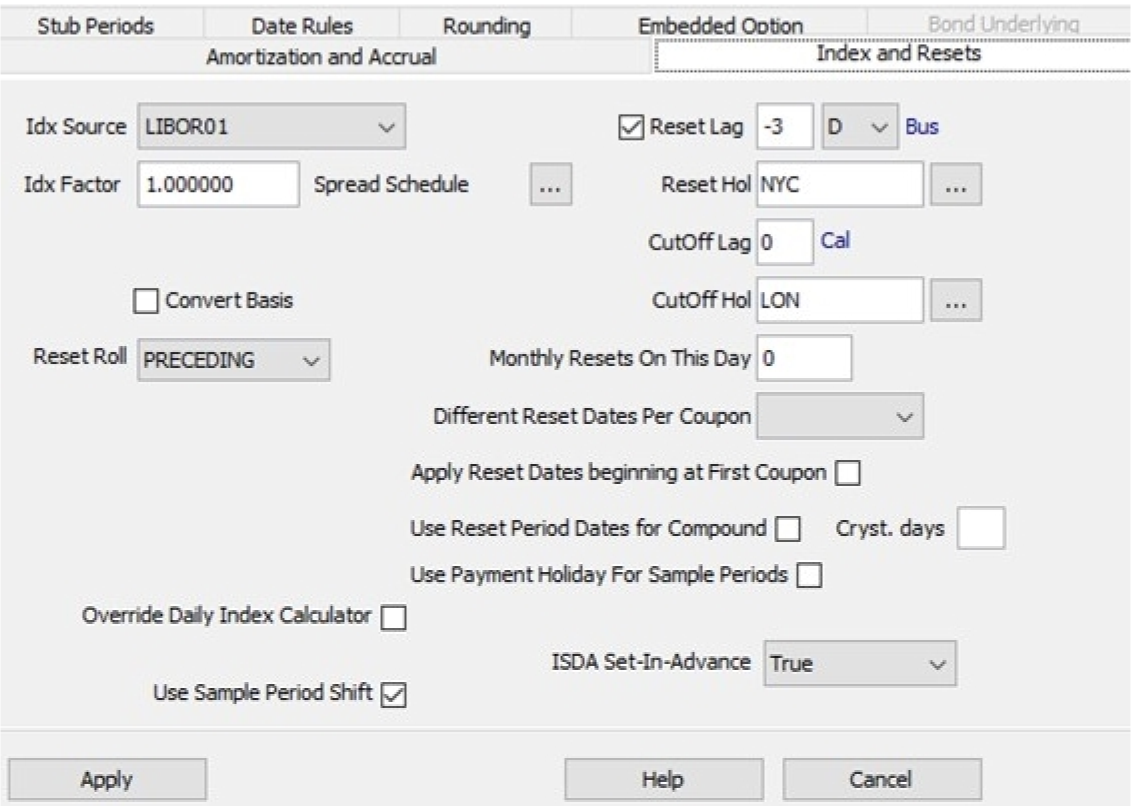
Values	Description
	right leg, and enter the number of days. Default is 5.  » Click **Generate Schedule** to generate the schedule. The schedule is generated by default for the full principal amount, you can modify it as needed. » Then click **Save** to apply the schedule. ***Schedule from Custom Cashflows*** Only applies if you have generated the cashflows on the trade. » Select "Cash Flows" from the "Schedule From" field. » Click **Generate Schedule** to generate the schedule based on the cashflows. You can modify as needed. » Then click **Save** to apply the schedule.
Step down	The Step down amortization structure is an incremental structure whereby the base amount decreases (or increases) by a certain amount for a set number of payment periods. Click **...** to set the Step down parameters. It brings up the Notional Scheduler window.  » Enter the initial principal amount in the "Base amt" field. » Enter the start and end dates for the amortization schedule if different from the trade's dates, in the Start Date and End Date fields. » Enter the step amount in the Increment field. » Select the amortization frequency from the Frequency field.

Values	Description
	» Click the operator that you want to use: +, -, x, or /. » Then click **Apply** to apply the amortization schedule.

1.2 Index and Resets Panel

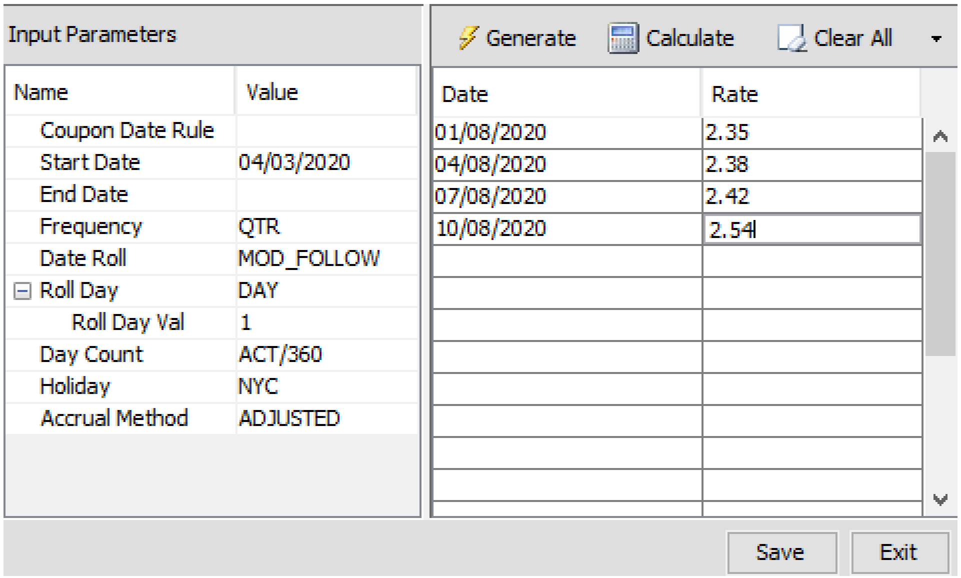
This panel only appears for floating legs.

Select the Index and Resets panel.



» The index source and index factor are displayed and can be altered directly.

» Click **...** next to "Spread Schedule" to define a spread schedule. It brings up the Spread Schedule window.



- Select a date rule from the Coupon Date Rule field to generate the schedule using the date rule, or select a frequency from the Frequency field to generate the schedule using a frequency.
- Enter Start and End Dates.
- Click **Generate** to generate the schedule. Then enter the spreads as needed.
- Then click **Save** to apply the schedule.

» The field "Cmp Sprd" only appears for a compounding rate with spread compounding - You can enter the spread in basis points, or click **...** to define a compounding spread schedule. The Compound Spread Schedule window will appear, it is the same as the Spread Schedule window shown above.

» Check the “Convert Basis” checkbox to check whether the reference index and the trade have the same daycount convention. If not, the rate’s daycount convention is converted to the trade’s daycount convention. The following cases are currently supported:

» For RFR based Daily Compounding swaps, the conversion will get applied to the compounded rate and not on Daily Rates. Such Converted Rate will be used for Interest Amount calculation as well as the Accrual Amount calculation. Value displayed in the ‘Rate’ column will be the converted rate. Daily Rates displayed in the Sample Values Window will be the actual rates and not the converted rates.

» In case of Spread and Index Factor, If Convert Basis is checked and if the trade has Index Factor value other than 1; by default ‘Apply Index Factor to Cmp Rate’ should get checked. It won’t be possible for the user to uncheck this (unless ‘Convert Basis’ checkbox is unchecked back).

» In case of Unsupported Compounding Methods, when the user chooses Compounding Method other than ‘SimpleSpread’, while keeping ‘Convert Basis’ checked, below message will be displayed when the user hits on ‘Price’ or generates cashflows or tries to save the trade:

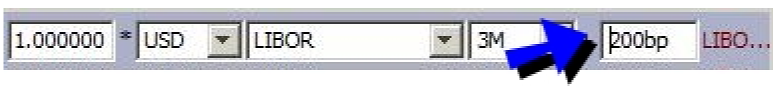
“Convert basis is not supported with the selected Compounding Method”.

Rate Index Daycount	Trade Daycount	Conversion Method
ACT/360	ACT/365	Multiply by 365/360
ACT/365	ACT/360	Divide by 365/360
ACT+1/365	ACT+1/360	Divide by 365/360
ACT+1/360	ACT+1/365	Multiply by 365/360
ACT/ACT	ACT/360	Convert Basis unchecked, forward rate = higher rate (BEY)
ACT/ACT	ACT/360	Convert Basis checked, forward rate = lower rate (MMY by multiplying the rate by 360/365)

» Check "Multiplicative Spread" so that the spread over the rate index is multiplicative rather than additive.

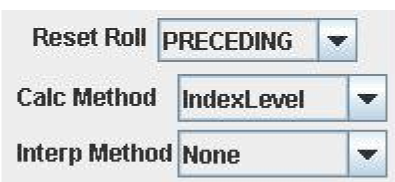
This setting is available when the floating leg uses an inflation rate index, or when the floating leg uses flat compounding in addition to selecting "EXP" as the payment discount method.

This is the spread set next to the index on the Trade window.

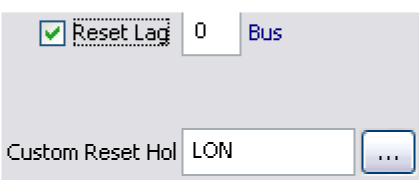


» Select the reset date roll convention from the Reset Roll field, if different from the payment date roll convention. Date roll conventions are described in the Calypso Navigator under **Help > Date Roll Conventions**.

» For an inflation rate, the calculation method and interpolation method are displayed - You can modify as needed.



» Check the Reset Lag checkbox to modify the reset lag (number of days between the reset date and the payment date). It defaults to the reset lag specified on the rate index.



- You can double-click the Bus label (business days) to change to Cal (calendar days) if needed.
- If the Bus label is selected, you can select a custom calendar from the Custom Reset Hol field.

» The field “CutOff Lag” appears when resets are sampled at a frequency different from the payment frequency. It only applies to daily and weekly sampling. When daily, it should be set to “-1”.

When used with the “Cutoff Adj.” weight method, set to the lag between the last sample period’s end date and the cutoff date.

- You can double-click the Bus label (business days) to change to Cal (calendar days) if needed.
- You can specify the cutoff lag holidays. They are used for the cutoff lag on both daily compounding and daily averaging coupons.

» The field “Monthly Reset On This Day” appears when resets are sampled at a frequency different from the payment frequency. It only applies to weekly and monthly sampling (weekly: day of the week, monthly: day of the month).

» Set “Different Reset Dates Per Coupon” to True to generate the reset dates based on the coupon payment frequency, or N to generate the reset dates based on the index tenor.

For a coupon frequency higher than the index frequency, all coupons within an index term can have a different reset date, or the same reset date.

For example, LIBOR 3M and coupon frequency = M. If True, every coupon within the index term will have a different reset date. If False, every coupon within the index term will have the same reset date.

If you do not select True or False, the system will use the value of the environment property DIFFERENT_RESET_DT_PER_CPN.

When False (default), you can check "Apply Reset Dates beginning at First Coupon" to combine coupons within the same index term from top to bottom - Otherwise, they are combined from bottom to top.

Example: LIBOR 3M, coupon frequency = M, and there are 4 coupon periods.

- If "Apply Reset Dates beginning at First Coupon" = True:

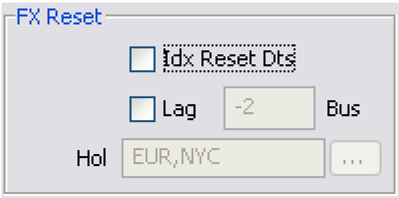
  Period 1, Period 2, Period 3 = Reset 1 and Period 4 = Reset 2
- If "Apply Reset Dates beginning at First Coupon" = False (default):

  Period 1= Reset 1 and Period 2, Period 3, Period 4 = Reset 2

» Check the “Use Reset Period Dates for Compound” to compound trades based on the reset dates rather than the payment dates. Only applies to compounding trades.

» Select the "Use Payment Holiday For Averaging Periods" checkbox to calculate sample periods using payment holidays instead of the reset calendar.

» The FX Reset panel appears for Cross-Currency Swaps and Cancelable Cross-Currency Swaps with principal adjustment (the Adj checkbox is checked).



- Check the “Idx Reset Dts” checkbox to specify that the FX reset dates are the same as the index reset dates.

  Or check the Lag checkbox to specify that the FX reset dates are a number of days before the interest start date. Enter the number of days in the adjacent field. It defaults to the reset lag specified on the FX rate. You can double-click the Bus label (business days) to change to Cal (calendar days) if needed.

  If the Bus label is selected, you can select a calendar from the Hol field.

» "Override Daily Index Calculator" - ***** It is not recommended to check this field as it will be deprecated in an upcoming version *****

When checked, the system uses the DailyCompound rate index calculator for trades based on rate indices defined with legacy rate index calculators.

» "Use Sample Period Shift" appears when coupons are daily compounding and daily averaging. When checked, it shifts the sample period by as many days as the Reset Lag, such that the weights of any given daily fixing remains the same.

» "Partial Period Compounding" appears for daily compounding swaps with SimpleSpr compoundinh method - Select NCCR for Non-Cumulative Compound Rate, or not set for CCR (Cumulative Compound Rate). The NCCR rate is the daily change in CCR rate.

The value NCCR can be added to the domain "PartialPeriodCompRateEnrichmentMethods" if it is not available for selection.

In the Reset Samples window, the Partial Period Comp Rate column is computed.

» ISDA Set-In-Advance appears for swap trades. Setting to True causes the system to use the ISDA 2021 convention for daily compounding and simple averaging coupons where the Reset Timing of the daily compounded rate is BEG_PER.

You can set the default value of this field by setting Value = True in domain isdaSetInAdvance.

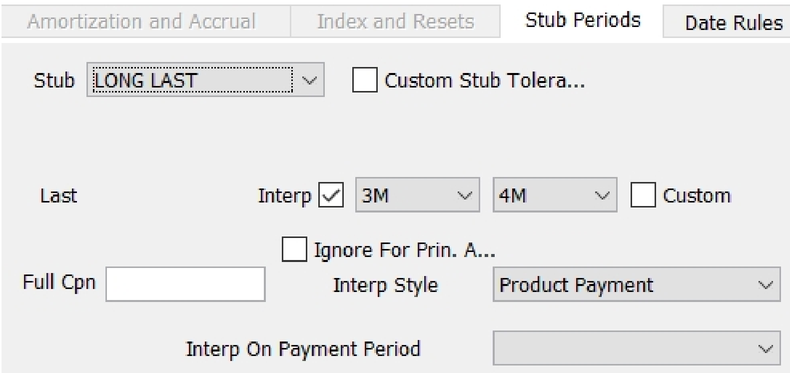
Introduce a new property by the name of 'Apply Index Factor to Cmp rate' in the trade window under ‘Index and Resets’ as below:

» When not checked (default), the index factor is applied to each daily rate.

» When checked, the index factor is applied to the final compounded rate.

1.3 Stub Periods Panel

Select the Stub Periods panel.



The system automatically creates the stub periods when needed if **Product > Automatically Adjusting Stub**, or **Product > Warn before Adjusting Stub** is checked. Otherwise, you can define stub periods manually in this panel.

Stub periods take into account date roll conventions, holidays and accrual method.

The stub periods use the ISDA interpolation methodology to interpolate stub rates.

If a period (in calendar days) is less than or equal to the stub tolerance, it will be merged into the period immediately next to it. The default stub tolerance is 5 days (or set in the environment property STUB_TOLERANCE) - You can customize the stub tolerance in this window as well.

» Select the type of stub period from the Stub field.

  FIRST / LAST indicate whether the stub is the first period or the last period.

  SHORT / LONG indicate whether the stub is shorter or longer than the payment frequency.

  SPECIFIC FIRST – You can enter the end date of the first period.

  SPECIFIC LAST – You can enter the start date of the last period.

  SPECIFIC BOTH – You can enter the end date of the first period, and the start date of the last period.

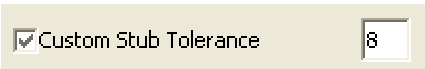
  FULL COUPON – You can enter the full coupon date (FULL COUPON is not applicable to Security Finance trades: repo and security lending).

  Examples: You have a QTR interest frequency, and the trade start date is 03/01 and the trade end date is 10/15 (these examples do not take into account holidays, date roll conventions, and accrual method – Their purpose is to show how the stub periods are created).

  – SHORT FIRST creates 3 periods (03/01 – 04/15 || 04/15 – 07/15 || 07/15 – 10/15)
  – LONG FIRST creates 2 periods (03/01 – 07/15 || 07/15 – 10/15)
  – SHORT LAST creates 3 periods (03/01 – 06/01 || 06/01 – 09/01 || 09/01 – 10/15)
  – LONG LAST creates 2 periods (03/01 – 06/01 || 06/01 – 10/15)
  – SPECIFIC FIRST (end date of first period is 03/15) creates 4 periods (03/01 – 03/15 || 03/15 – 06/15 || 06/15 – 09/15 || 09/15 – 10/15)
  – SPECIFIC LAST (start date of last period is 10/01) creates 4 periods (03/01 – 04/01 || 04/01 – 07/01 || 07/01 – 10/01 || 10/01 – 10/15)

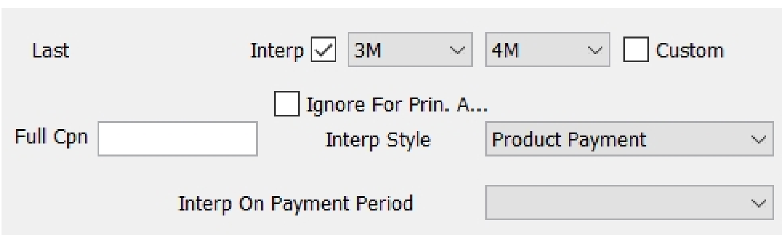
- SPECIFIC BOTH (end date of first period is 04/01 and start date of last period is 09/15) creates 4 periods (03/01 – 04/01 || 04/01 – 07/01 || 07/01 – 09/15 || 09/15 – 10/15)
- FULL COUPON – It creates 3 periods (01/15 – 04/15 || 04/15 – 07/15 || 07/15 – 10/15)

» Check the “Custom Stub Tolerance” checkbox to specify the stub period offset in days, and enter the number of days in the adjacent field.



If a period (in calendar days) is less than or equal to the stub tolerance, it will be merged into the period immediately next to it. If not set, the default stub tolerance is 5 days (or set in the environment property STUB_TOLERANCE).

» Whenever there is a stub on a floating rate, the system automatically calculates the best index tenor for the stub period (provided “No Auto Interp” is unchecked on the rate index definition). If the length of a stub period matches exactly one of the index tenors, there is no interpolation required. If the length of a stub period is between two index tenors, the system defaults the stub index to interpolate between the two index tenors.



You can customize these tenors using the Interp checkbox and the adjacent tenor fields. If no interpolation is required, select the same tenor in both boxes. When you modify the index tenors, the Custom checkbox will appear checked. To return to the default tenors computed by the system, uncheck the Custom checkbox.

You can select the interpolation style:

- Index Based - The DateRoll, the holidays and the daycount are coming from the rate index.
- Product Payment - The DateRoll, the holidays and the daycount are coming from the coupon panel.
- Product Payment-Ignore EOM Rule - Same as "Product Payment", and the Follow End-End maturity is ignored.

  If the Roll Day setting in the payment details schedule is set to EOM, you can use the domain "InterpolateIgnoreEOMRoll" to ignore the Roll Day setting so that it does not interfere with the Interp Style setting.

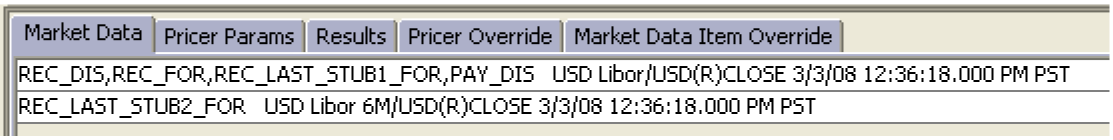
  When "InterpolateIgnoreEOMRoll" is set to True, interpolation ignores Roll Day=EOM. When "InterpolateIgnoreEOMRoll" is set to False, interpolation will include the date roll and roll day settings in the payment schedule.

For Cash trades and Structured Flows trades, you can select "Interp On Payment Period":

- Not set – In this case the value is taken from the domain “InterpolateOnPaymentPeriod” if any, or false otherwise.
- True: Interpolate on payment period

- False: Interpolate on forward period

For a swap trade, if the system finds a curve for each stub tenor, it will use them to interpolate the stub period, otherwise it uses tenors on the curve of the trade's tenor forecast curve.



Here the system is using a curve for the 3M tenor, and a curve for the 6M tenor.

You must have rate indices for each tenor with "No Auto Interp" unchecked, curves defined for each tenor, and the curves must be associated as forecast curves with the pricer configuration.

» You can enter a Full Cpn date to create periods starting on that date rather than the trade start date. The same logic applies with stub periods but for trade start date = Full Cpn date.

» Cmp Stub - Only appears if the compounding frequency is LUN(R), BIWK(R), or WK(R).

Select a stub for the compounding period as needed - This is used to adjust the compounding periods that are generated when they are not exactly divisible by the payment frequency.

Example: You pick a MTH payment frequency with compound frequency as WK(R). A month cannot be divided exactly in 7 days periods so we will have few extra days (if the month has 31 days you will have 4 extra days).

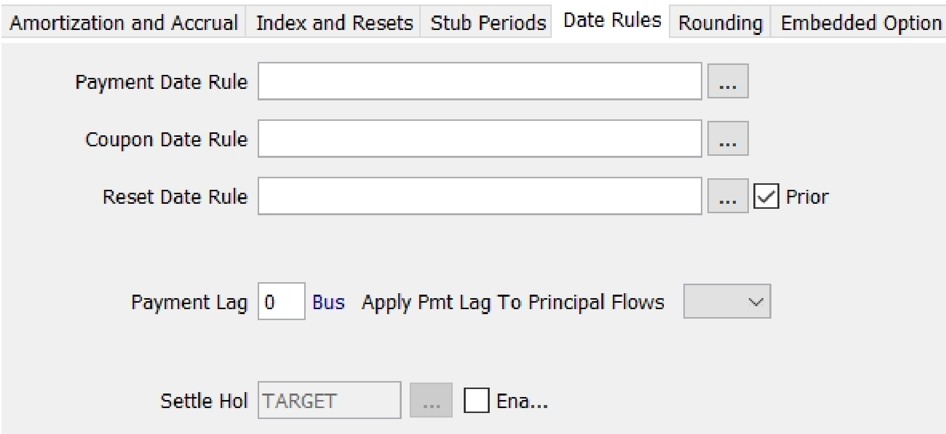
- SHORT FIRST: The first period will have 4 days, the others periods 7 days.
- LONG FIRST: The first period will have 11 day, the others periods 7 days.
- SHORT LAST: The first periods will have 7 days, the last one 4 days.
- LONG LAST: The first periods will have 7 days, the last one 11 days.

▶ For more detailed information, refer to Handling of Stubs.

1.4 Date Rules Panel

Date rules can be used instead of frequencies to determine the interest periods.

Select the Date Rules panel.



- You can select a payment date rule, an interest date rule, and a reset date rule.

  The payment date rule determines the payment dates of the cashflows. If none is specified, the payment lag is used instead.

  The coupon date rule determines the interest dates of the cashflows.

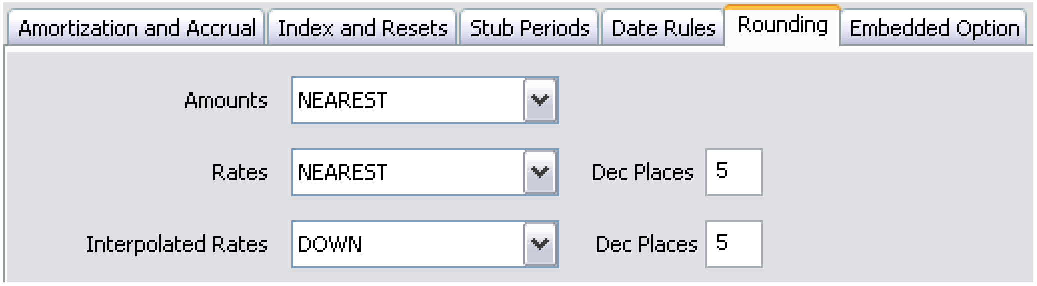
  The reset date rule determines the reset dates of the cashflows.

  For Cash products, the payment date rule determines the payment dates of principal flows - You can also select an interest payment date rule for the payment dates of interest flows.
- Check the Prior checkbox to perform the reset for the prior period (in arrears).
- Enter a number of days between the interest date and the payment date in the Payment Lag field if needed. You can double-click the Bus label (business days) to change to Cal (calendar days) if needed.
- You can select True from the Apply Pmt Lag To Principal Flows field to apply the payment lag to PRINCIPAL flows in addition to INTEREST flows. It is applied to INTEREST flows only otherwise.

  You can set a default value for this field using the domains "ApplyPmtLagtoPrincipalFlows" for IRD trades and "StructuredFlows.ApplyPmtLagToPrincipalFlows" for Structured Flows. Default is True.
- You can select additional settlement holidays as needed.

1.5 Rounding Panel

Select the Rounding panel.

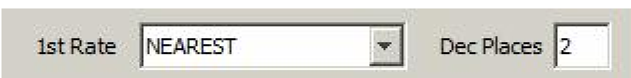


» Select the interest amount's rounding method from the Amounts field.

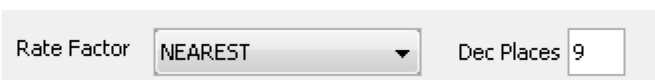
» Select the rate's rounding method from the Rates field. You can enter the number of decimal places in the Dec Places field.

» You can select the stub rate's rounding method from the Interpolated Rates field. Only appears if stub periods are defined. You can enter the number of decimal places in the Dec Places field.

» You can select the first reset rate rounding method from the 1st Rate field. Only appears if a first reset rate is set on the trade. You can enter the number of decimal places in the Dec Places field.



» You can select the rate factor rounding method from the Rate Factor field. Only appears when a fixed leg's payment discount method is "EXP" or "NONE", or when the floating leg uses flat compounding, selects "EXP" as the payment method, and checks the multiplicative spread checkbox. You can enter the number of decimal places in the Dec Places field.

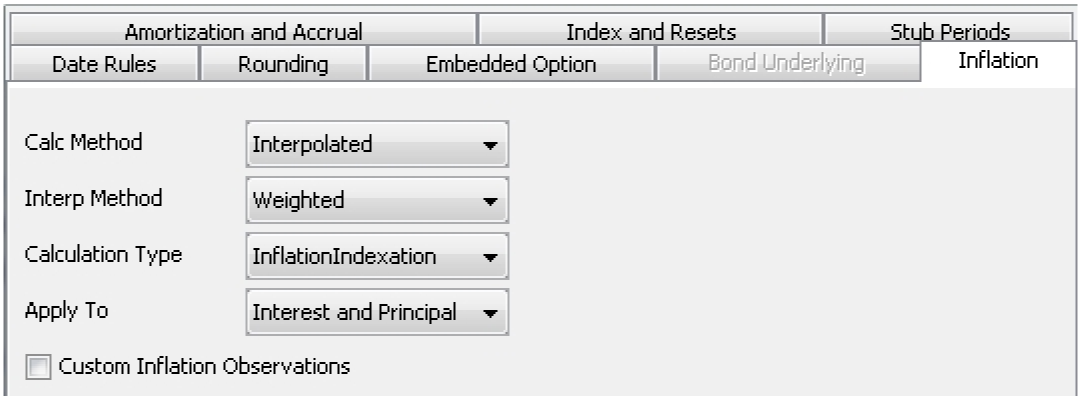


» When the rate index on the floating leg is for inflation and Calculation Type on the Inflation tab is set to InflationIndexation, the Inflation Factor drop-down list is enabled. This provides the ability to round known values for Inflation Factor results in cashflows. The available rounding types are NEAREST, UP, or DOWN, and the number of decimal places can be entered.

1.6 Inflation Panel

For inflation swaps, additional details can be specified in the Inflation panel.

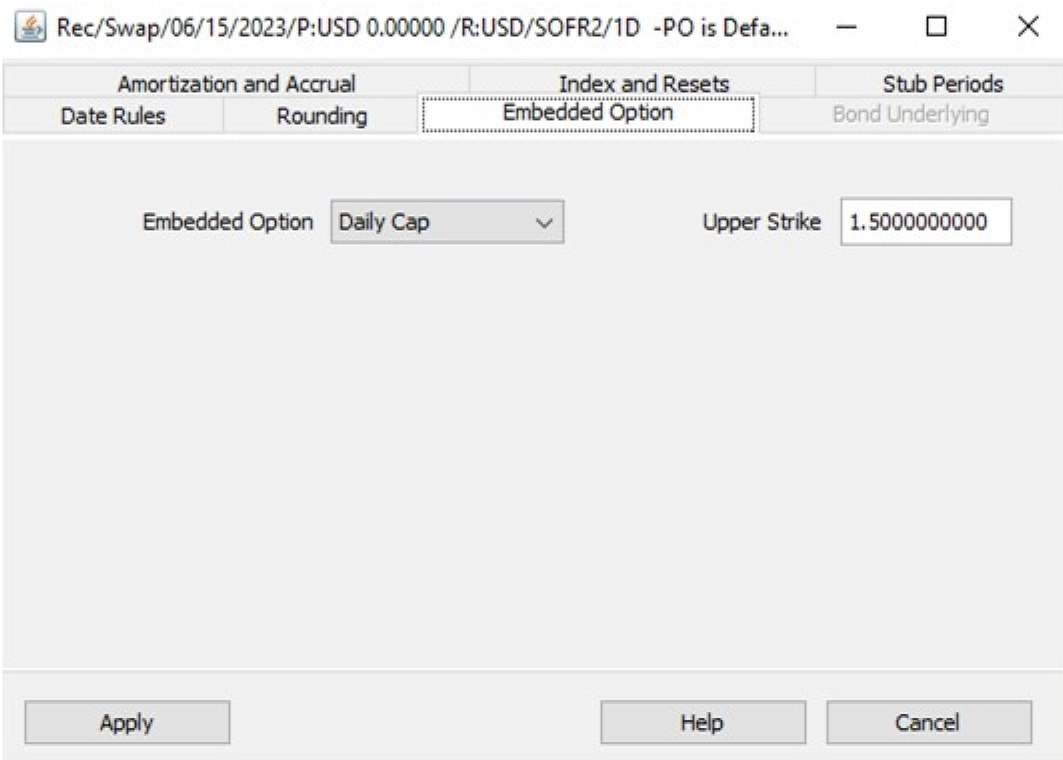
Select the Inflation panel.



- Select the calculation method:
  - Interpolated - Daily index levels are interpolated between publication dates.
  - IndexLevel - Index levels are not interpolated between publication dates.
- The only "Interp Method" option is "Weighted", which is only available for the Interpolated calculation method.
- Select the calculation type to apply inflation level changes to cashflows:
  - InflationIncome - [(Final Level / Initial Level) - 1]
  - InflationIndexation - [Final Level / Initial Level]
- Select whether to apply the InflationIndexation calculation type to just Interest, or both Interest and Principal.

1.7 Embedded Option Panel

For daily compounding trades with the SimpleSpr compounding method, you can apply a cap or a floor to each daily interest rate before compounding.



Select either Daily Floor or Daily Cap, and specify the upper or lower strike. If you don't want to apply a cap or a floor to each daily interest rate before compounding, select None.

2. Stubs Handling

Detailed description of how the system handles stub periods.

2.1 Environment Property

You may choose the default tolerance for when stub periods are created using environment property STUB_TOLERANCE. This is a number of days.

[NOTE: There are other settings described below that affect default stub handling]

Example: If STUB_TOLERANCE = 5, no stub would is created for a period less than 5 days in length.

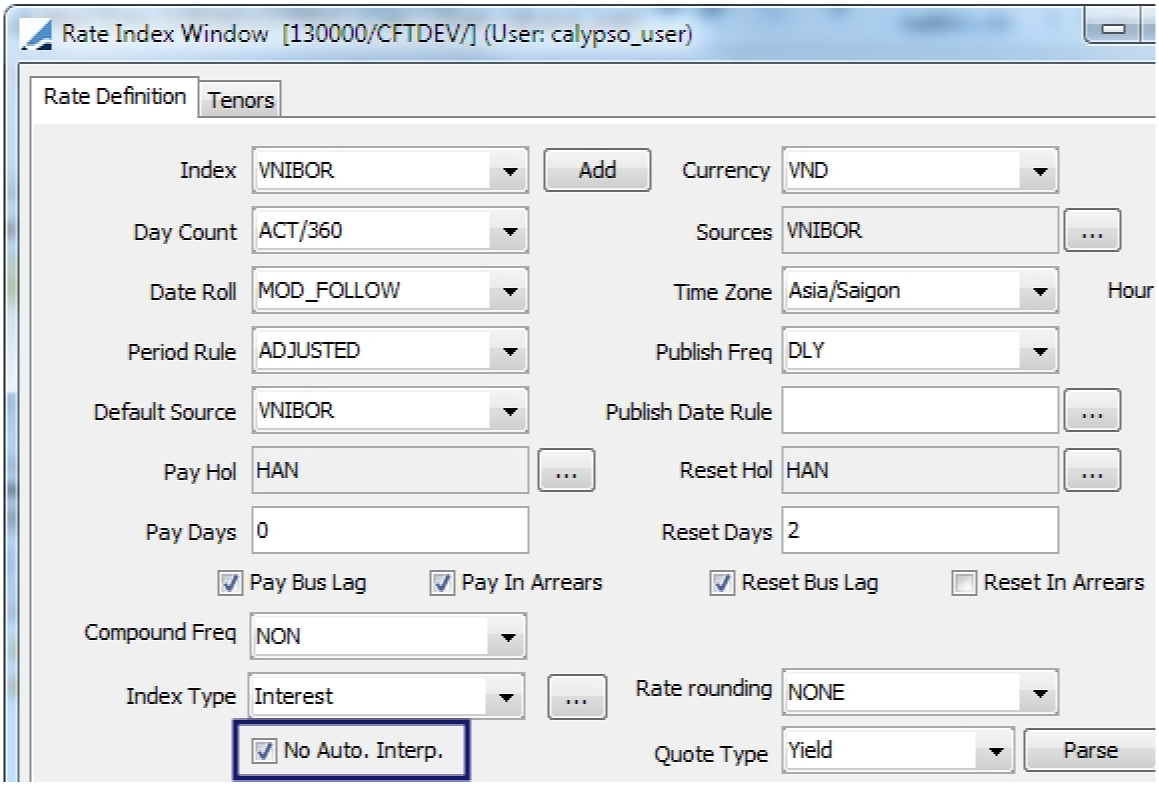
2.2 Default Interpolation and Curve Selection

You can of multiple curves for stubs, based on the tenor of the stub periods. For example, suppose the trade is based on LIBOR 3M, the period is quarterly and there is a stub period of 6 weeks. You can interpolate the rate for this period between 1M and 3M rates using the LIBOR 3M curve set up in the Pricing Environment, or you can use the declared LIBOR 1M and the declared LIBOR 3M curve. This difference depends on the setup described below.

2.2.1 Rate Index Settings

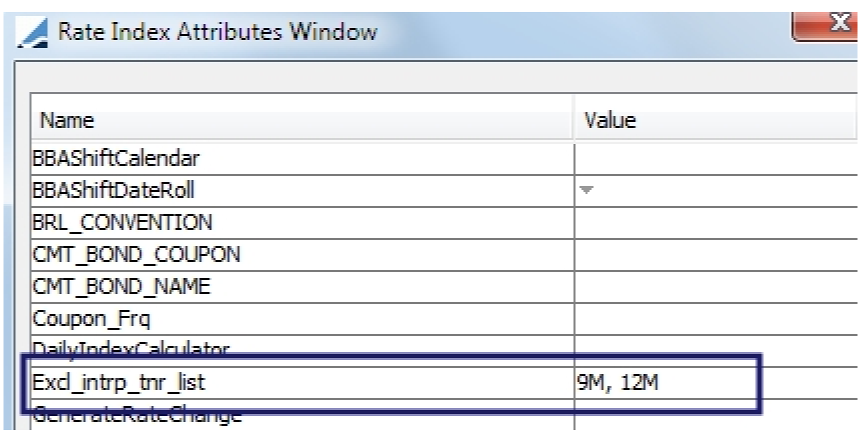
No Automatic Interpolation

This checkbox is not related to the interpolation method of inflation indices. When checked, there is no automatic interpolation applied to stub periods. Otherwise, stub periods are automatically interpolated. The Rate Index Window can be viewed from the Calypso Navigator by selecting **Configuration > Interest Rates > Rate Index Definition**.



Rate Attribute - Excl_intrp_tnr_list

The Rate Attribute, *Excl_intrp_trn_list* is used to exclude tenors from being included in stubs. The tenors should be in the list separated by commas.

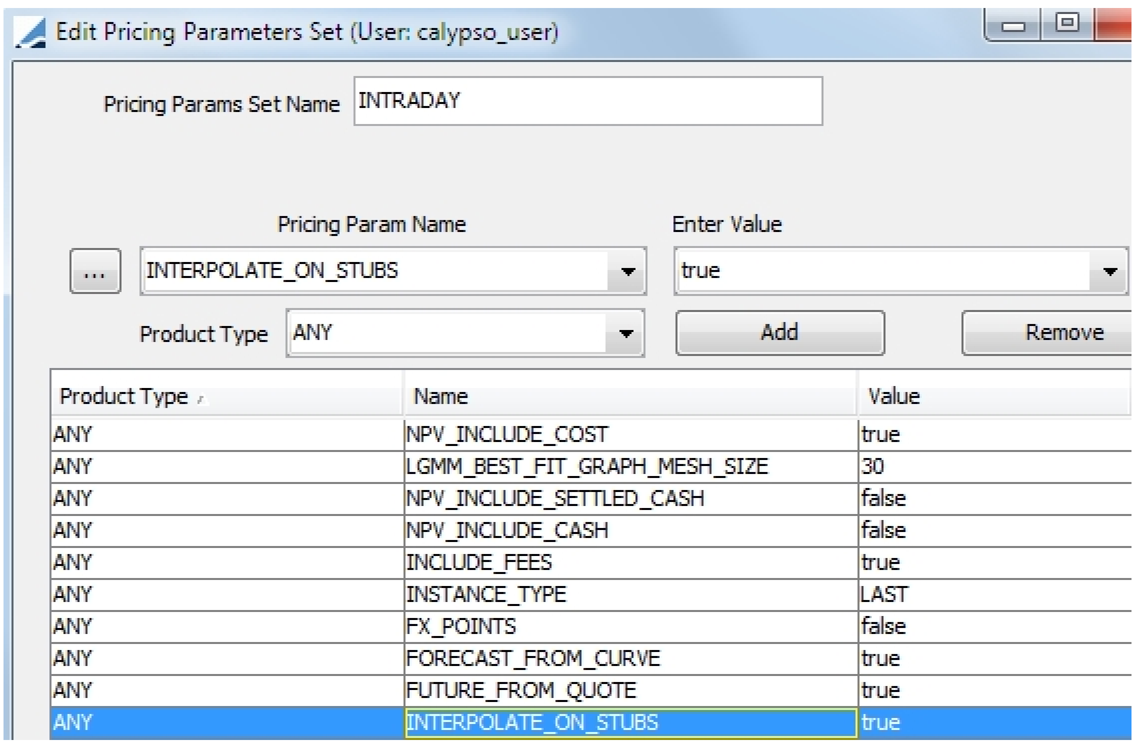


2.2.2 Pricing Parameters

You may turn on or off usage of multiple curves with the INTERPOLATE_ON_STUBS pricing parameter. When this parameter is set to false, the curves used for interpolation do not depend on the interpolation tenor, they depend on the rate index tenor.

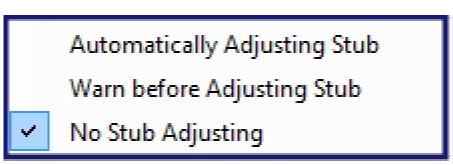
In addition, you can set STUB_FORECAST_ADJ=true to utilize two forecast curves when a curve for the stub period ccy/index/tenor cannot be found in the pricing environment. One curve is built around a tenor shorter than the actual stub period and the second is built around a tenor greater than the actual stub period. The rate implied from each curve is weighed according to the proximity of the curve tenor to the tenor of the stub period.

To edit the pricing parameter set, from the Calypso Navigator, select **Market Data > Pricing Environment > Pricing Parameter Set**.



2.3 Swap Window Settings

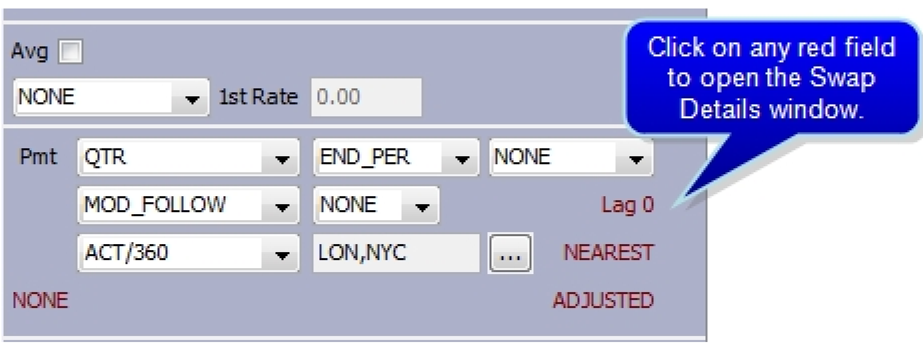
You are able to set the Swap window to automatically calculate stub periods from the Swap menu.

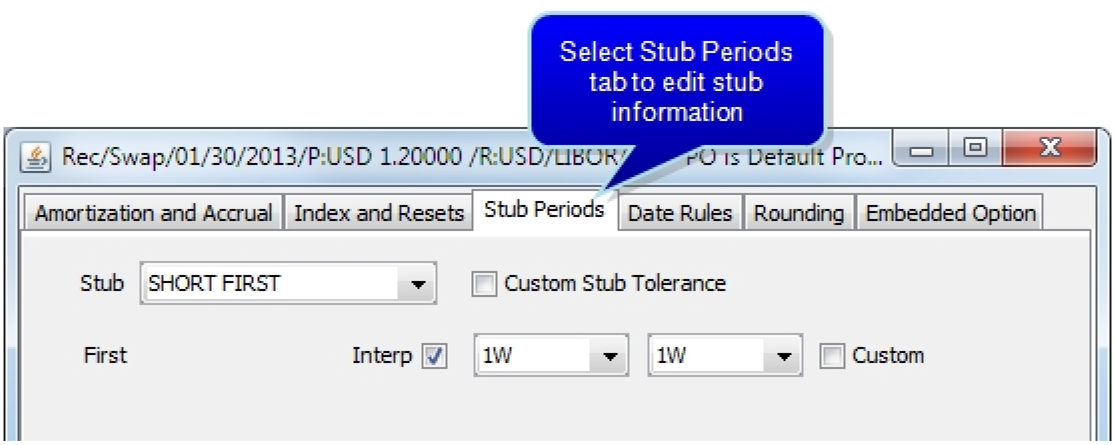


Selection	Description
Automatically Adjusting Stub	Select to automatically create stub periods without warning, when changes to the trade require stub periods. You may override the stub period settings in the Swap window. This cannot be selected if *Warn before Adjusting Stub* or *No Stub Adjusting* is selected.
Warn before Adjusting Stub	When selected, you are prompted to create stub periods when changes are made to the trade that require stub periods. You may override the settings in the Swap window. This cannot be selected if *Automatically Adjusting Stub* or *No Stub Adjusting* is selected.
No Stub Adjusting	This is the default setting. The system will not create the stub periods even when changes to the trade require stub periods. You may override the settings in the Swap window. This cannot be selected if *Warn before Adjusting Stub* or *Automatically Adjusting Stub* is selected.

2.3.1 Swap Details Panel

You can set up a stub period in the Swap details area. You can select the type of stub period, custom tolerance (days) and the index or indices used in interpolating the rate for that period.





The stub periods take into account date roll conventions, holidays and accrual methods. The stub periods use the ISDA interpolation methodology to interpolate stub rates. These are described below:

- FIRST / LAST indicates whether the stub is the first period or the last period
- SHORT / LONG indicates whether the stub is shorter or longer than the payment frequency
- SPECIFIC FIRST means you can enter the end date of the first period
- SPECIFIC LAST means you can enter the start date of the last period
- SPECIFIC BOTH means that you can enter the end date of the first period, and the start date of the last period
- FULL COUPON allows you to enter the full coupon date

Example

Suppose the following:

- QTR interest frequency
- trade start date of 03/01
- trade end date of 10/15

[NOTE This example does not take into account holidays, date roll conventions and accrual methods. The sole purpose is to demonstrate how stub periods are created]

SHORT FIRST	Creates three periods: 03/01 - 04/15, 04/15 - 07/15, 07/15 - 10/15
LONG FIRST	Creates two periods: 03/01 - 07/15, 07/15 - 10/15
SHORT LAST	Creates three periods: 03/01 - 06/01, 06/01 - 09/01, 09/01 - 10/15
LONG LAST	Creates two periods: 03/01 - 06/01, 06/01 - 10/15
SPECIFIC FIRST	(end date of first period is 03/15) Creates four periods: 03/01 - 03/15, 03/15 - 06/15, 06/15 - 09/15, 09/15 - 10/15
SPECIFIC LAST	(start date of last period is 10/01) Creates four periods: 03/01 - 04/01, 04/01 - 07/01, 07/01 - 10/01, 10/01 - 10/15
SPECIFIC BOTH	(end date of first period is 04/01 and start date of last period is 09/15) Creates four periods: 03/01 - 04/01, 04/01 - 07/01, 07/01 - 09/15, 09/15 - 10/15
FULL COUPON	Creates three periods: 01/15 - 04/15, 04/15 - 07/15, 07/15 - 10/15

» Select Custom Stub Tolerance to specify the stub period offset in days, and enter the number of days in the adjacent field. If the period in calendar days is less than or equal to the stub tolerance, it will be merged into the period immediately next to it. If it is not set, the default is set in the environment property STUB_TOLERANCE.

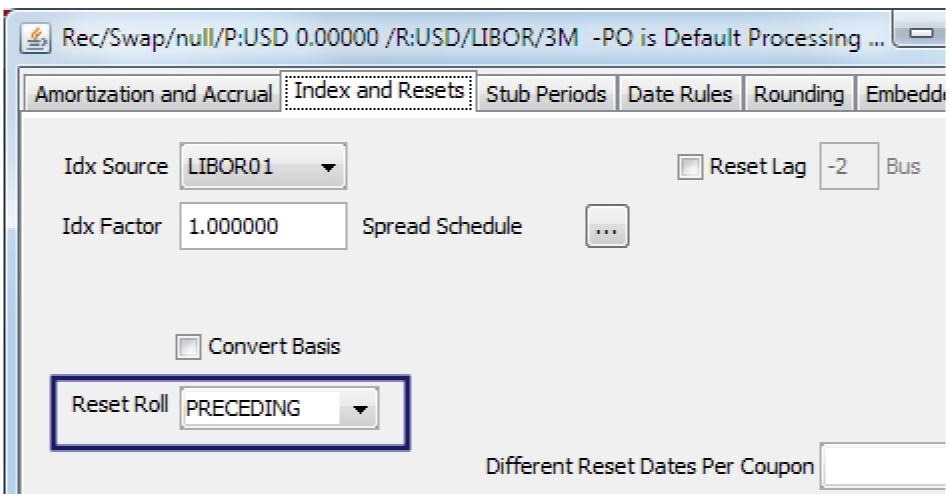
» Whenever there is a stub on a floating rate, the system automatically calculates the best index tenor for the stub period (provided No Auto Interp is un-checked on the rate index definition.) If the length of a stub period matches exactly one of the index tenors, there is no interpolation required. If the length of a stub period is between two index tenors, the system defaults the stub index to interpolate between the two index tenors.

» You may customize these tenors using the Interp checkbox and the adjacent tenor fields. If no interpolation is required, select the same tenor in both boxes. When other index tenors are selected, the Custom checkbox will be checked. To return to the default tenors computed by the system, un-check the Custom checkbox.

2.4 General Logic of the Period Calculations

Calypso uses some standard date rules to calculate accrual periods, payment dates and reset dates.

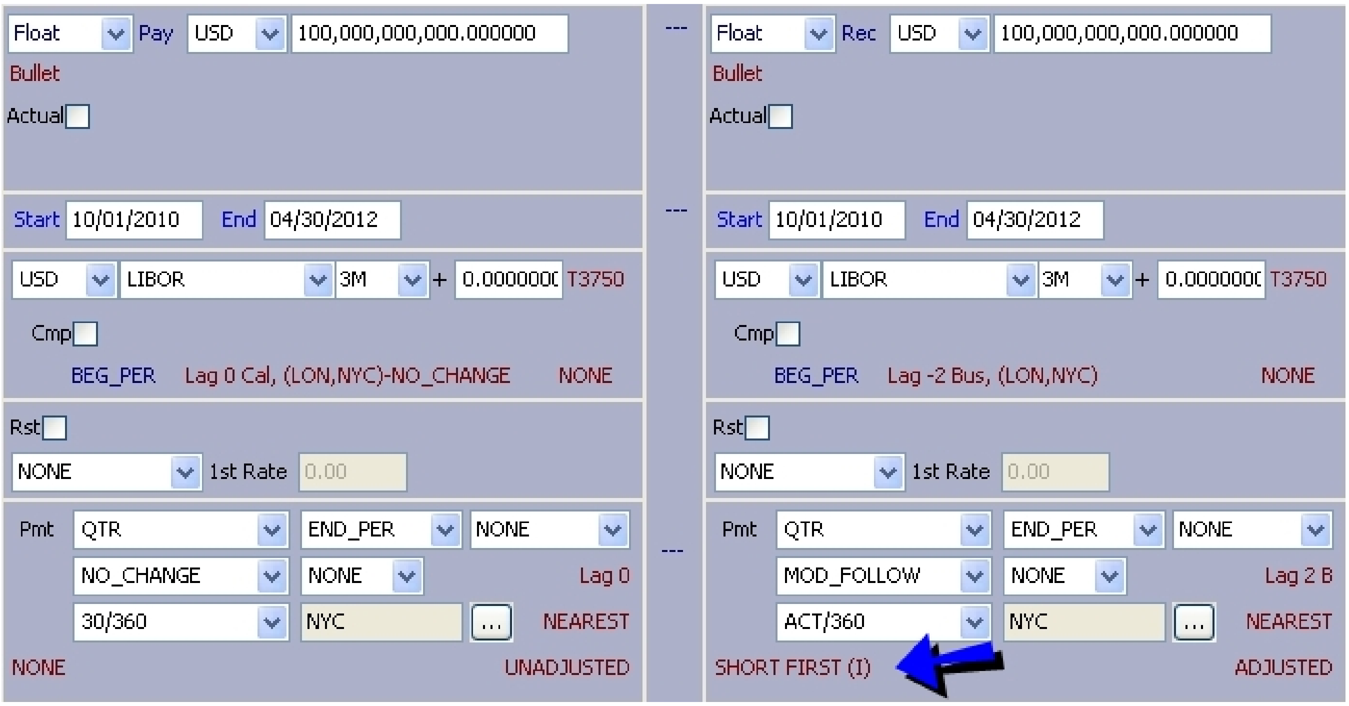
- Using the trade end date and the frequency in the Payment section, Calypso calculates unadjusted period begin and end dates. Calypso starts at the trade date and works backward to the start date. This then results in stubs being automatically put at the beginning of the trade.
- Using the day-count (e.g. ACT/360), holiday (e.g. LON), non-business day roll rule (e.g. MOD FOLLOW) and the accrual method selection (e.g. ADJUSTED), the period start and end date of each period is adjusted.
- The payment dates are calculated using the period end dates and the payment lag settings. Note that payment date logic uses the same holidays and date rolls as the calculation periods.
- The reset dates are calculated using the period start dates, the reset lags and the reset roll setting (on the Swap Details window)

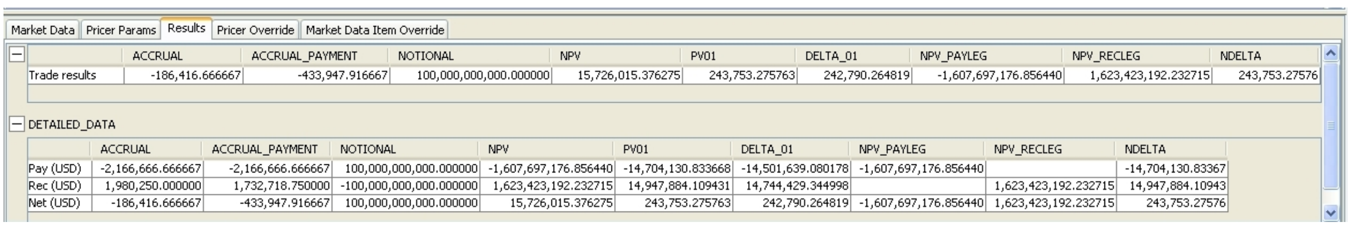


- The forward dates are calculated from the reset lag and the tenor of the index.

Example

In this trade, the Pay Leg is set so that there are no adjustments for any dates, while the Receive Leg has adjustments applied.



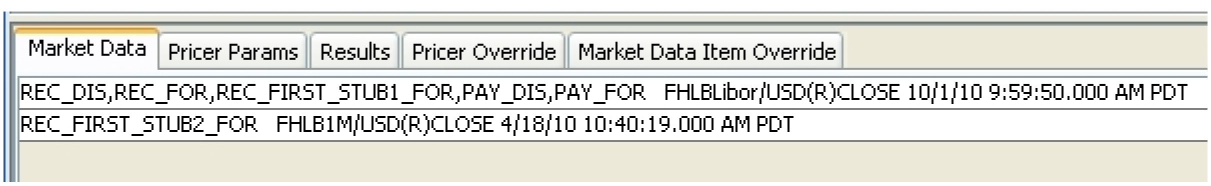


	ACCRUAL	ACCRUAL_PAYMENT	NOTIONAL	NPV	PV01	DELTA_01	NPV_PAYLEG	NPV_RECLEG	NDELTA
Trade results	-186,416.666667	-433,947.916667	100,000,000,000.000000	15,726,015.376275	243,753.275763	242,790.264819	-1,607,697,176.856440	1,623,423,192.232715	243,753.27576

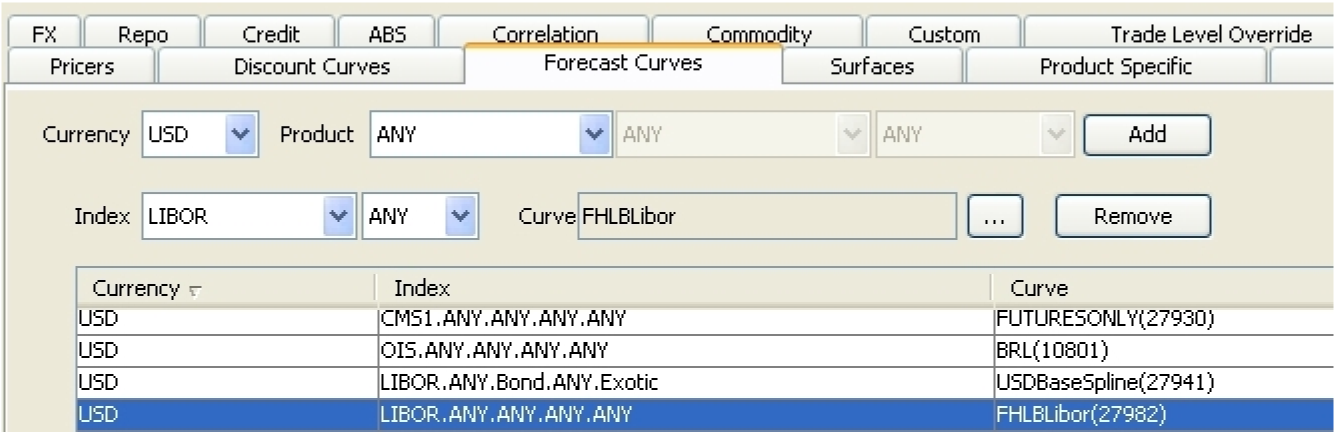
DETAILED_DATA

	ACCRUAL	ACCRUAL_PAYMENT	NOTIONAL	NPV	PV01	DELTA_01	NPV_PAYLEG	NPV_RECLEG	NDELTA
Pay (USD)	-2,166,666.666667	-2,166,666.666667	100,000,000,000.000000	-1,607,697,176.856440	-14,704,130.833668	-14,501,639.080178	-1,607,697,176.856440		-14,704,130.83367
Rec (USD)	1,980,250.000000	1,732,718.750000	-100,000,000,000.000000	1,623,423,192.232715	14,947,884.109431	14,744,429.344998		1,623,423,192.232715	14,947,884.10943
Net (USD)	-186,416.666667	-433,947.916667	100,000,000,000.000000	15,726,015.376275	243,753.275763	242,790.264819	-1,607,697,176.856440	1,623,423,192.232715	243,753.27576

2.4.1 Curve Usage

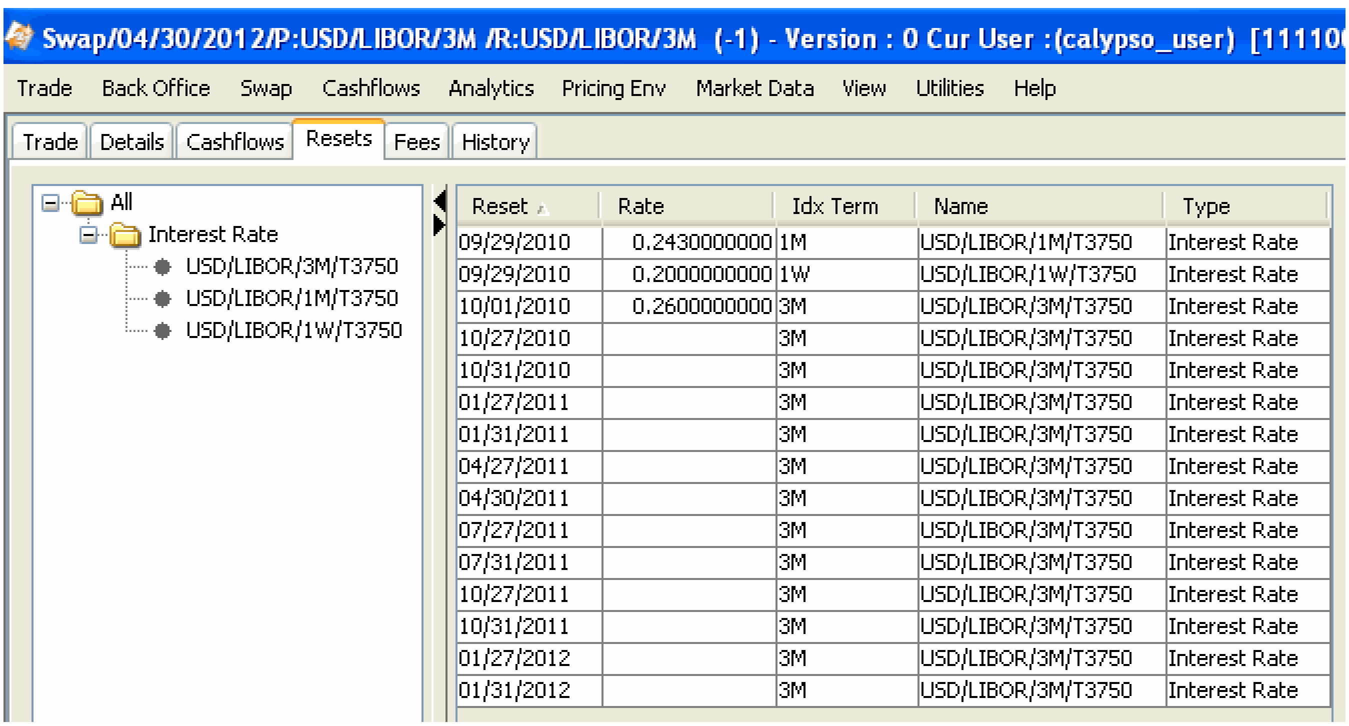


Because of the settings (stub, with interpolation and pricing parameter), the system finds the curves that are declared for use in the pricing environment for the 3M and the 1M curve. In this example, there is no 1W curve. These curves are used for forecasting forward rates.



2.4.2 Reset Rates Used

Calypso automatically looks for the rates needed for the resets.



[NOTE: Stub periods are independent of the setting for compounding and averaging, and for the Notional amounts on which interest is computed]

2.4.3 Customizing Cashflows

Rate Index, Day Count, Interpolation, Currency, Rates and Amount can be customized for any flow row. Dates can be also set for Payment Dates and Reset Dates, but not Forward Dates.