Nasdaq Calypso

Fixed Income Trading

Version 18

Revision 7.0

February 2025

Approved

Document History

Revision	Published	Summary of Changes
1.0	February 2024	First revision for version 18.
2.0	March 2024	Updates for version 18 monthly release.
3.0	May 2024	Updates for version 18 monthly release - Implementation of Standard Bond forward calculator and Valuation Methodology.
4.0	June 2024	Updates for version 18 monthly release - Behavior change for Mexican Bonds related to FX settlement. Added Calculate Type 'Fractional Quantity'.
5.0	August 2024	Updates for version 18 monthly release. Introduced CASH_RATE_01 measure to PricerBondFRNAUD and Scheduled Task AUTOMATIC_EXERCISE_ BONDFORWARD for Bond Forwards trades.
6.0	October 2024	Updates for version 18 monthly release - Added details for Flipper window.
7.0	February 2025	Updates for version 18 monthly release - Added details for Interp Rounding.

This document guides you through the setup and capture of fixed income trades.

Table of Contents

1. Fixed Income Overview

Reference Data Specific to Fixed Income Trading

- Issuers
- Bond Defaults
- Bond Benchmarks
- Bond Products
- Bond Spreads
- Bond Report
- Bond Browser

Bond products can be imported from Bloomberg - Refer to *Calypso Bloomberg Integration Documentation* for details.

ABS Bonds can also be imported from Intex - Refer to *Calypso Structured Financing Documentation* for details.

Market Data Requirements

Generally, you will need the following market data (Help is available from all market data windows):

- Discount and Forecast curves - See **Market Data > Interest Rate Curves > Zero Yield Curve**.
- Probability curves - See **Market Data > Credit Curves > Probability Curve**.
- Repo curves - See **Market Data > Interest Rate Curves > Repo Curve**.
- Quotes - See **Market Data > Market Quotes > Quotes**.

Market data can be imported from Reuters - Refer to *Calypso Reuters Integration Documentation* for details.

ABS Bonds can be priced using the Intex pricer - Refer to *Calypso Intex Integration Documentation* for details.

Callable Bonds can be priced using the Kalotay pricer - Refer *Calypso Kalotay Integration Documentation* for details.

Trade Capture

All types of trades are described below.

Trade Lifecycle

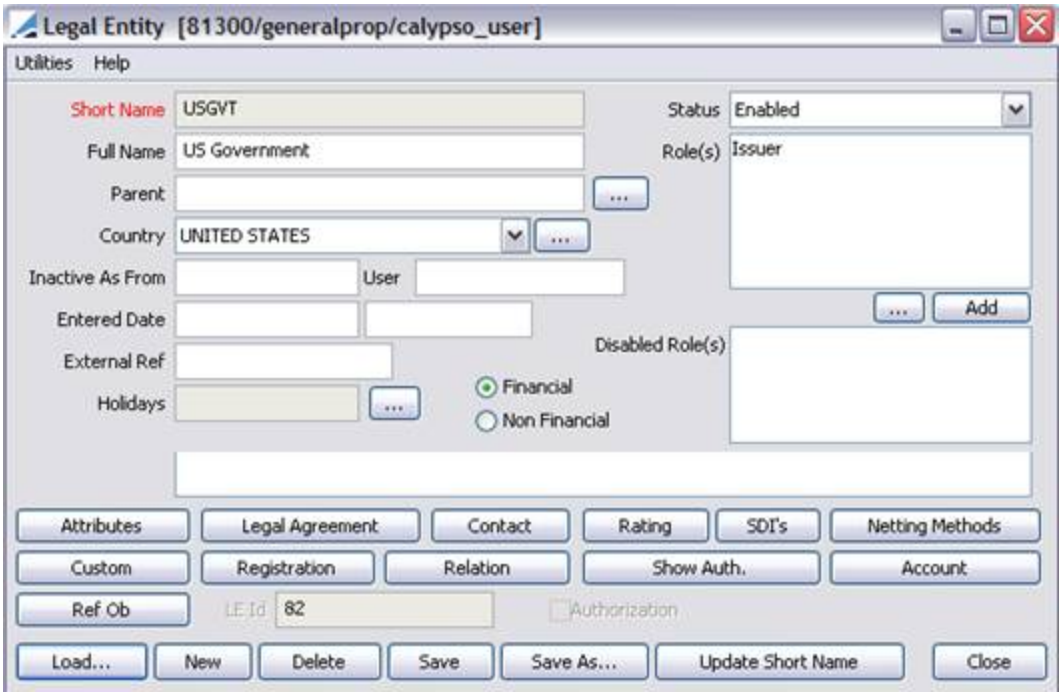
The following trade lifecycle actions can be applied to Fixed Income trades (Help is available from all trade lifecycle windows):

- Allocation - See **Back Office > Allocate** in the trade window.

- Corporate Action - See **Trade Lifecycle > Corporate Action > Corporate Action**.
- Domiciliation
- Positions - Refer to *Calypso Positions Management Documentation* for details.
- Rate reset - See **Trade Lifecycle > Reset > Rate Reset**.
- Termination and partial termination - See **Back Office > Terminate** in the trade window, or **Trade Lifecycle > Termination > Terminate**.

2. Defining Issuers

From the Calypso Navigator, navigate to **Configuration > Legal Data > Legal Entities** (menu action `refdata.BOLegalEntityWindow`) to define issuer data.



- Click **Load** to load existing legal entities, or click **New** to create a new legal entity.

  Issuers are identified by their short name and have the role Issuer.
- You can choose **Help > Legal Entities** for complete details.

You can also import issuer data from Bloomberg - Refer to the *Calypso Bloomberg Integration Documentation* for details.

3. Defining Bond Defaults

Bond Defaults represent templates dedicated to help you when you create a new Bond Product. It allows the users to display fields in the Bond definition. The explanation of the fields is given below.

You can create Bonds Defaults using **Configuration > Fixed Income > Default** from the Calypso Navigator.

Note that you can also specify bond templates from the Bond Product window.

The following fields should be carefully set up, as they will have an impact on accrual and payment computation. All the other values are explained in the next section concerning Bond definition.

▶ See Bond Product Definition for details.

Contents

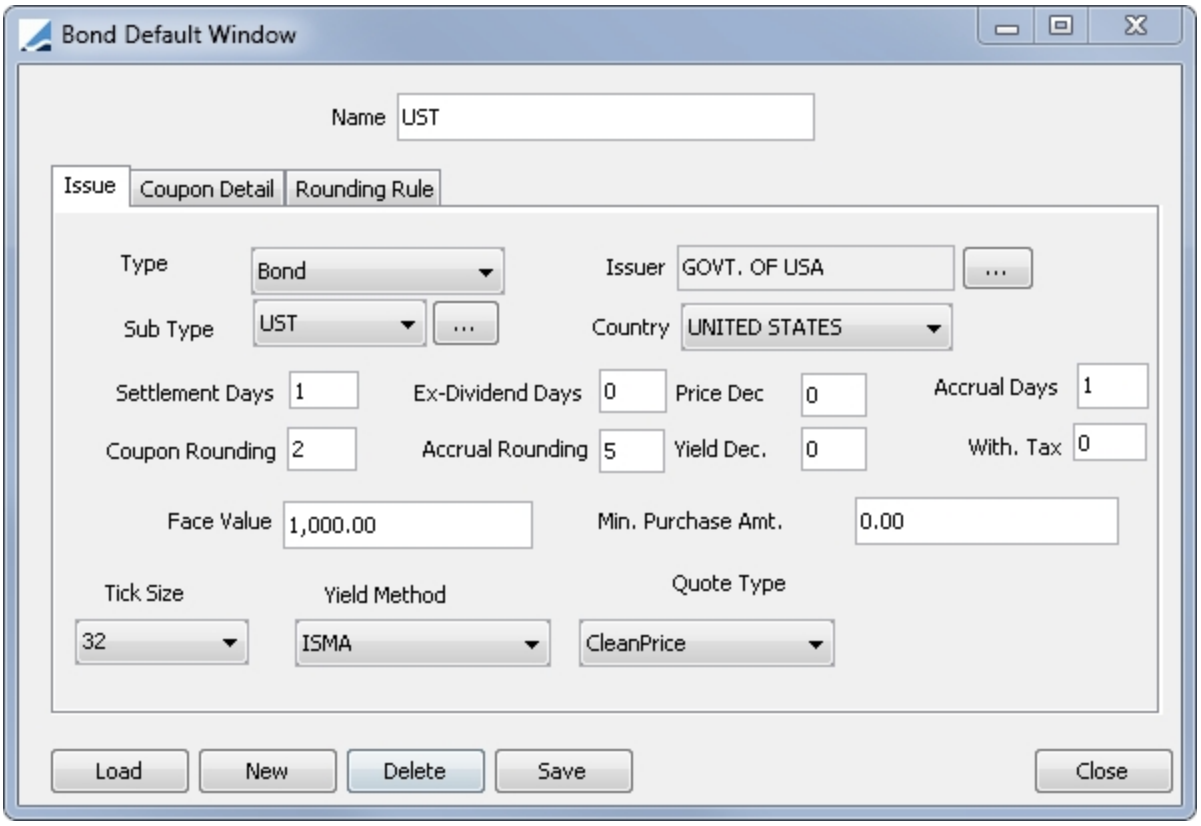
3.1 Fields Details

Bond Default

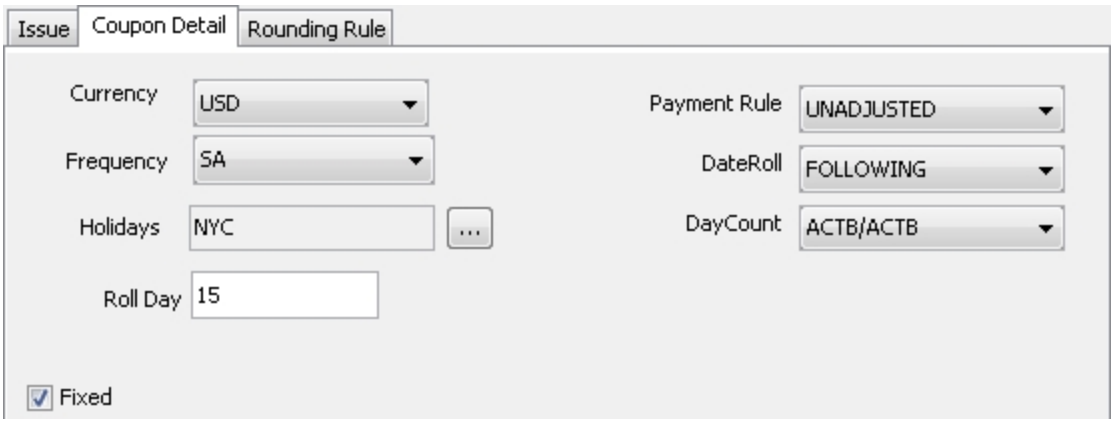
Fields	Description
Face Value	Used to compute the coupon payment and accrual.
Coupon Rounding	Used to round the coupon payment amount. The number of decimals you need to set may depend on the Face Value amount.
Accrual Rounding	Used to round the accrual. The value to set up depends on the Face Value specified. If you set up an accrual rounding of 5, accrual will be computed with a 5 decimals precision. You may choose to modify the value based on the market practice on each bond.

3.2 Sample Bond UST Setup

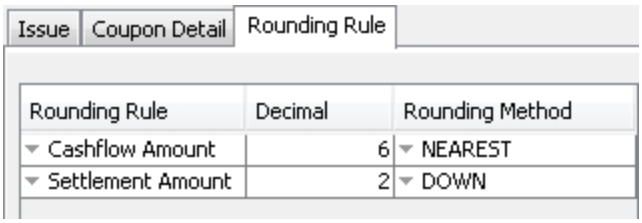
3.2.1 Issue Panel



3.2.2 Coupon Detail Panel



3.2.3 Rounding Rule Panel

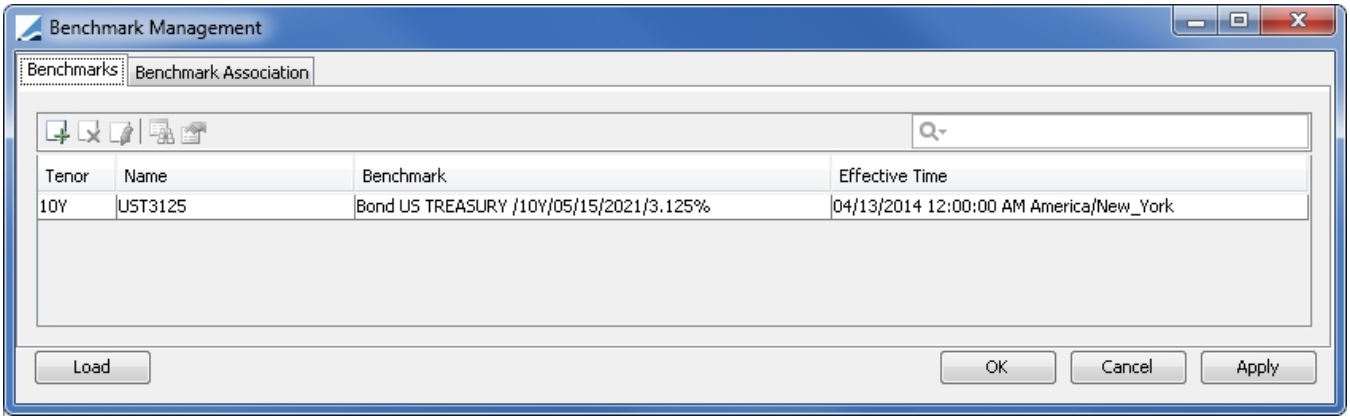


4. Defining Bond Benchmarks

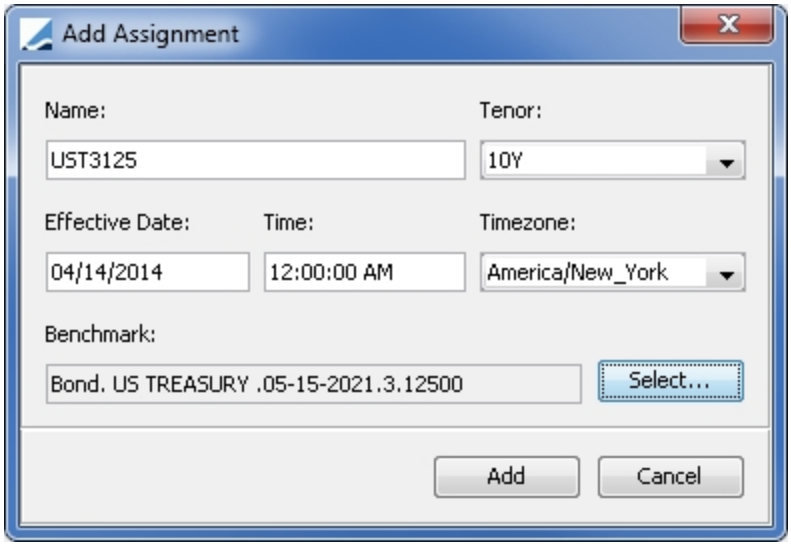
When you define a bond, you can associate any bond or bond future as a benchmark, and quote the bond as a spread over the benchmark bond or bond future. However, you might also want to modify the benchmark over the life of the bond.

In order to do so, you can specifically identify a given bond or bond future as a benchmark as of a given date.

From the Calypso Navigator, navigate to **Configuration > Fixed Income > Benchmark Management** to specify benchmarks as shown below.

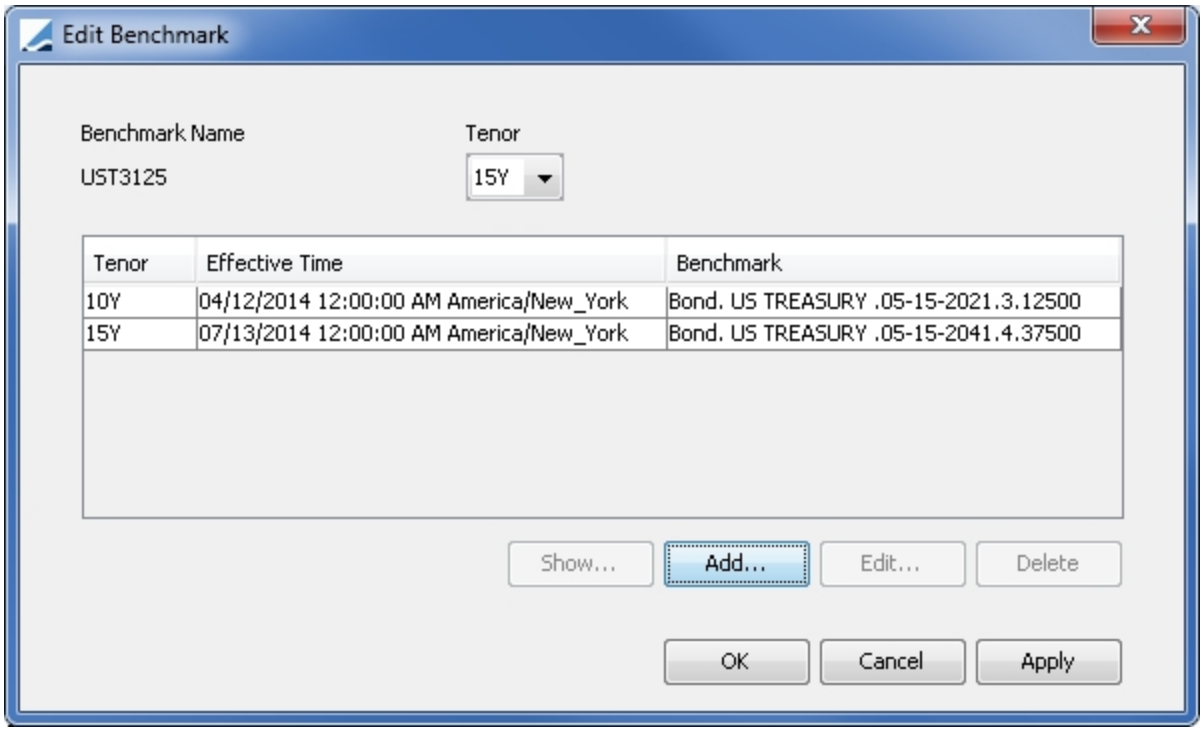


» Click to add a benchmark. The Add Assignment window will appear.



Enter a benchmark name, select a tenor, click **Select** to select a bond or bond future, and enter an effective date and time. Then click **Add**.

» You can select a benchmark and click to modify it as applicable, in particular if you want to add a new benchmark effective at a given date.

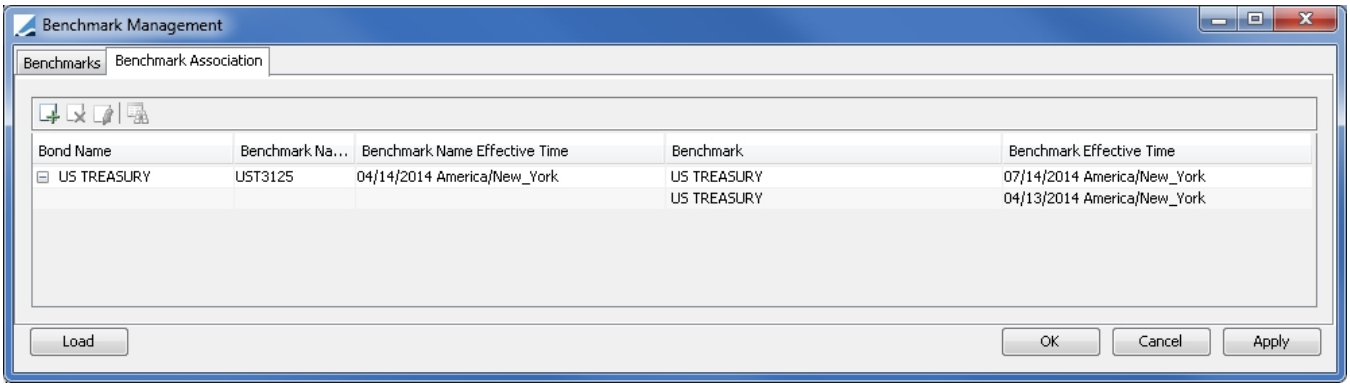


Click **Add** to add a new benchmark.

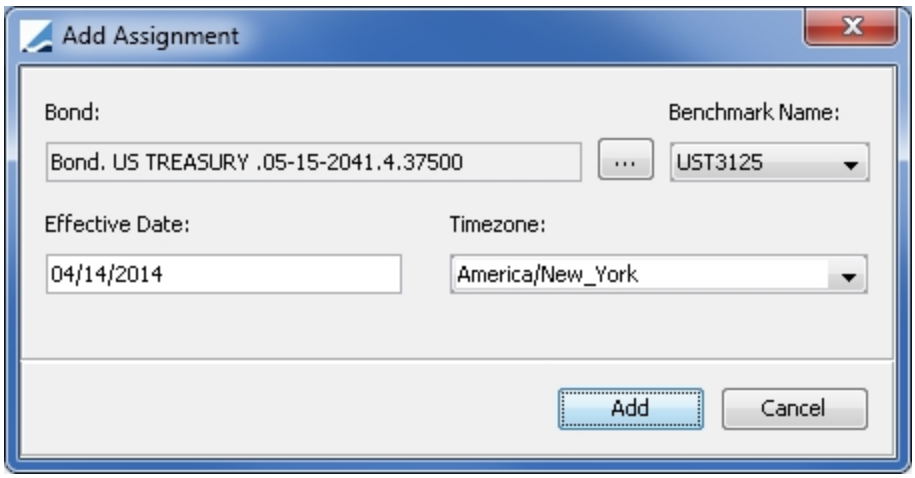
- You can also click to display the details of the underlying bond or bond future.
- Click **Apply** to save your changes.
- Select a benchmark and click to display which bonds are using it.
- Click **OK** to close the window.

Benchmark Association

You can associate a benchmark with a bond from the Benchmark Association panel. This configuration, if any, overrides the benchmark in the bond product definition.

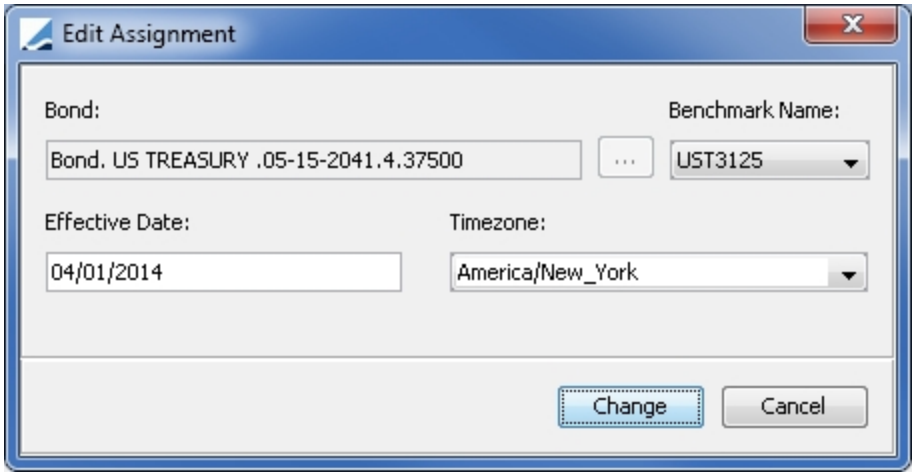


» Click to add an association. The Add Assignment window will appear.



Click ... to select a bond or bond future, select a benchmark name, and enter an effective date and timezone. Then click **Add**.

» You can select an association and click to modify it as applicable.



Make modifications as necessary and click **Change**.

» You can also click to display the details of the underlying bond or bond future.

» Click **Apply** to save your changes.

» Click **OK** to close the window.

5. Defining Bond Products

Prior to trading a bond, you need to create the Bond product.

From the Calypso Navigator, navigate to **Configuration > Fixed Income > Bond Product Definition** to open the Bond window.

When you open the Bond window, the Bond panel is selected by default.

▶ You can view existing bonds using the Bond Report.

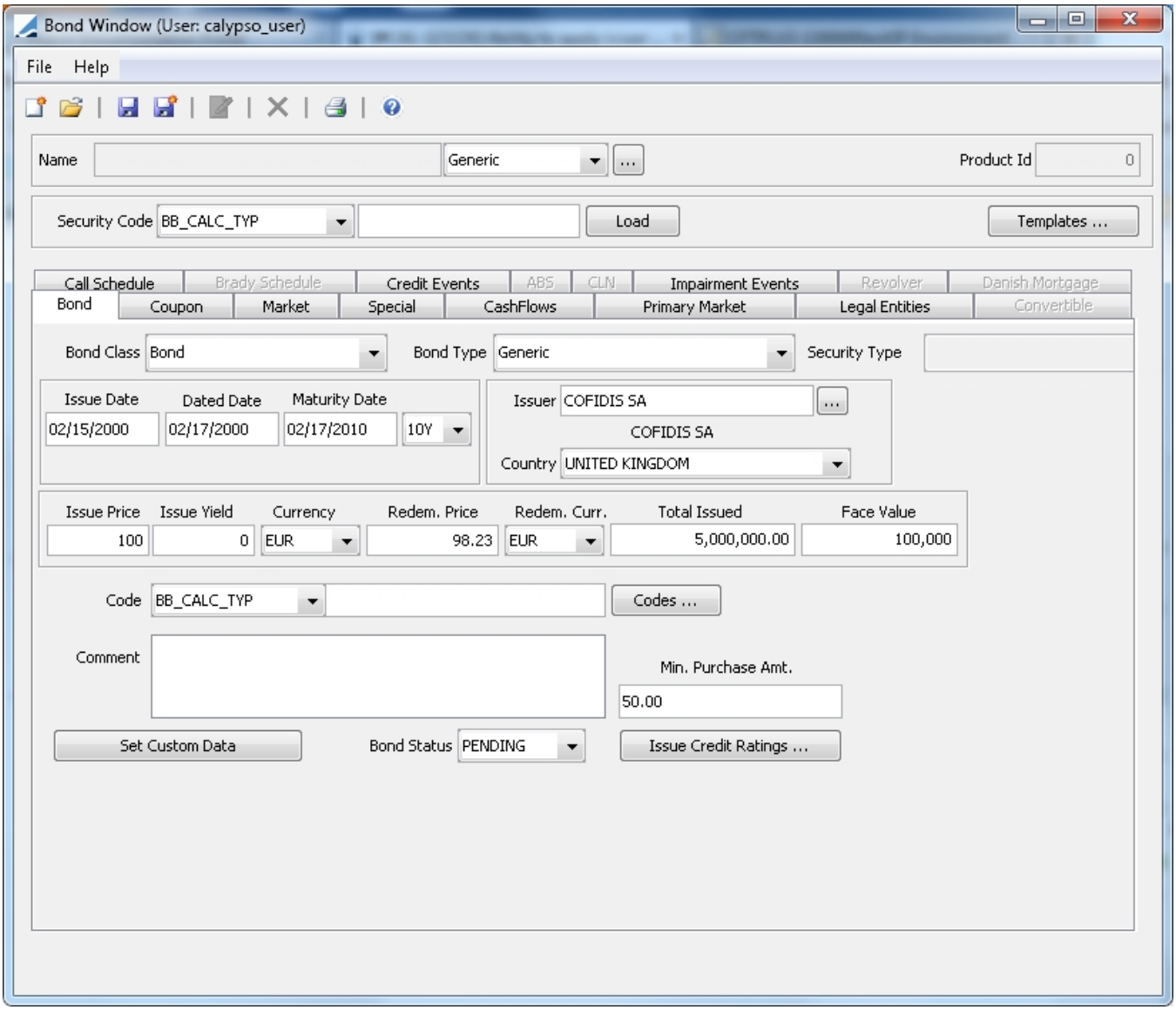
Contents

Defining Specific Bond and Product Types

- When-Issue Bonds

5.1 Defining a Bond

Select the Bond panel to define a bond.



Bond Product Definition Window

5.1.1 Loading an Existing Bond

You can load an existing bond into the Bond Product window using one of the following methods:

- Select a security code from the Security Code list, and enter the actual code value in the adjacent field.

  Then click **Load** to load the corresponding bond.
- You can also click **Load** at the bottom of the window to open the Product Chooser window.

  Then enter the fields described below.

5.1.2 Creating a New Bond

You can create a new bond using one of the following methods.

- If you have specified bond defaults, select a bond default next to the Name field. It will populate the corresponding fields in the Bond window. You can click **...** to create new bond defaults.
- If you have specified bond templates, click **Templates** and choose "Load Template". It will populate the corresponding fields in the Bond window.
- Otherwise, click **New** and enter the fields in the Bond panel and in the other panels as applicable. The fields are described below.

5.1.3 Manipulating Bond Templates

You can save the current bond as a bond template, or load an existing bond template to create a new bond.

- Click **Templates** to manipulate bond templates.

  You can convert all bond defaults to bond templates, load a bond template, remove a bond template, and save the current bond as a bond template.

5.1.4 Modifying a Bond Name

- Click **Update Name** to modify the bond's name. You will be prompted to enter a new name.

5.1.5 Setting Custom Data

- Click **Set Custom Data** to specify custom data as applicable. It invokes a class named `apps.product.BondCustomDataWindow` that implements `com.calypso.apps.product.CustomDataWindow`, provided it is implemented and compiled. Refer to the *Calypso Developer's Guide* for details.

5.1.6 Saving a Bond

- Click **Save** to save your changes. You will be prompted to enter a bond name.
  - When a bond is saved, you can save the quote type. By default the proposed quote type is the one specified in the Market panel.

- You will also be prompted to generate the corporate actions for the bond. You can then apply the corporate actions using **Trade Lifecycle > Corporate Action > Corporate Action** – Apply panel, or the scheduled task CORPORATE_ACTION.

» You can also click **Save As New** to save the bond as a new bond. You will be prompted to enter a new bond name.

5.1.7 Setting Credit Data

» Click **Issue Credit Ratings** to set credit data at the bond level (they can also be set at the issuer level). The Product Credit Rating report will appear.

- Select an agency, a rating type, a value, and a date range then choose **ProductCreditRating > Add New Rating (F5)** to add the rating value.
- You can also use this report to display existing rating values.

[NOTE: Access permissions are needed to add, modify or delete a credit rating in the Product Credit Report Rating window. Functions must be configured in the *function* domain]

5.1.8 Printing a Bond Ticket

» Click **Print** to print a bond ticket using the default template.

- The default template can be customized as described under Defining a Bond Ticket Template.

Fields	Description
Name	Name given by the user when the bond is saved.
Product Id	Unique id given by the system when the bond is saved.
Bond Class	Select a bond class. The following bond classes are available out-of-the-box: • Bond – Vanilla bonds with a long term maturity. May be fixed or floating rate; may be bullet, amortizing or sinking. • BondAssetBacked – Any security that pays down based on a factor (for example, Asset Backed and Mortgage Backed Securities). ▶ See Specifying Asset Backed Bonds for details. • BondBrady – Brady bonds. Allows interest capitalization. ▶ See Specifying Brady Bonds for details. • BondConvertible – Convertible bonds. ▶ See Specifying Convertible Bonds for details. • BondCLN – Credit linked notes. ▶ See Specifying Credit Linked Notes for details.

Fields	Description
	• BondDanishMortgage – Danish mortgage bonds. ▶ See Specifying Danish Mortgage Bonds for details. • BondFRN (Floating Rates Notes) – Floating rate notes. ▶ See Specifying Floating Rate Notes for details. • BondMMDiscount – Discounted money market instruments with a short-term maturity (for example, TBills). The coupon frequency must be set to NON. • BondMMDiscountAUD – Australian discounted money market instruments with a short-term maturity. • Bond MMDiscountWithAI – Chinese Money Market instruments that are issued under par and pay interest at maturity. ▶ See Specifying Chinese Bonds for details. • BondMMInterest – Money Market instruments with short-term or mid-term maturity (for example, CDs, CPs, BMTN, and TNotes). ▶ See Specifying BondMMInterest Products for details. • BondRevolver – Revolver bond. ▶ See Specifying Revolver Bonds for details. **[NOTE: MBSArm and MBSFixedRate are not currently supported]** Bond classes are defined in the *productType* domain. ▶ For information on creating a new Bond class, refer to the *Calypso Developer's Guide*.
Bond Type	Select a bond type. For each bond class, there is a list of bond types in the *<bond class>.subtype* domain, for example *Bond.subtype*. The bond type will be used for pricer / curve selection to compute the Yield-to-Price formula. You can create bond types as applicable for reporting purposes. For the "Azeri" bond type, all frequency tenors will be treated as day-based. E.g. Quarterly will be treated as exact 90D and semi-annual will be treated as exact 180D. **[NOTE: Domain names are case-sensitive]**
Security Type	You can select a security type provided security types are defined in domain *<Bond Class>.extendedType*, for example *Bond.extendedType*. The security type can be used for pricer / curve selection, and reporting purposes. **[NOTE: Domain names are case-sensitive]**
Issue Date	Enter the issue date.

Fields	Description
Dated Date	Enter the accrual calculation start date. ***Bonds with a Dated Date > Issue Date*** PricerBondGeneric can compute bonds with a Dated Date > Issue Date. For example, on a Spanish Government bond defined with Issue Date = 07/15/2000 and Dated Date 09/01/2002, it is possible to input trades between the issue date and the dated date in order to obtain the settlement amount, i.e. without any accruals calculation. Similarly, a bond with Dated Date < Issue Date may be purchased on its issue date with accrued interest.
Maturity Date	You can enter the maturity date, or select a maturity offset. If you select a maturity offset, the maturity date will be calculated as dated date + maturity offset. Date can be left blank for perpetual bonds. You need to set the stub end date however to determine how far to generate the cashflows. **[NOTE: The maturity date for a perpetual bond defaults to +60,000 days after the val date. This behavior can be overridden at the API level]**
Issuer	Click ... to select the issuer. The issuer is a legal entity of role Issuer.
Country	Defaults to the country of the issuer. Modify as applicable.
Issue Price	Enter the issue price. ***Issue Price Base*** You can specify a different base to use for Issue Price and Redemption Price using the product code "Issue Price Base". If left blank, the default is base 100. Example: Taiwanese bills are entered in base 10,000. 
Issue Yield	Used in defining Chilean Bond products. Enter the Tasa Efectiva Real Anual (TERA) rate for the bond.
Currency	Select the issue currency.
Redem. Price	Enter the redemption price. ***Issue Price Base*** You can specify a different base to use for Issue Price and Redemption Price using the product code "Issue Price Base". If left blank, the default is base 100. Example: Taiwanese bills are entered in base 10,000. 
Redem. Curr.	Redemption currency. Defaults to the issue currency.

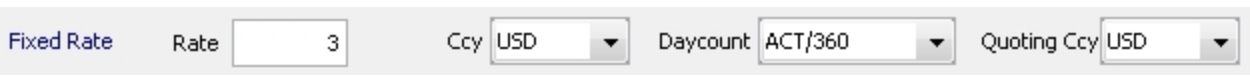
Fields	Description
	Select another currency as applicable. When the redemption currency differs from the issue currency, you can enter the redemption FX rate in the Market panel. ▶ See Specifying Market Conventions for details.
Total issued	Enter the total face amount of the issue (original par amount used for generating the cashflows). The amount issued does not necessarily need to be correct but an amount greater than the face amount needs to be populated.
Face Value	Enter the face value.
Code	Displays the default code selected in **Configuration > User Access Control > User Defaults**, and its associated value in the adjacent field. Click **Codes** to enter the actual code values. » Double-click the Value field corresponding to a code and enter its value. » Then click **Apply**. You can create product codes using **Configuration > Product > Code**. You can add security codes to the domain *securityCode.ReprocessTrades* that require checking if trades need to be reprocessed if the security codes are modified. You can update security codes in bulk using the Bond report. ▶ See Bond Report for details.
Comment	Enter a free comment as applicable.
Min. Purchase Amt	Enter a minimum amount required to trade that bond as needed.
Bond Status	Only applies to Bloomberg static data integration. Shows the status of the integration. You can change it as applicable. It is available in the Bond report for filtering bonds and as a column “Bond Status”, and as a static data filter element.

5.2 Specifying the Coupon

Select the Coupon panel to specify the coupon.

5.2.1 Specifying a Fixed Rate

The Fixed Rate label is displayed by default.

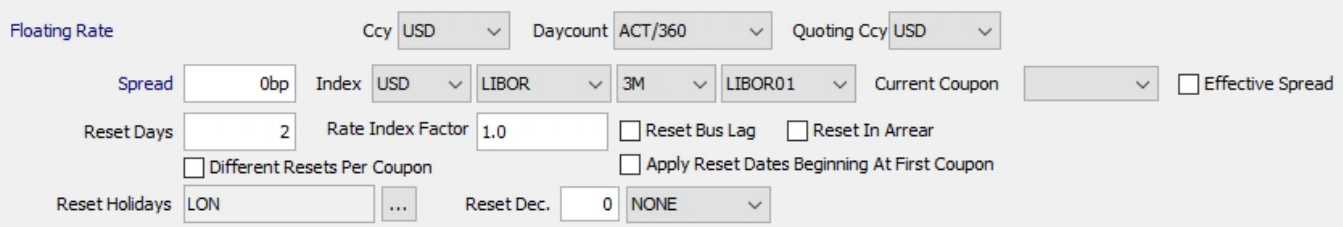


» Enter the fields described below as applicable.

Fields	Description
Rate	Enter the fixed rate.
Ccy	Select the coupon currency.
Daycount	Enter the coupon daycount. Daycount conventions are described under **Help > Day-Count Conventions**.
Quoting Ccy	In the case of an All-In Price Quote, set the quoting currency to be the same as the coupon currency. Otherwise, set it to match the bond currency. If you set the quoting currency to match the coupon currency, it assumes the quote includes the FX rate conversion and inflation adjustment.

5.2.2 Specifying a Floating Rate

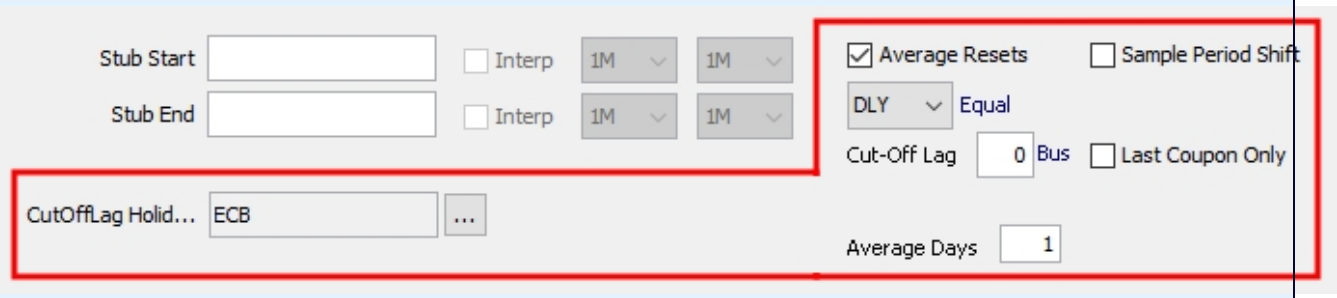
Double-click the Fixed Rate label to switch to Floating Rate.



» Enter the fields described below as applicable.

Fields	Description
Ccy	Select the coupon currency.
Daycount	Enter the coupon daycount. Daycount conventions are described under **Help > Day-Count Conventions**.
Quoting Ccy	In the case of an All-In Price Quote, set the quoting currency to be the same as the coupon currency. Otherwise, set it to match the bond currency. If you set the quoting currency to match the coupon currency, it assumes the quote includes the FX rate conversion and inflation adjustment.
Spread	Enter a spread value in basis points over the floating rate. Note that this field can be customized to apply a change in spread to the remaining cashflows, in the case of auctioned bonds for example, where the spread changes on the auction date. » Double-click the Spread label to switch to Var. Spread. » Then click ... in order to specify a spread schedule. You can specify a spread schedule using a coupon date rule, or using a start date, an end date and a frequency.

Fields	Description
	– Click **Generate** to generate the schedule. – Enter spread values in the spread schedule as applicable. – Finally, click **Apply** to save the spread schedule.
Index	Select the currency, rate index, tenor and source that identify the floating rate. Rate indices are specified using **Configuration > Interest Rates > Rate Index Definitions**. Note that you can choose an index with a currency different from the coupon currency, in the case where the security is not yet re-denominated but the index is in EUR for example.
Current Coupon	Used by Colombian DTF and IBR-linked bonds. ▶ See Specifying Colombian Bonds for details.
Effective Spread	Used by Colombian DTF-linked bonds. ▶ See Specifying Colombian Bonds for details.
Reset Days	Defaults to the reset lag specified in the Rate Index definition. Modify as applicable. This is the number of days lag for the floating rate's fixing.
Rate Index Factor	Enter a factor to apply to the floating rate as applicable.
Reset Bus Lag	Check the "Reset Bus Lag" checkbox to specify the reset lag as business days, or as calendar days otherwise.
Reset In Arrear	Check the "Reset In Arrear" checkbox to indicate that the floating rate is known at the end of the interest period, or clear this box otherwise.
Different Rates Per Coupon	Check "Different Resets Per Coupon" to generate the reset dates based on the coupon payment frequency, or clear it to generate the reset dates based on the index tenor.
Apply Reset Dates Beginning At First Coupon	When checked, resets will be produced starting from the issue date. Otherwise resets are produced starting at the maturity date.
Reset Holidays	Click **...** to select reset holiday calendars.
Reset Dec.	Enter the number of decimal places and select the rounding method from the adjacent field. Used for CCT bonds for example.
Average Resets	You can check the "Average Resets" checkbox at the bottom of the window to sample resets at a frequency different from the payment frequency. Otherwise, the resets are sampled at the payment frequency.

Fields	Description
	 Select the sampling frequency. For "WK", you can select the day of the week. When the sampling frequency is more frequent than the payment frequency, you can define the weight of the resets by double-clicking the label next to the reset frequency. • Equal – Resets within the sampling period are equally weighted. • Weighted – Resets are weighted according to the number of days for which they apply. For example, if a reset occurs on a Monday, the weight is 1 day; if it occurs on a Friday, the weight is 3 days (Friday, Saturday and Sunday). • Simple – The reset rate is calculated as the mean rate within the sampling period. • Cutoff Adj. – Calculates weighting up to cutoff date. The cutoff date is set as a number of days from the last sample period's end date, entered in the field "Cut-Off Lag". • Cutoff Weekly – If you specify a reset cutoff in the field "Cut-Off Lag", the last sample period will be "end date - reset cutoff".
Sample Period Shift	Only applicable with daily compounding or daily averaging. When checked, the sample weights will be shifted as per the shifted dates of the period. The shifting of observation dates will be visible in the Reset Samples window on the generated cashflows under the "Observation Start Date" and "Observation End Date" columns.
Last Coupon Only	Only applicable with daily compounding or daily averaging. When checked, the cutoff lag will only be applied to the last interest period.
CutOffLag Holidays	You can specify an independent holiday calendar for cutoff lag using business days.
Average Days	Only displayed for Argentine flipper bonds with the "ARS" yield method. ▶ See Specifying Argentine Bonds for details.

5.2.3 Specifying a Variable Rate

Double-click the Fixed Rate label to switch to Variable.

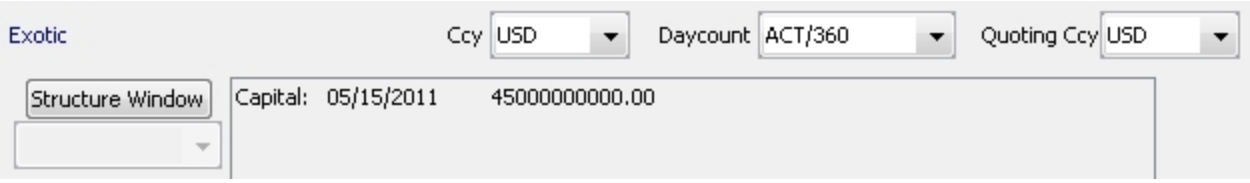
» Click ... to display the Coupon Schedule dialog.
  – Select a coupon date rule, or enter a start date, an end date and select a frequency. Then click **Generate** to generate the corresponding coupon schedule.
  – Enter coupon rates (as absolute values) in the coupon schedule as applicable. The coupon rate will apply up to the specified period end date.
  – Then click **Apply**.

» Enter the fields described below as applicable.

Fields	Description
Ccy	Select the coupon currency.
Daycount	Enter the coupon daycount. Daycount conventions are described under **Help > Day-Count Conventions**.
Quoting Ccy	In the case of an All-In Price Quote, set the quoting currency to be the same as the coupon currency. Otherwise, set it to match the bond currency. If you set the quoting currency to match the coupon currency, it assumes the quote includes the FX rate conversion and inflation adjustment.

5.2.4 Specifying an Exotic Rate

Double-click the Fixed Rate label to switch to Exotic.



» Click **Structure Window** to display the Structured Dialog. Help is available from that window. When the formula is applied, it is displayed in the formula area.

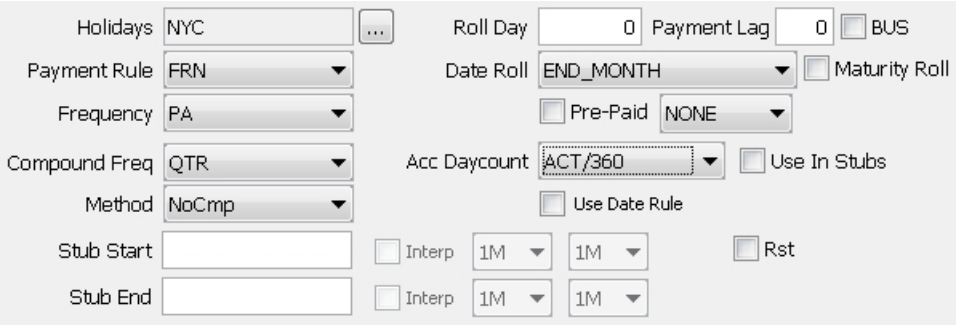
  You can also select an exotic structure type if you have defined any. See **Configuration > Product > Structure Type Creator** for details.

» Enter the fields described below as applicable.

Fields	Description
Ccy	Select the coupon currency.
Daycount	Enter the coupon daycount. Daycount conventions are described under **Help > Day-Count Conventions**.
Quoting Ccy	In the case of an All-In Price Quote, set the quoting currency to be the same as the coupon

Fields	Description
	currency. Otherwise, set it to match the bond currency. If you set the quoting currency to match the coupon currency, it assumes the quote includes the FX rate conversion and inflation adjustment.
Acc Daycount	Enter the accrual daycount. Daycount conventions are described under **Help > Day-Count Conventions**.

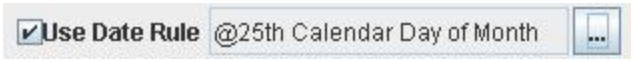
5.2.5 Specifying Payment Characteristics

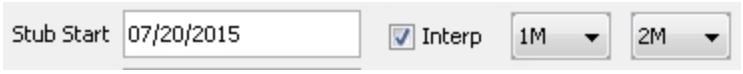


» Enter the fields described below as applicable.

Fields	Description
Holidays	Click ... to select payment holiday calendars. Note that if you save a bond without a holiday calendar, a warning message will appear.
Roll Day	Enter the day of the calendar month to be used as each coupon period's end date day. If this is set to zero, then the maturity date day of the month will automatically be used by default. So, for example, if the issue date is 7/10/04, the maturity date is 7/20/34, the coupon frequency is SA (semi-annual), and a value of 16 is entered in this field, the coupon payment dates will be 7/16 and 1/16 (there will be 'stub' periods at both the beginning and the end).
Payment Lag BUS	Enter the number of days lag between the coupon date and the actual payment date, as applicable. Check the "BUS" checkbox to specify the payment lag as business days, or as calendar days otherwise. If the payment lag entered exceeds 30 days, the payment day will be calculated with a lag of 1 month for each 30 days, and then the remaining number of days added to the coupon period end date. Example: A payment lag of 44 for a security with coupon period end date on the 12th day of the month would pay on the 26th of the following month. Example: A payment lag of 54 for a security with coupon period end date on the 12th day of the

Fields	Description
	month would pay on the date which is 24 days after the 12th day of the following month.
Payment Rule	Select the payment rule. The following payment rules are available: • ADJUSTED – The coupon payment period is calculated to the actual payment date. • UNADJUSTED – The coupon payment period is NOT adjusted if the coupon period end date falls on a non-business day (and therefore rolls to a different date). • MAT_UNADJUSTED – Same as ADJUSTED except for the maturity flow which is UNADJUSTED (for derivatives). • FRN – Sets the start and end date at the end of the month, even if the date roll is the 15th (for derivatives).
Date Roll	Payment date roll convention if the coupon period end date is not a business day. Date roll conventions are described under **Help > Date Roll Conventions**.
Maturity Roll	When checked, the maturity principal payment Pmt Dt is used to calculate the price. If not checked, the maturity principal payment Pmt End is used to calculate the price.
Frequency	Select the payment frequency. The standard list is: DLY (Daily), WK (Weekly), BIWK(Bi-Weekly), LUN (Lunar), MTH (Monthly), BIM (Bi-Monthly), QTR (Quarterly), SA (Semi-Annually), PA (Annually), ZC (Zero Coupon, End of period). You can check "Use Date Rule" instead to generate the coupon based on a date rule.
Pre-Paid	Allows you to specify BondMMInterest products for which the coupon is paid at the beginning of the period. The calculation of the Coupon amount is exactly the same as the classic BondMMInterest except that it is paid by the Issuer at the beginning instead of the end of the period. The FX Reset Date for Dual Currency Bonds will be calculated based on the checkbox selection. When checked, the FX reset date will be calculated using the coupon begin date. If unchecked, the reset date is calculated using the coupon end date. ▶ See Specifying BondMMInterest Products for details.
Compound Freq	Select the reset frequency. By default it is the same as the payment frequency. The weekly frequency "WK(R)" works as follows. For a 3M bond paying MONTHLY compounding WEEKLY, this method splits the 90 days into 3 periods of 30 days each, and then splits the 30 day periods into periods of 7 days thus leaving stubs on each coupon period.
Acc Daycount	Daycount used for the accrual calculation. By default, it corresponds to the coupon daycount and can be modified. Daycount conventions are described under **Help > Day-Count Conventions**.
Use In Stubs	Check the “Use in Stubs” checkbox to apply the accrual daycount to stub periods.
Method	Select the interest calculation method: • NoCmp – The coupon amount to be paid is the sum of the individual reset interest

Fields	Description
	amounts. • Flat – The reset interest amounts will compound to calculate the coupon to be paid. Note that this method cannot be used when the payment frequency is greater than the reset frequency. • Spread – The interest compounds at the rate value plus spread. Only applies to floating rates. On the CashFlow panel, right-click an INTEREST cashflow and choose "Interest History" to see its details.
Use Date Rule	Check to select a date rule for the coupon generation rather than the frequency. 
Cut-Off Lag	Only appears if Compounding Freq = DLY. The number of days of cutoff lag to be applied every coupon period. You can specify business or calendar days by double-clicking the adjacent label.
Stub Start Stub End Interp	Stub Start contains the security's first coupon period end date. If the security's first coupon period end date is standard, it is not necessary to enter this date here (although it may still be entered). Stub End contains the security's penultimate coupon period end date. As with Stub Start, it is not necessary to enter this date if the date is standard. It must be set for perpetual bonds to determine how far out to generate the cashflows. If you have a period shorter or longer than the classic periods, you put either the first coupon's date or the last coupon's date. When the bond does not have the same Daycount and Accrual Daycount, and a long stub period is detected, then the Accrual Daycount is set on the Coupon, and a CouponPeriodSchedule is created for this Coupon, with two coupon periods having the following characteristics: • First Period – Start Date = Coupon Start Date – End Date = Coupon End Date - one Period (depends on the Coupon Frequency) – dayCount = Accrual Daycount • Second Period – Start Date = Coupon End Date - one Period (depends on the Coupon Frequency) – End Date = Coupon End Date – dayCount = Bond Daycount Periods can be seen when you right-click a cashflow in the CashFlow panel of the Bond, and

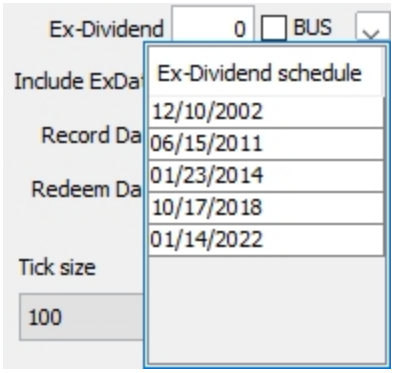
Fields	Description
	choose "Show Paydown Periods" from the popup menu. ***Interp checkbox*** Only applies to floating bonds.  Whenever there is a stub on a floating rate, the system automatically calculates the best index tenor for the stub period (provided “No Auto Interp” is unchecked on the rate index 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.
Interp Rounding	The field "Interpolated Rates" is used to determine the rounding, and support rounding for BondFRN Interpolated Rate in Stub. By default, the Interpolated Rates should be set to match the rounding set in the rate index. The drop-down can be set from: Nearest, Up, or Down. 
Average Resets	▶ See "Average Resets" in Specifying a Floating Rate.

5.3 Specifying Market Conventions

Select the Market panel to specify market conventions.

» Enter the fields described below as applicable.

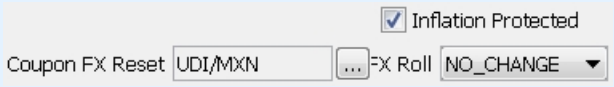
Fields	Description
Settle Days	Number of days between the trade date and the settlement date. This field is used in the trade window to initialize the settlement date.
Accruals Days	Currently not used. It should be equal to the Settle Days.
Ex-Dividend BUS	Number of days used to define the ex-dividend date. The following number of days can be specified: • A positive number – The ex-dividend date will be coupon date - number of days. • “-1” (Ireland bond) – The system initializes the ex dividend dates as following: Coupon date - 21 days to get to the week of dividend period and then select the Wednesday of that week (so it will vary from -21 to -27...).

Fields	Description
	• "-2" (South Africa bond) – The ex-dividend date of a coupon is set to one calendar month before the end date of the coupon. If the coupon date = end of month then the ex-dividend date will also be set at end of month dates. Otherwise, it will follow the calendar month. • "-3" (Denmark bond) – The system initializes the ex dividend dates as following: Coupon date - 30 days. Check the "BUS" checkbox to specify the number of days as business days, or as calendar days otherwise. You can specify an ex-dividend schedule instead which will ignore the ex-dividend days and be used to determine the ex-dividend date.  » Click ▾ next to the "BUS" checkbox. » Right-click within the Ex-Dividend schedule popup to add a row. » Double-click the row and select a date. Add as many rows and dates as needed.
Include ExDate	When checked, positive accrual will be computed while valuing on ex-div date and accrual measures will be impacted.
Record Days	Enter the number of record days prior to the coupon payment date. The record date in the cashflows will be displayed as payment end date - record days.
Redeem Days	Enter the number of redemption record days as needed. In the cashflows, redemption record date = maturity date - redeem days. If "BUS" is checked, business days will be used to determine the record date, otherwise calendar days will be used.
Accrual Dig.	Number of decimals for the accrual, when expressed in percentage. You can select the rounding method from the adjacent field: NEAREST, DOWN or UP. Rounding methods are described under **Help > Rounding Methods**.
Price Dec.	Number of decimal places for the price. If you do not specify the number of decimals, the system will take the value of the environment property BOND_PRICE_DECIMAL. You can select the rounding method from the adjacent field: NEAREST, DOWN or UP.

Fields	Description
	Rounding methods are described under **Help > Rounding Methods**.
Yield Dec.	Number of decimal places for the yield. If you do not specify the number of decimals, the system will take the value of the environment property BOND_YIELD_DECIMAL. You can select the rounding method from the adjacent field: NEAREST, DOWN or UP. Rounding methods are described under **Help > Rounding Methods**. You can specify lower and upper initial yield limits using the MIN_YIELD and MAX_YIELD pricing parameters.
Nominal Dec.	Number of decimal places for the nominal.
Coupon Rate Dec.	Number of decimal places for the coupon rate. You can select the rounding method from the adjacent field: NONE, SAME AS ACCRUAL, NEAREST, DOWN or UP. • NONE – No rounding. • SAME AS ACCRUAL – Rounding is the same as accrual rounding. The Coupon Rate digit field is disabled. The other rounding methods are described under **Help > Rounding Methods**.
Capitalization Dec.	Number of decimal places for the capitalization factor of PIK ("Payment In Kind") bonds, such as Brady bonds. You can select the rounding method from the adjacent field: NEAREST, DOWN or UP.
Discount Margin Dec.	Number of decimal places for the discount margin. You can select the rounding method from the adjacent field: NEAREST, DOWN or UP.
Announce Date	Date of announcement for a new issue (for Issuance through an issue syndicate, like Corporate Bonds).
Auction Date	Date of auction for a new issue (for Issuance through an auction, like Government Bonds such as OAT).
Default Date	Only applies to Brady bonds. Enter the date at which the bond has defaulted. When a bond has defaulted, all cashflows are set to 0, except for the guaranteed cashflows specified in the Brady schedule.
Withholding Tax	Click ... next to the Withholding Tax field to bring up the Withholding Tax Config window. ▶ See Withholding Tax Configuration for details.
Apply Withholding Tax	Check to apply the withholding tax to the cashflows, or uncheck otherwise. If you set the environment property SEC_WITHHOLDINGTAX=true, the withholding tax will be automatically withdrawn from the coupons, and reclaim fees will be automatically generated. ▶ See Withholding Tax Generation for setup details.

<table>
<tr><th>Fields</th><th>Description</th></tr>
<tr><td>When Issue Bond</td><td>Check to identify a “When-Issue” bond.
▶ See Specifying When-Issue Bonds for details.</td></tr>
<tr><td>Rounding Rule</td><td>You can add rounding rules as needed.
<table>
<tr><th>Rounding Rule</th><th>Decimal</th><th>Rounding Method</th></tr>
<tr><td>Cashflow Amount</td><td>6</td><td>NEAREST</td></tr>
<tr><td>Day Count</td><td>14</td><td>DOWN</td></tr>
<tr><td>Discounted Cashflow</td><td>10</td><td>NEAREST</td></tr>
<tr><td>Inflation Unadjusted Price</td><td>4</td><td>DOWN</td></tr>
<tr><td>Settlement Amount</td><td>2</td><td>DOWN</td></tr>
</table>
» Right-click in the Rounding Rule area and select Insert Row.
» Select a rounding rule. The following rounding rules are available:
– Accrual Amount: Rounds the accrual.
– Accrual Rate: For daily compounding or averaging coupons, rounds the final accrual rate (the calculated daily averaged or compounded rate that will then be applied to the Notional * Period to calculate Accrual Amount). Also controls the visible decimals in the Accrual Rate field of the Bond Trade window.
– CA Interest Amount: Rounds the INTEREST of corporate actions.
– Cashflow Amount: Rounds the cashflows, including prepayment cashflows. This also affects the prices based on the cashflows.
– Daily Interest: Only used by PricerBondUSTFRN. The rounding is applied to each calendar day.
– Day Count: Rounds the daycount fraction used for the price yield calculation (i.e. discounting).
– Discount: Rounds the discount.
– Discount Factor: Rounds the discount factor.
– Discounted Cashflow: Rounds the cashflows after they have been discounted. This also affects the prices based on the discounted cashflows.
– Discounted Cashflow By Facevalue: Rounds the PV Disc.
– Inflation Unadjusted Price: Rounds the price before it is adjusted by the notional factor.
– Mortgage Payment Rate: Rounds the constant payment rate which is calculated for each period on bonds that have a Sinking or Amortizing principal of type Mortgage, used by Chilean bonds Letra Hipotecaria.
– PRECIO: Rounds the PRECIO pricer measure, used by Chilean bonds.
– Pre FX Settlement Amount: Rounds the VALOR amount before it is adjusted by the</td></tr>
</table>

Fields	Description
	FX rate in the VALOR_MERCADO pricer measure, used by Chilean bonds. – Principal Amount: Rounds the principal amount to override Currency Default rounding settings. – Settlement Amount: Rounds the settlement amount of a trade. In addition, several other pricer measures are rounded by this amount, including PV, NPV, SETTLEMENT_VALUE, and CA_COST. Note that you will also need to set the security code SETTLEMENT_ROUNDING_CONVENTION to total. » Enter the number of decimal places. » Select the rounding method. Rounding methods are described under **Help > Rounding Methods**. » Repeat as needed.
Tick Size	Tick size of the quote. For Repo trades: For securities with tick size other than 100: You can convert Clean Price to decimal format when Dirty Price or Yield are specified on trade screen. For this, you need to set the security product code SECFINANCE_QUOTE_BASE =100.
Yield Method	Method applied to convert the price to yield and the yield to price. • ARS – Yield method for Argentine dual-currency bonds. • BankOfCanada – Yield method for Canadian government bonds. • CPR – Yield method for asset backed bonds with a CPR (Conditional Prepayment Rate) prepayment type. The prepayment type and quote are specified in the ABS panel. • Exp_ACT360 – Exponential method using the ACT/360 daycount convention for computing the year fraction, irrespective of the bond's daycount. • Exp_ACT365 – Exponential method using the ACT/365 daycount convention for computing the year fraction, irrespective of the bond's daycount. • Exp_NL365 – Exponential method using the NL/365 daycount convention to not consider leap year for discounting. • Exponential – Exponential method using the bond's daycount. • ISMA – ISMA methodology. • MM_ACT30 – Money market yield method for monthly yield-quoted bonds using the ACT/30 daycount. Currently only supported for zero coupon bonds. • MM_ACT360 – Money market yield method using the ACT/360 daycount convention. • MM_ACT365 – Money market yield method using the ACT/365 daycount convention. • MXN – Yield method for Mexican bonds. • Norwegian – Yield method for Norwegian bonds. Uses a yield discounting daycount

Fields	Description
	similar to ACTB/ACTB, except that the first fractional period is calculated on an ACT/365 basis rather than ACT/ACT. • PSA – Yield method for asset backed bonds with a PSA (Public Securities Association) prepayment type. The prepayment type and quote are specified in the ABS panel. • ThaiBMA – Yield method for Thai bonds. Uses the 30Thai/360 daycount convention, which has special handling for the last day of February. • USSTREET – Yield method for asset backed bonds. The prepayment type and quote are specified in the ABS panel. • USSTREET_Lag – Yield method similar to USSTREET except that in the case of payment lag, the lag days are factored into the discounting. ▶ Refer to the *Calypso Bond Analytics Guide* for more details on these yield methods.
Quote Type	Quote type: AOAS (Agency Option Adjusted Spread – Used for European callable bonds), Clean Price, Dirty Price, Discount, Future, Gross Price, Gross Unitary Price, Price, Price32, Price64, Spread, Unitary Price, Yield, Yield To Best, Yield To Custom, Yield To Maturity, Yield To Next, or Yield To Worst. The quote type is automatically displayed in the trade window. For the Spread quote type, you should select a benchmark. See benchmark fields below. For the Yield To Custom quote type, you must have Effective Call = Custom, and a Call Date set in the Call Schedule panel. ▶ Refer to Calypso Zero Curve documentation for complete details on Agency Option Adjusted Spread (AOAS) pricing for bonds.
Inflation Protected	Only applies to Mexican BPA inflation protected bonds (floating rate bond with yield method = MXN). When checked, specify an FX index in the Coupon FX Reset field, and an FX Roll convention.  The rate will be calculated as: Max(Index Rate, FX Index Rate Change) where FX Index Rate Change = (FX End Period / FX Beginning Period - 1) * 360 / Days in Period
Fixed Coupon Rate Coupon FX Reset	Only appear if the currency of the coupon is different from the currency of the bond. You can enter a fixed FX rate in the Fixed Coupon Rate field, or select an FX Reset from the Coupon FX Reset field.
FX Roll	Only applies to dual currency bonds. When rolled days will be included in interest calculation, select a date roll convention to determine how to roll the dates for the FX.

Fields	Description
	Note that when using FX Roll, the FX reset date will be computed from the unadjusted coupon period.
Fixed Redemption Rate Redem FX Reset	When the redemption currency is different from the issue currency, you can set the FX rate as follows. • Option 1 – Set a fixed FX rate: Check "Fixed Redemption Rate" and enter the FX rate in the adjacent field. • Option 2 – Retrieve the FX rate from an FX Rate Definition on redemption date: Clear the "Fixed Redemption Rate" checkbox, and select an FX Rate Definition from the Redem FX Reset field. FX Rate Definitions are defined under **Configuration > Foreign Exchange > FX Rate Definitions**. The FX rates are reset using **Trade Lifecycle > Reset > FX Rate Reset**.
Issue Paying Agent	Name of the Issue Paying Agent for a new issue. The agent should be previously created as a Legal Entity with the role IPA. The Issue Paying Agent will be used for issuance trades.
Calculator Agent	Name of the calculator agent for a new issue. The agent should be previously created as a Legal Entity with the role Calculator Agent.
Trustee	Name of the trustee of the issue. The trustee should be previously created as a Legal Entity with the role Trustee. It is used in the Domiciliation process. ▶ See Domiciliation Process for details.
Commission Paid	Automatically checked when the domiciliation commission has been paid. ▶ See Domiciliation Process for details.
Benchmark Name	Click the Benchmark Name radio button, if the bond is quoted in spread over a benchmark bond or bond future that will change over the life of the bond. » Select a benchmark from the adjacent field. » The selected benchmark will only be effective as of its effective date. Benchmarks are defined using **Configuration > Fixed Income > Bond Benchmarks**. Note that the Quote Type should be set to Spread in that case.
Benchmark Sec	Click the Benchmark Sec radio button, if the bond is quoted in spread over a benchmark bond that will remain the same over the life of the bond. » Click ... to select the benchmark bond. » Click **Remove** to unselect the benchmark bond. Note that the Quote Type should be set to Spread in that case.
Future Contract	Click the Future Contract radio button, if the bond is quoted in spread over a benchmark bond future that will remain the same over the life of the bond. » Select an exchange, a currency and a future contract.

Fields	Description
	Note that the future contract will be rolled to the next one for pricing, if the pricing occurs within the number of days specified in the Benchmark panel of the Future contract before the last trading day.
Yield Curve	Click the Yield Curve radio button, if the bond is quoted in spread using a yield curve. Yield curves are defined using **Market Data > Interest Rate Curves > Par Yield Curve** from the Calypso Navigator.

5.4 Specifying Special Characteristics

Select the Special panel to specify special characteristics.

5.4.1 Specifying Amortization Characteristics

Bullet

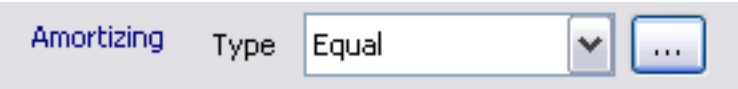
The Bullet label is displayed by default. The entire principal is repaid on the security at maturity.

Amortizing

Some of the principal will be repaid prior to the maturity date. A preset schedule defines the exact repayment dates, and the amount to be repaid on each date (for example, if "Equal" is specified for the Amortizing type, then the par amount will be repaid in equal installments, the final installment being on the security maturity date).

Although the par amount is entered as an original par amount (the concept of paydowns does not apply to this type of security), it does reflect the "current" original par amount.

Double-click the Bullet label to switch to Amortizing.



» Select the amortization type from the Type field. The following types of amortization are available:

- Annuity: The amount of each payment (interest + principal) remains constant over the life of the bond. The interest payments will be larger at the start and decrease over time, while the principal repayments will be smaller at the start and increase over time.
- Equal: The principal is amortized in equal payments for each interest period.
- Step down: The principal will decrease or increase (as desired) by a specified amount. Enter the step down amount in the Amount field.

- Mortgage: The principal is amortized using the fixed rate and period length of each interest period. You can specify the rounding convention for the constant payment rate in the "Mortgage Payment Rate" rounding rule on the Market panel. The last payment rate is calculated as:

  $Amortization_n = Notional_{n-1}$

  $Payment_n = Amorization_n + Interest_n$
- Schedule: The principal is amortized according to a user-defined schedule. Click ... to define the schedule. In the Principal Schedule window you can select from the drop down whether you want to enter amounts in terms of Quantity, Notional, or Notional Percent, which is the percent remaining of the notional value.
- Custom: The principal is amortized according to the coupon schedule by user-defined amounts specified in the CashFlows panel.

Amortizing Example

Take a Security issued on 10/15/94 and maturing on 10/15/24.

The Security is set up as "Amortizing", with Amortizing Type "Equal", and payment frequency SA (semi-annual).

Total amount issued is 600,000,000.

Principal-related cashflows will be:

10/15/94 (600,000,000)

4/15/95 10,000,000

10/15/95 10,000,000

4/15/96 10,000,000

etc., until the maturity date.

If a Buy trade is entered for 40,000,000 settling on 11/20/94:

- The par amount will be quoted as 40,000,000
- The trade will be entered with a par amount of 40,000,000
- The trade principal cashflows will be:

  11/20/94 (40,000,000 * price)

  4/15/95 666,666.67

  10/15/95 666,666.67

  4/15/96 666,666.67

  etc., until the maturity date (note that there are 60 repayments between the trade settlement date and the security maturity date).

If a Buy trade is entered for 40,000,000 settling on 11/20/04:

- The par amount will be quoted as 40,000,000
- The trade will be entered with a par amount of 40,000,000

- The trade principal cashflows will be:

  11/20/04 (40,000,000 * price)

  4/15/05 1,000,000.00

  10/15/05 1,000,000.00

  4/15/06 1,000,000.00

  etc., until the maturity date (note that there are 40 repayments between the trade settlement date and the security maturity date).

Sinking

As with the "Amortizing" Bond, some of the principal will be repaid prior to the maturity date. A preset schedule defines the exact repayment dates and the amount to be repaid on each date (for example, if "Equal" is specified for the Sinking type, then the par amount will be repaid in equal installments, the final installment being on the security maturity date).

The Sinking Bond behaves almost identically to a BondAssetBacked security, in that there is an original par and a current par, and the current par is "paid down". The difference is that the current par is paid down on a BondAssetBacked as a result of a factor being entered, whereas the current par is paid down on a Sinking Bond as a result of a scheduled paydown taking place. Within Calypso, the scheduled paydown is tracked internally at the security level by the automatic creation of an internal factor.

As with a BondAssetBacked, the original par amount is quoted for trades in a Sinking Bond (the current par is determined by using the internal factor).

The price for a Sinking Bond relates to the current par (i.e. the calculation of the principal amount is original par * factor * price).

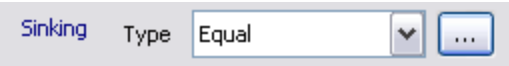
Unlike BondAssetBacked securities, there is no delay between the paydown effective date and the setting of the paydown amount (caused by the delay in publication of the factor) – This is ALL scheduled in advance for a Sinking Bond.

With a Sinking Bond, the market usually quotes the "original par", so these trades should be entered in Calypso in the same way as for MBS (i.e. enter original par).

With Calypso's bond trade window, the "Nominal" field on the top left of the screen is the par (original) nominal. For any bonds that have variable notionals (amortizing, sinking, Brady, ABS, MBS, etc.), the "Current Nominal" field shows the current nominal (that is, the current principal bought/sold on the settlement date).

It is not currently possible to enter the "Current Nominal".

Double-click the Bullet label to switch to Sinking.



» Select the sinking type from the Type field. The following types of sinking are available:

  – Annuity: The face value will decrease at the fixed rate for each interest period.

  – Equal: The face value will decrease in equal amounts for each interest period.

- Step down: The face value will decrease according to a specified amount. Enter the step down amount in the Amount field.
- Mortgage: The face value will decrease at the fixed rate for each interest period. You can specify the rounding convention for the constant payment rate in the "Mortgage Payment Rate" rounding rule on the Market panel. The last payment rate is calculated as:

  $Amortization_n = Notional_{n-1}$

  $Payment_n = Amorization_n + Interest_n$
- Schedule: The face value will decrease according to a user-defined schedule. Click ... to define the schedule. In the Principal Schedule window you can select from the drop down whether you want to enter amounts in terms of Quantity, Notional, or Notional Percent, which is the percent remaining of the notional value.
- Custom: The face value will decrease according to the coupon schedule by user-defined amounts specified in the CashFlows panel.

Sinking Example

Take a security issued on 3/15/04 and maturing on 3/15/34, with a Sinking schedule of "equal" payments. The coupon is SA (semi-annual).

We buy 10 million par at price of 100 on the issue date.

Our principal cashflows will be:

3/15/04 (10,000,000)

9/15/04 166,666.67

3/15/05 166,666.67

9/15/05 166,666.67

etc. until the last principal cashflow: 3/15/34 166,666.67

Original par and current par will be as follows:

Date	Original Par	Current Par
3/15/04 - 9/14/04	10,000,000	10,000,000.00
9/15/04 - 3/14/05	10,000,000	9,833,333.33
3/15/05 - 9/14/05	10,000,000	9,666,666.67
9/15/05 - 3/14/06	10,000,000	9,500,000.00

5.4.2 Specifying Floater Characteristics

This applies to floating bonds only to set caps and floors on the floating rate.

Simple

The Simple label is displayed by default, indicating that the floating rate is dependent on the floating index rate only.

Floater

» Double-click the Simple label to change to Floater.

Select the type of limit you want to set from the Type field. The following types are available:

- Cap: Enter a cap in the Cap field, in percentage. If you enter for example 5%, this means that if the rate on the coupon date is higher than 5%, the coupon rate will be 5% (the value of the cap). If the rate is less than 5% the rate value is used to calculate the coupon amount.
- Floor: Enter a floor in the Floor field, in percentage. If you enter for example 2%, this means that if the rate on the coupon date is less than 2%, the coupon rate will be 2%. If the rate is higher, the rate value is used to calculate the coupon. Negative floor rates are not supported and if set to a negative value, floor=0 will be applied.
- Collar: Enter a cap and floor in the Cap and Floor fields.
- Straddle: Not currently supported.
- Range: Not currently supported.

5.4.3 Specifying Reconvention Characteristics

No Reconvention

The “No Reconvention” label is displayed by default, indicating that the daycount convention will apply over the life of the bond.

Reconventioned

» Double-click the “No Reconvention” label to switch to Reconventioned so that you can specify a new daycount convention as of a given reconvention date.

Enter the reconvention date in the Date field.

Select the new daycount convention from the DayCount field.

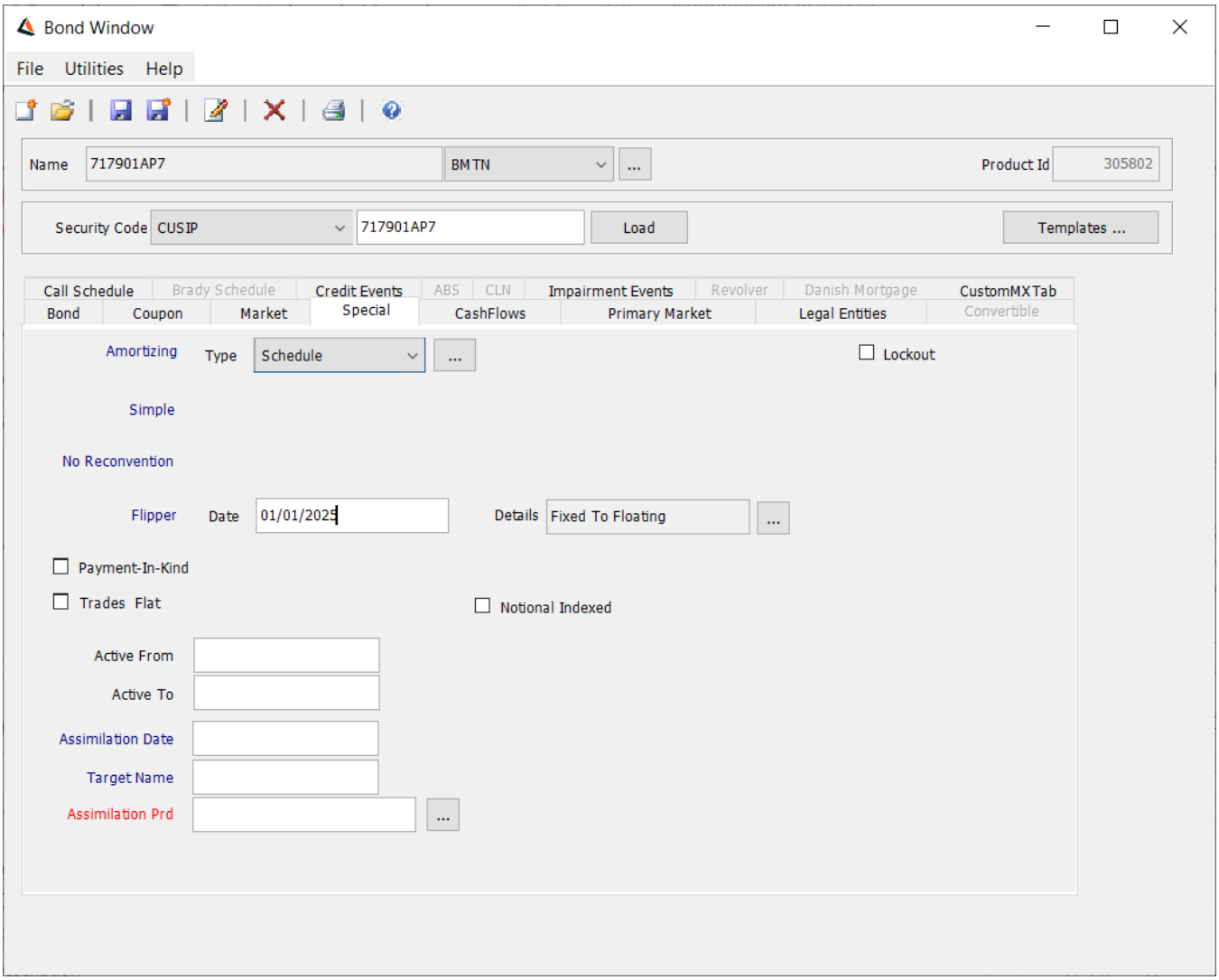
5.4.4 Specifying Flipper Characteristics

No Flipper

The “No Flipper” label is displayed by default, indicating that the coupon type will apply over the life of the bond. If the bond has a fixed coupon, it will remain fixed, or if the bond has a floating coupon it will remain floating.

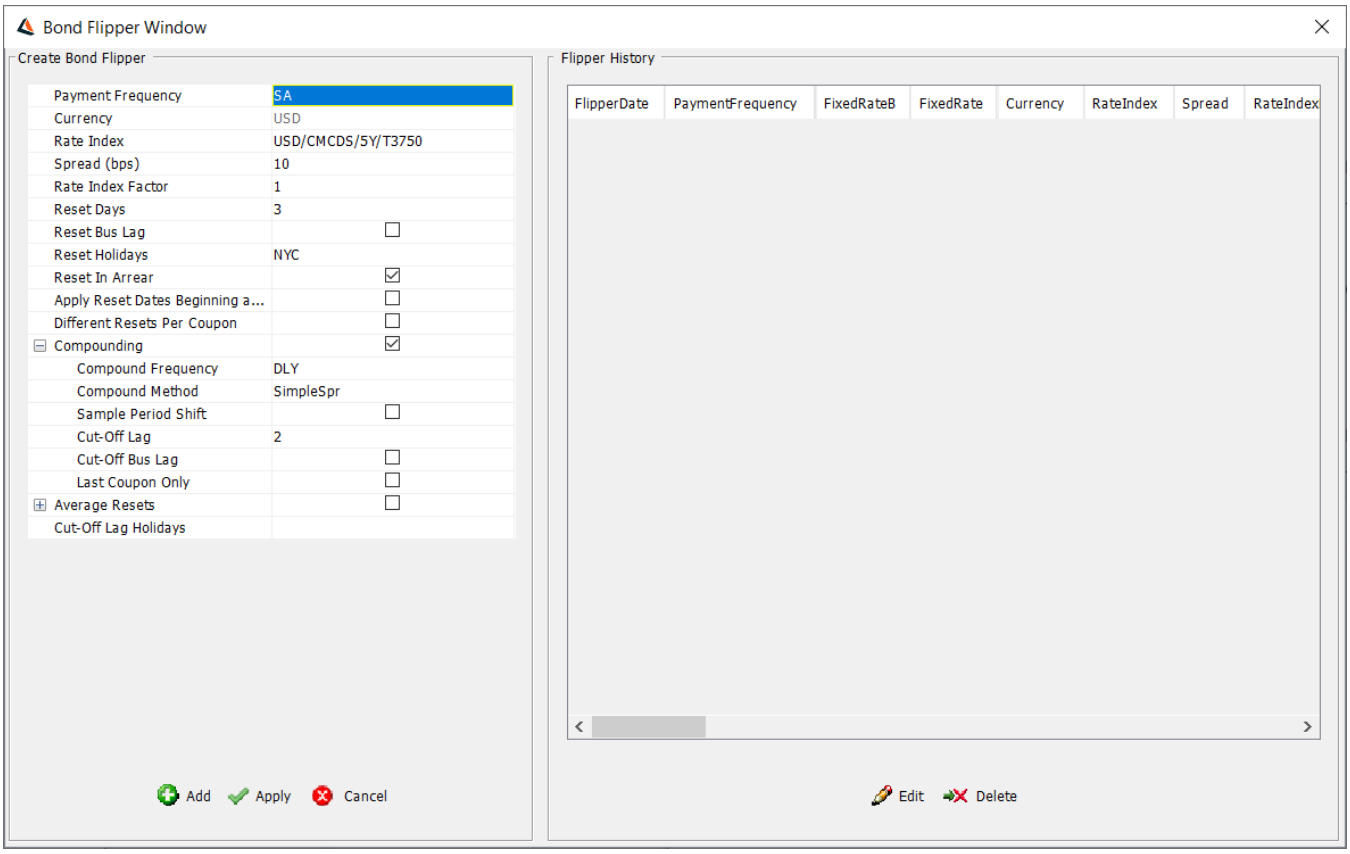
Flipper

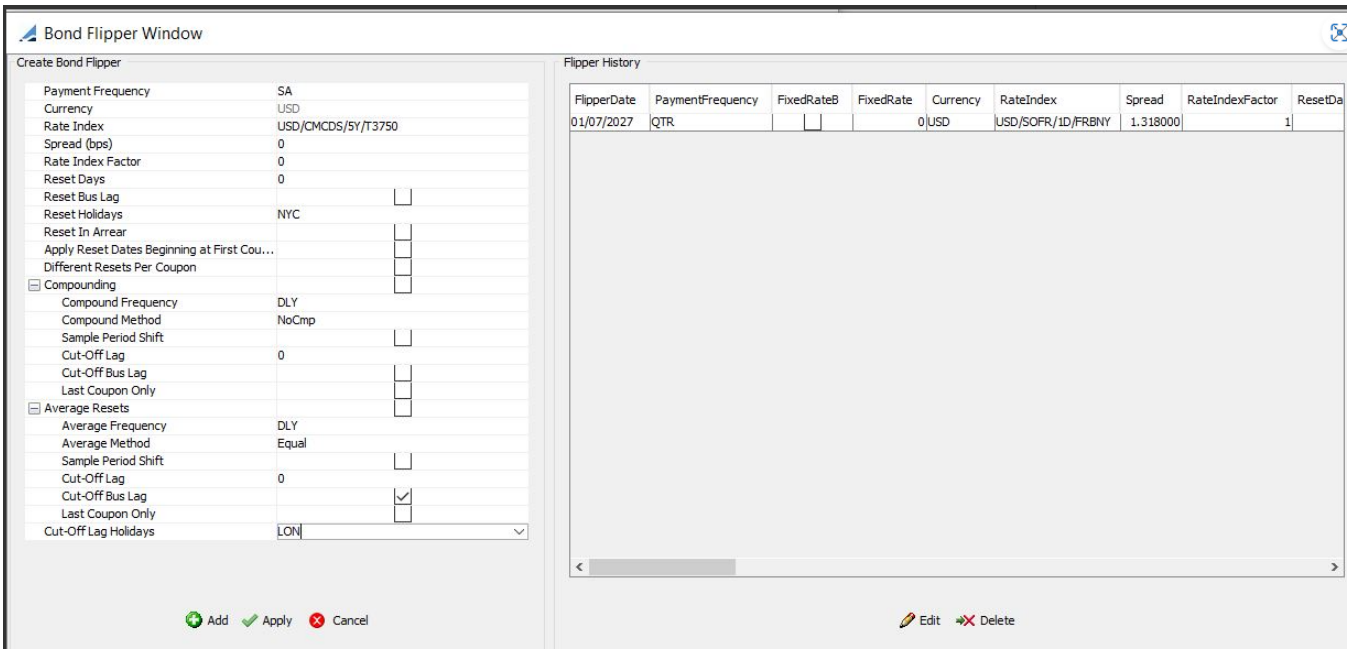
» Double-click the “No Flipper” label to switch to Flipper.



» Enter the flipper date in the Date field.

- Click ... next to the Details field to specify the new coupon. The coupon will flip to this coupon as of the flipper date.
- Enter the details related to Reset, Compounding and Average Resets while creating a Bond Flipper at the left side of the window.
- Click on the **Add** button The details will now be displayed in the 'Flipper History' section at the right side of the window.





» Click on the **Apply** button - the flipper window will close.

» Save the bond.

» Reopen to verify that the details have been added.

- Floating to fixed: Specify the fixed rate and click **Apply**. You can select a different coupon frequency as applicable, or select NO CHANGE if the coupon frequency does not change.
- Fixed to floating or variable to floating: Specify the floating rate and click **Apply**. You can select a different coupon frequency as applicable, or select NO CHANGE if the coupon frequency does not change. You can also modify the fields described below as applicable.
- Support has been provided for Flipper bond to RFR rate index for Fixed to Floating and Floating to Floating. You can change the leg type using the Flipper reconvention. A sample flipper reconvention is shown above.
- If the original trade's leg type is Fixed, the Flipper reconvention flips the leg type to Float. You can then specify the parameters for a Float leg.
- The new Flipper related properties are added to Report Framework:
  - For Flipper Type [Fixed to Floating | Floating to Floating | Floating to Fixed]
  - Flipper Rate Index: if "...to Floating"
  - Flipper Rate Index Tenor: if "...to Floating"
  - Flipper Rate Index Spread: if "...to Floating"
  - Flipper Coupon: if "...to Fixed"
- Currently only the flipper date is available for selection in criteria.
- Users are request to add only 1 line in the Flipper window.

- The system can handle max of 2 lines of flipper details. This is allowed only when the old flipper data is a Non-RFR index and the security has later on changed the flipper details to have an RFR index.

Note - On Config Workbench, if you export a Flipper Bond prior to upgrading to 17 June MR, you will not be able to import it after upgrade. You first need to upgrade to 17 June MR and export / import Flippers Bonds after upgrade.

Fields	Description
Spread	Enter a spread value in basis points over the floating rate.
Rate Index	Select the rate index, tenor and source that identify the floating rate. Rate indices are specified using **Configuration > Interest Rates > Rate Index Definitions**.
Rate Index Factor	Enter a factor to apply to the floating rate as applicable.
Apply Reset Dates Beginning At First Coupon	When checked, the reset dates will be produced starting from the first coupon from the flipper date onward. Otherwise resets are produced started at the maturity date.
Reset Days	Defaults to the reset lag specified in the Rate Index definition. Modify as applicable. This is the number of days lag for the floating rate's fixing.
Reset Bus Lag	Check the "Reset Bus Lag" checkbox to specify the reset lag as business days, or as calendar days otherwise.
Reset In Arrear	Check the "Reset In Arrear" checkbox to indicate that the floating rate is known at the end of the interest period, or clear this box otherwise.
Reset Holidays	Click ... to select reset holiday calendars.
Compounding	This includes Compound Frequency, Compound Method, Sample Period Shift, Cut-Off Lag, Cut-Off Bus Lag, Cut-Off Lag Holidays, Last Coupon Only.
Average Resets	This includes Averaging Frequency, Averaging Method, Sample Period Shift, Cut-Off Lag, Cut-Off Bus Lag, Last Coupon Only.
Cut-Off Lag Holidays	Drop-down widget for Holidays.

5.4.5 Specifying Additional Characteristics

» Enter the fields described below as applicable.

Fields	Description
Payment-In-Kind	Check the "Payment-In-Kind" checkbox for specifying payment-in-kind bonds. ▶ See Specifying Payment-In-Kind Bonds for details.
Trades Flat	Check the "Trade Flat" checkbox for handling distressed bonds. You will be prompted to enter a distress date in the As Of field.

Fields	Description
	The bond does not receive any coupon as of the distress date.
Notional Indexed	Check the “Notional Indexed” checkbox to specify an inflation bond. ▶ See Specifying Inflation Bonds for details.
Active From / Active To	Range of dates when the product can be used in the system.
Assimilation Date	Input the date of the assimilation as applicable (bonds merger, for example process of French Government Bonds, with new issues’ slices). A corporate action can be generated on the assimilation date using the selected assimilation product. See the Assimilation Prd field below.
Target Name	Double-click the Target Name label to select the ISIN code of the assimilation product.
Assimilation Prd	Click ... to select the actual assimilation product. **[NOTE: In the case of issuance assimilation, the assimilation product is set by the scheduled task ISSUANCE_CONSOLIDATION - See Capturing Bond Trades for details]**
Link to Basket	Only applies to Bond, BondFRN and BondAssetBacked. When checked, the bond is eligible to belong to a basket. You can select the basket from the adjacent field. Note that this is for information purposes only.  You can click **Show Basket** to view the basket, and **New Basket** to create a new basket. Help is available from that window.
Lockout	Check the "Lockout" checkbox to specify lockout details for a UST FRN. ▶ See Specifying US Treasury Floating Rate Notes for details.

5.5 Generating the Cashflows

Select the CashFlows panel to generate the cashflows.

5.5.1 Manipulating Cashflows

Generating Cashflows

» Select a valuation date from the Val Date field and select a pricing environment from the Pricing Env field.

Then click **Generate**. The cashflows are displayed.

Note that if you have customized the cashflows, you should not click **Generate** if you have not locked the columns that contain modified values, because those columns will be overridden. You should instead right-click any cell and choose 'Recalc' from the popup menu.

See also the “Customize Flows” checkbox below.

» Select the type of cashflows you want to display from the Display field: all cashflows, interest cashflows only, or principal cashflows only.

» Check the “Forecast Unknown Flows” checkbox to forecast floating flows.

For AusCPI bonds, it is possible to display the “p-Factor” and “K-Factor” columns provided “Forecast Unknown Flows” is checked.

Editing Cashflows

» Check the “Customize Flows” checkbox to modify the cashflows as applicable. A star will appear next to the label of the CashFlows panel.

– To modify a value, double-click a cell and modify its value as applicable.

A column that contains modified values will show a star to the right of the column heading.

Note that if you don’t want modified values to be overridden when the cashflows are generated, you need to lock the corresponding columns. Right-click a modified value and choose “Lock Column” or “Lock All Modified Columns” from the popup menu.

A locked column will show a star to the left of the column heading.

– The Manual Amt column is automatically checked when the Pmt Amt is manually modified. It indicates that changing parameters that would normally be used in the calculation (fixed rate, interest start and end dates) will have no affect since the payment amount has been manually set.

– Note that when you customize any column of the bond flows, even if the Daycount column has not been customized, the accrual will be computed using the coupon daycount. If the bond flows are not customized, then the coupon amount will be computed via the coupon daycount and the accrual will be computed via the accrual daycount.

5.5.2 CashFlow Menu

» Right-click any cell in the cashflows to display the Cash Flow Menu.

– The menu items of the Cash Flow menu are described below.

Menu Items	Description
Copy Ctl-C Paste Ctl-V	Allows copying and pasting into values. Select a cell, type Ctrl+C, then select another cell and type Ctrl+V. The content of the first cell will be pasted into the second cell.
Add	Right-click a row and choose Add. The selected row will be split between two rows. The first

Menu Items	Description
	one will be one day long, and the second one will fill the remaining term of the original period. You can edit the periods as applicable.
Remove	Right-click a row and choose Remove. The selected row will be removed.
Scheduler	Only applies to the Notional, Spread, and Rate columns. Opens the Scheduler dialog.
Sample Values	Not applicable to bonds. For averaging and compounding bonds, please use the Bond Trade window instead to verify sample rates as the Bond window uses curves as of the current date, and not as of the valuation date.
Check Resets	Checks the reset rates.
Configure Columns	Allows selecting and organizing the displayed columns.
Rename Columns	Allows customizing the column names.
Save Configure Columns	Allows saving the column configuration.
Lock Column	Right-click a modified value and choose “Lock Column” so that the value will not be overridden when the cashflows are generated. A locked column will show a star to the left of the column heading. Note that cashflows columns which are locked but not modified will cause the corresponding fields to be outlined in blue in the trade worksheet.
Lock All Modified Columns	Allows locking all columns that contain modified values.
Unlock Column	Right-click a locked column and choose “Unlock Column” to unlock it.
Unlock All Columns	Allows unlocking all locked columns.
Show Paydown Periods	Applies to Asset Backed bonds with variable pool factors changes occurring more frequently than coupon payments. Right-click a row and choose “Show Paydown Periods” to show any paydown. This also applies to bonds with long stub periods, when the bond daycount and the accrual daycount are different.
Interest History	Applies to floating compounding bonds. Right-click a row and choose “Interest History”. The Interest History window will be displayed. The columns are the following: • Start Date – Starting date of the reset period. If it is the first reset period of the cashflow, this date is the same as the Pmt Begin date. • End Date – Ending date of the reset period.

Menu Items	Description
	• Days – Number of days included in the reset period. • Period – Ratio of number of days in the reset period by the daycount. • Rate – Rate used for interest calculation, populated into the quote. • Accrual – Total amount of accrual for that period. • Total – Sum of the accruals. Equal to the Accrual for the first period and then cumulated for the next periods. • Reset Date – Date at which the rate is selected. Date initialized according to the setup of the floating rate definition in the Coupon panel. • Base Interest – Accrued interest amount. • Compound Interest – Compounded interest on that period.
Show External Flows	External cashflows are defaulted to Calypso-generated cashflows unless they have been imported from Bloomberg. You can paste cashflows copied from an Excel spreadsheet into the external cashflows. External cashflows are only saved once they have been modified. Right-click any cashflow to invoke a popup menu for additional capabilities.
Recalc	When cashflows have been customized, choose Recalc to display the cashflows without overriding unlocked columns.
Generate	To generate the cashflows. Note that if you have customized the cashflows, you should not choose Generate if you have not locked the columns that contain modified values, because those columns will be overridden. You should instead choose Recalc.
Export to Excel	Allows exporting the cashflows to an Excel spreadsheet.
Export to HTML	Allows exporting the cashflows to an HTML page.

5.6 Specifying Primary Market Information

Select the Primary Market panel to specify issuance information. Issuance trades can be entered using **Trade > Fixed Income > Issuance**.

» Select a role from the Role field. It should be Lead_Manager or Syndicate_Member.

» Click **...** next to the Legal Entity field to select a legal entity for that role.

» Enter a percentage in the % field. This is the percentage of the issue that the selected legal entity should purchase.

» Then click **Add**. Repeat as needed for other members of the issuance.

5.7 Specifying Product Codes by Legal Entity

Select the Legal Entities panel to specify product codes by legal entity.

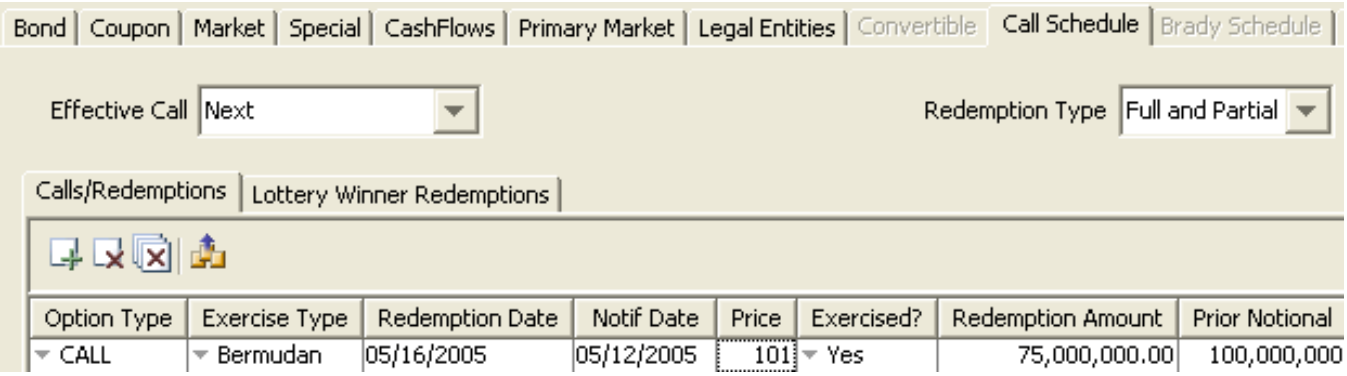
You can use this panel to specify for example domiciliation codes, or specific product codes by market place.

» Click **Insert** to insert a row.

» Then select a role, a legal entity, a product code, and enter a product code value. Repeat as needed.

5.8 Specifying a Call Schedule

Select the Call Schedule – Calls/Redemptions panel to specify a call schedule for callable bonds and perpetual bonds. The schedule is used by the Corporate Action process to perform early redemptions as applicable.



» Select the effective call method as applicable.

All pricer measures are computed based on the effective call.

The system computes the effective call by first looking at the pricing parameter EFFECTIVE_CALL_METHOD to see what the effective method should be (Worst, Best, Next, Maturity, or Custom). If it is not specified in the pricing parameter, it uses the effective call method defined here.

- Worst: The call that would occur on the worst option, where worst is defined as the yield to that date. When the val date is past the last call date, the yield is equal to yield-to-maturity.
- Best: The call that would occur on the best option, where best is defined as the yield to that date. When the val date is past the last call date, the yield is equal to yield-to-maturity.
- Next: The call that would occur after the current val date. When the val date is past the last call date, the yield is equal to yield-to-maturity.
- Maturity: The bond is not callable.
- Custom: The call that would occur if you called on the entered call date, but using the redemption price from the call that occurs after that date. If the val date is past the custom date, then the yield behaves as yield-to-worst.

  Note that you must have Effective Call = Custom and a call date set here in order for the Yield To Custom quote type, the YIELD_TO_CUSTOM pricer measure, and the bond trade "Custom" Yield price to work.

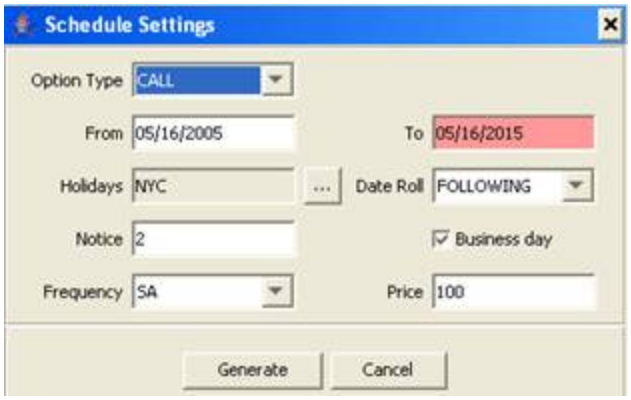
» Select the redemption type as applicable: “Full and Partial” or “Full”.

When you select “Full and Partial”, you can perform partial redemptions. In the redemption row, you can define the amount of redemption, and the outstanding notional amount will be recomputed accordingly. In order for the corporate action process to generate the corresponding corporate action, you need to set the “Exercised?” column to Yes.

Price	Exercised?	Redemption Amount	Prior Notional	Outstanding Notional	Interest Clean Up
101	Yes	75,000,000.00	100,000,000	25,000,000	☐

You can also check “Interest Clean Up” to perform interest cleanup on the redemption date.

» To generate the call schedule, click . It brings up the Schedule Settings dialog.



Enter the fields as needed and click **Generate**. The fields of the call schedule are described below.

The Notice days allow determining the notification date. Check “Business day” if the notice days are business days.

» You can also click to add a redemption row. Enter the fields described below as applicable.

» You can right-click a row to bring up the Redemption menu. It allows configuring the columns and saving the column configuration.

Fields	Description
Option Type	Choose between CALL and PUT.
Exercise Type	Select European, American, or Bermudan. For European Callable bonds, you need to set the quote type to AOAS, and the effective call method to Maturity to price using AOAS curves. ▶ Refer to Calypso Zero Curve documentation for complete details on Agency Option Adjusted Spread (AOAS) pricing for bonds.
Redemption Date	Enter the redemption date for European callable bonds.
First Exercise Date	Enter the first exercise date for American and Bermudan callable bonds.
Notif date	Enter the redemption notification date.

Fields	Description
Price	Enter the redemption price.
Exercised?	Choose Yes to allow the generation of corporate actions for partial redemptions. For callable flipper bonds, when flipper date > stub end date and Exercise flag of Bond Call Schedule is checked, the cashflows ignore the flipper date and the stub end date is set to the exercise date. When flipper date > stub end date and Exercise flag is not checked, an error is generated. The Exercise flag must be set manually.
Redemption Amount Prior Notional Outstanding Notional	Only applies to redemption type "Full and Partial". Enter the amount of notional that is redeemed. It will re-compute the outstanding notional accordingly. Note that to perform a partial redemption, you need to set the "Exercised?" column to Yes.
Interest Clean Up	Check to perform interest cleanup on the redemption date.

5.9 Loading Credit Events

Select the Credit Events panel to load credit events that apply to the selected product.

Credit events are created using **Trade Lifecycle > Corporate Action > Credit Events**.

» Click **Load** to load credit events that apply to the selected bond.

5.10 Loading Impairment Events

Select the Impairment Events panel to load impairment events that apply to the selected product.

Impairment events are created using **Trade Lifecycle > Corporate Action > Corporate Action** in the context of asset impairment for the JGAAP and USGAAP accounting requirements.

A full example is given in the *Calypso Positions Management User Guide*.

» Click **Load** to load impairment events that apply to the selected bond.

5.11 Defining a Bond Ticket Template

You can create a bond ticket template under `$CALYPSO_HOME/custom/resources/<custom package>/templates/BondDealTicket.html`. If this template is not found, the system will use the default template provided by Calypso.

Refer to the *Calypso Developer's Guide* for information on creating custom code and custom packages.

5.11.1 Ticket Generation Rules

`BondDealTicket.html` contains rules to fetch the actual HTML templates that you want to use based on any bond criteria.

You can copy `resources/calypsox/BondDealTicket.html` to `$CALYPSO_HOME/custom/resources/<custom package>/templates` and edit it as applicable.

For example,

```
<!--calypso>
if ( |BOND_SUBTYPE| == "UST" )
   include "BondDealTicket_Tmpl1.html";
else if ( |BOND_SUBTYPE|== "When-Issued" )
      include "BondDealTicket_Tmpl2.html";
   else
      include "BondDealTicket_Tmpl1.html";
</calypso-->
```

Then `BondDealTicket_Tmpl1.html` and `BondDealTicket_Tmpl2.html` for example contain the actual ticket templates.

So, only `BondDealTicket.html` is a mandatory file name, then any file name can be used to define the ticket templates. Also `BondDealTicket.html` is NOT the actual HTML template but just a placeholder to define what ticket templates will be used.

Note that `BondDealTicket.html` and the ticket templates must be located in the same directory, i.e. `$CALYPSO_HOME/custom/resources/<custom package>/templates`.

5.11.2 HTML Ticket Templates

The actual ticket templates are created as standard Calypso message templates using bond-related keywords.

You have two samples under `resources/calypsox/BondDealTicket_Tmpl1.html` and `resources/calypsox/BondDealTicket_Tmpl1.html`.

For information on creating HTML templates, see **Help > Message Template Keywords**. The keywords specific to bond tickets are described in the Bond section.

5.12 Specifying Argentine Bonds

Argentine floating rate bonds include the following:

- BonacS4
- LedesmaC3
- TarshopC17

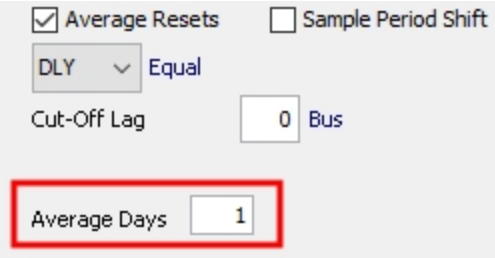
5.12.1 Yield Method

The yield method "ARS" has specific calculations for Argentine bonds.

▶ Refer to the *Calypso Bond Analytics Guide* for details.

5.12.2 Average Days

The "Average Resets" field "Average Days" is only displayed for Argentine flipper bonds with the "ARS" yield method.



For these bonds, the averaging ignores unknown rates and averages only the known rates.

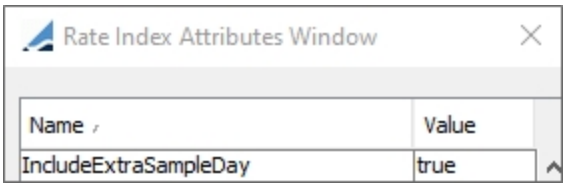
When Average Days = 1, RateCurrent = rate on Val Date or last known rate before

When Average Days = N where N is an integer > 1, RateCurrent = average of N business days, with the last day of the range being Val Date - 2 business days

▶ See Average Resets for details on using this field.

5.12.3 Sample Days

For Argentine bonds, it is a special case that the samples should go to Coupon End Date. This behavior is controlled by the index attribute IncludeExtraSampleDay.



5.12.4 Multiple Quote Sources

In Argentina, a bond can be traded in multiple markets, generating different quotes for the same bond.

▶ See Multi Quote Mapping for details.

5.13 Specifying Asset Backed Bonds

Asset Backed Securities are securities which "pay down" based on a factor.

You can select the ABS (Asset Backed Securities) panel, provided the bond class is BondAssetBacked.

ABS bonds can be imported from Intex – Refer to the *Calypso Intex Integration User Guide* for details.

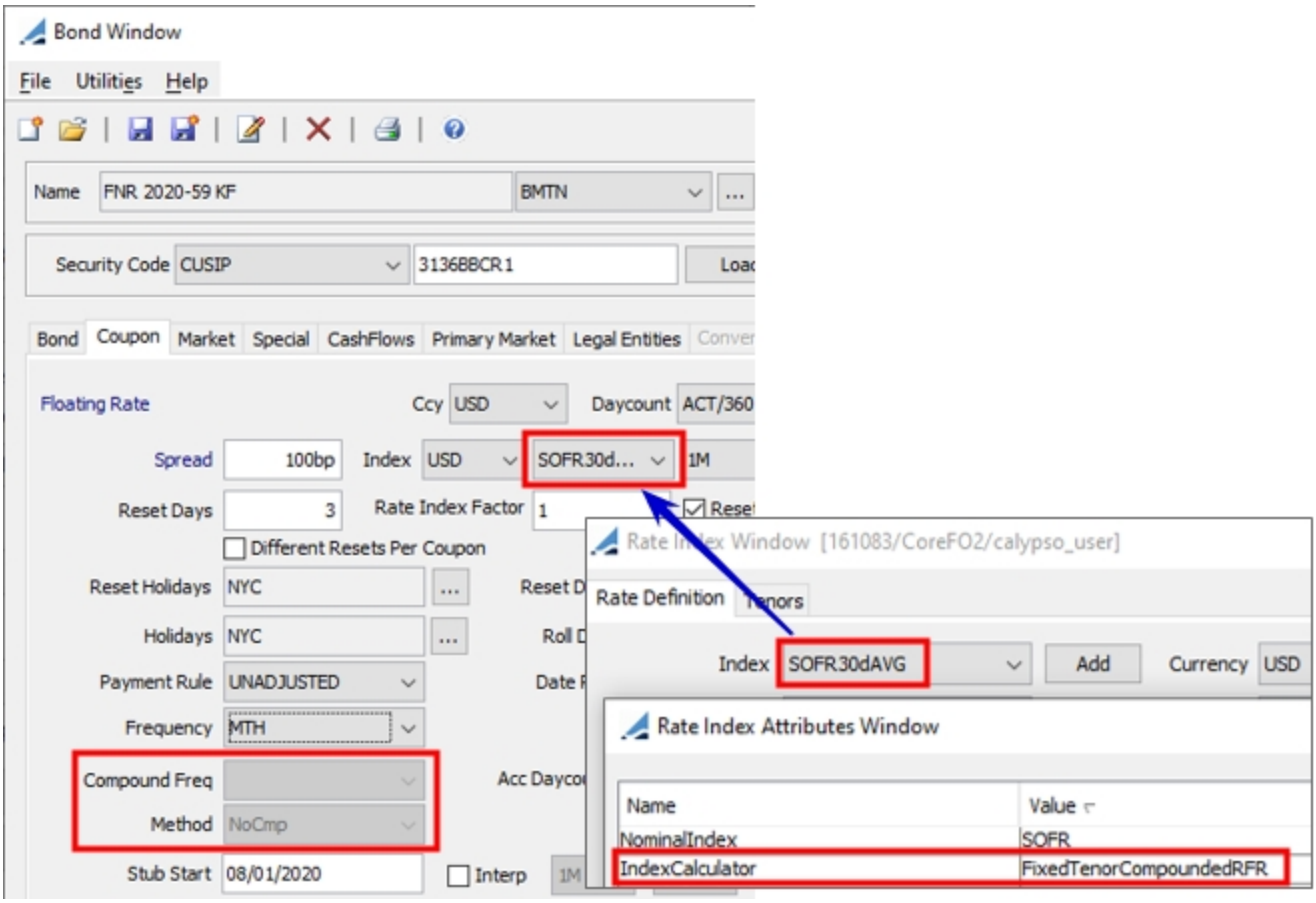
- Select the bond type as applicable. The following bond types are available:
  - ABS: ARM bonds are supported through the Structured Finance module – Refer to the *Calypso Structured Finance User Guide* for details on ARM bonds.
  - AUDMBS: For AUD MBS bonds. It allows saving "<quote name>.TM" quotes required by PricerBondAssetBackedAUD.
  - IO (Interest Only): An interest only security is essentially a stream of cashflows that represent interest on outstanding principal. Note that factors need to be captured for these securities, even though no principal paydowns apply.
  - PO (Principal Only): PO securities only receive principal repayments. Principal only securities are similar to zero coupon bonds since they are priced at a discount to par, but (unlike zero coupon bonds) they are typically priced with a dollar price (clean price).
  - Pass Through: A security which “passes through” payments of interest and principal on the underlying loans to the investor shortly after receipt from borrowers.
  - Principal + Interest: A mix of IO and PO.
  - Stripped: Stripped paydown ABS securities are created by separating the interest and principal payments from the pool of assets in order to create two new securities: PO securities and IO securities. Some paydown ABS securities may also be partially stripped so that each investor class receives some interest and some principal.
- In the Special panel, you can only choose the Bullet amortization type for an ABS bond. The logic of scheduled payment is built into the pricer.
- Then select the ABS panel to define the details of the ABS. The ABS panel is described below.
- Once the ABS panel is defined, select the CashFlows panel to generate the cashflows.

5.13.1 Coupon Panel

By default, the "Compound Freq" and "Method" fields in the Coupon panel are hidden for BondAssetBacked products.

You can enable them by adding the domain *BondAssetBacked.showCompounding* with the value "true".

When using a floating rate index with the FixedTenorCompoundedRFR index calculator to support fixed tenor deals, for example US 30 Day Average SOFR, the "Compound Freq" and "Method" fields are not available.



5.13.2 ABS Panel

If the principal percentage on the ABS panel is less than 100, then the system automatically reduces the principal percentage by that amount, regardless of the type. If that rate is set to 100, the system does not reduce the principal percentage.

If the bond is set up as a zero coupon bond (frequency = ZC, rate = 0, and compounding frequency = NON), then no interest payments are made, turning the bond into a principal only bond. Note that factor schedule changes still apply and cause principal paydowns. Also note that you need to set the ABS type to VARIABLE, since there is no schedule of coupons for the fixed or variable schedule to mimic.

If the ABS is set to Interest Only and your principal percentage is not less than 100, a warning is issued. If the ABS is set to Principal Only and the bond is not set up as a zero coupon bond, a warning is issued. These warnings however, do not prevent from saving the bond.

- Enter the ABS details as applicable. The fields are described below.
- Click **Add/Edit** in the Factor Schedule section to add a factor. The Factor Entry dialog will be displayed.
  - Enter an effective date: The first date should be the issue date with a factor of 1.
  - Enter a factor: The value should be decreasing between 1 and 0. The factor may be > 1.

An empty factor is an indication that the factor is not yet known, hence it will not be factored into the cashflows.

If the factor has not changed since the security issuance, it should be set to 1 (it should not be empty) so that if there is a coupon change, the coupon change will be applied.

- Enter a coupon rate that will be used to calculate the interest of the next period.
- Enter the weighted average coupon, weighted average maturity, and weighted average loan age.
- Enter shortfall and recovery amounts if any, for interest, principal and writedown.

» If you modify past factors, you will be prompted to check the trades that could be impacted (i.e. trades settling in the blackout period). The list of impacted trades will appear in the Process Trades window so that you can re-process the trades to take into account the modified factors.

ABS Identification

Fields	Description
Series	Enter the series.
Class	Enter the class in the series.
Groups	Enter the group of collaterals supporting the ABS.
Collateral	Select a collateral type from the Collateral field. You can add collaterals to the *BondAssetBacked.collateralType* domain.

Principal Payments

Fields	Description
Schedule Type	Select the type of factor structure. The following types are available: • Fixed Schedule – The structure of the paydown is fixed in advance, and is exactly the same as the coupon schedule in terms of dates with the factors known in advance. This is essentially the same as a sinking fund security. • Variable Schedule – The schedule of the paydown is exactly the same as the coupon schedule in terms of dates, but the amount is not known until the factor is fixed at the start of each period. • Variable – The bond pays down on a user-defined basis, usually, but not necessarily, on the coupon date of the bond. Factors and coupons can change at any time. The payment dates can be defined using the Payment Lag field, because they can differ from the coupon dates. Note that for an ABS using the prepayment type PSA or CPR, the schedule type should be either Fixed Schedule or Variable Schedule.
Factor Delay Days	Enter the number of days between the factor's effective date and the factor's known date.
Business Day	Check the "Business Day" checkbox to indicate that the specified delay corresponds to

Fields	Description
	business days, or calendar days otherwise.
Principal Fraction	Enter the percentage of principal that will be received at the early redemption date as applicable.
Payment Lag	Applies to the Variable type of factor only. Enter the number of days between the application of the paydown and its payment. If the payment lag entered exceeds 30 days, the payment day will be calculated with a lag of 1 month for each 30 days, and then the remaining number of days added to the coupon period end date. Example: A payment lag of 44 for a security with coupon period end date on the 12th day of the month would pay on the 26th of the following month. Example: A payment lag of 54 for a security with coupon period end date on the 12th day of the month would pay on the date which is 24 days after the 12th day of the following month.
Business Day	Applies to the Variable type of factor only. Check the "Business Day" checkbox to indicate that the specified payment lag corresponds to business days, or calendar days otherwise.
Early Redemption Date	Enter an early redemption date only when known. Entry of a zero factor will automatically set this field to the Effective Date of the zero factor.
Date Roll	Applies to the Variable type of pool factor only. Select the date roll convention to apply if the payment date falls on a non business day.

Quotes

Fields	Description
Prepayment Type	Enter the value for the Bloomberg code MTG_PREPAY_TYP: PSA, CPR, etc.
Speed Assumption	Displays the quotes of the selected prepayment type. Click **Edit** to enter the quote.
Weighted Average Life	Displays the weighted average life of the issue as it is published by external data feed. Click **Edit** to enter the WAL. This is used for calculating premium accrual, discount accrual and amortization values. A WAL of 4.5 must be interpreted as 4.5 years, not 4 years and 5 months. Double-click the "Weighted Average Life" label to bring up the Quote window showing all of the WAL quotes for the bond between the issue date and today.

5.13.3 CashFlows Panel

You can display the pool factor at coupon date. Right-click any cell and choose "Configure Columns" from the popup menu to configure the display columns.

» Right-click an Interest cashflow and choose “Show Paydown Periods” to display the details of the paydowns of the period.

This only applies for variable pool factors changes occurring more frequently than coupon payments.

Also the following columns are specific to asset backed bonds.

Columns	Description
Scheduled Payment	Value of the Scheduled Payment (Interest + Principal) only populated for PSA bonds.
Scheduled Interest	Value of the Scheduled Interest (based on the Outstanding Principal).
Scheduled Principal	Value of the Scheduled Principal Payment (= Scheduled Payment - Scheduled Interest).
CPR	Prepay annual rate %.
Estimate Principal PrePayment	Scheduled Principal * CPR.
Estimate Total Payment	Scheduled Payment + Estimate Principal PrePayment.
Estimate Pool Factor	Pool Factor included Principal PrePayment Estimation.
Estimate Face Value	Face Value included Principal PrePayment Estimation.

[NOTE: For Asset Backed bonds, the Bond Trade window should be used for verifying rates and cashflows]

5.13.4 External Cashflows

Asset Backed Securities require forecasts to try to predict the future cashflows (principal and interest) based on prepayment models. The external cashflows feature allows importing cashflows from Bloomberg based on a variety of forecast models.

[NOTE: Special license requirements may be required for some models]

To enable external cashflows, follow the steps below.

» Add the value “true” to the *BondAssetBacked.USE_EXTERNAL_FLOWS_FOR_PRICING* domain.

» Add the values “BAM”, “CPY”, “CPJ”, “CPR” and any other desired prepayment model to the *ABS.PrepayTypes* domain.

» Add the values “BAM”, “CPY”, “CPJ”, “CPR” and any other desired prepayment model to *Bloomberg.PrepaymentType* domain.

Once this is enabled, all bond definitions imported from Bloomberg will use the cashflows (forecasted and historical) as specified from Bloomberg based on the chosen prepayment model. Trade cashflows will use the same cashflows defined in the bond definition.

▶ Please refer to the *Calypso Bloomberg Data License Integration Guide* for more details on importing ABS bonds from Bloomberg.

5.13.5 Special Discounting for 30/360 Daycount

For ABS bonds settling on the 31st day of the month and with 30/360 daycount convention, you need to set the domain *BondAssetBacked.DC30_360_SpecialDiscountingFor31* with value "true" in order to calculate the yield based on discounting to the 1st of the next month.

5.13.6 REPROCESS_AFFECTED_TRADES Scheduled Task

The REPROCESS_AFFECTED_TRADES scheduled task checks if there are any pool factor changes to the bonds within 1 business day. If there is, it reprocesses the trades related to the modified bonds (pool factors only).

You need to add REPROCESS_AFFECTED_TRADES to the *scheduledTask* domain.

You can set a static data filter to filter trades, and select the trade action to be applied. It applies the AMEND action by default.

Whatever workflow action is used should include the workflow rule CheckBondCalculations.

5.14 Specifying BondMMInterest Products

Instruments with short or mid-term maturities will be entered in the system as BondMMInterest products.

Coupon Panel

» If the coupon is paid at the beginning of the period, check the "Pre-Paid" checkbox and select the discounting method from the adjacent field. The default is NONE.

5.15 Specifying Brady Bonds

You can select the Brady Schedule panel provided the bond class is BondBrady.

» Select the Special panel to specify the amortization type.

» Select the Brady Schedule panel to specify the principal and interest guarantee schedules.

» Then select the CashFlows panel to specify the pay-in-kind rate.

5.15.1 Special Panel

Brady Bonds are amortizing or sinking bonds.

» Double-click the Bullet label to switch to Amortizing. You can double-click one more time to change to Sinking as applicable. Then, you can select the bond amortization type or sinking type.

▶ See Specifying Amortization Characteristics.

5.15.2 Brady Schedule Panel

» Click **Add** in the Principal Guarantee section. Then enter a guarantee period start date and end date, and a percentage of outstanding principal guaranteed for the given period.

» Click **Add** in the Rolling Interest Guarantee section. Then enter a guarantee period start date and end date, and a percentage of interest and a number of coupons guaranteed for the given period.

5.15.3 CashFlows Panel

You can display the pay-in-kind rate (Capitalization Rate). Right-click any cell and choose “Configure Columns” from the popup menu to configure the display columns.

» Check the “Customize Flows” checkbox, and enter the pay-in-kind rate in the Capitalization Rate field as applicable. The pay-in-kind rate is the coupon cap that accrues on the outstanding principal.

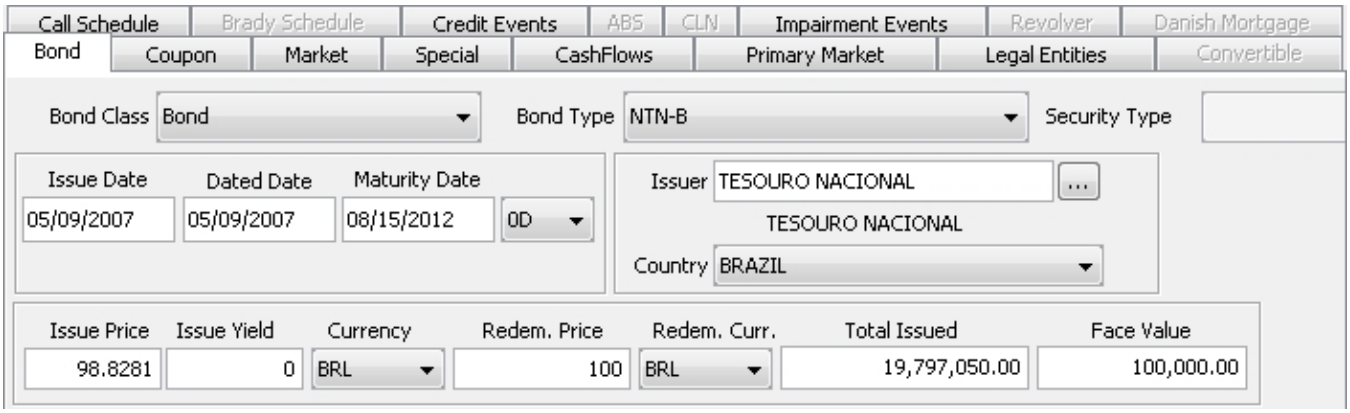
– Setting the capitalization rate will compute the capitalization factor, which will in turn compute the face value, notional amount, and amortization amount.

– The payment amount is computed as Rate - Capitalization Rate.

5.16 Specifying Brazilian Bonds

Brazilian bonds are Brazilian government bond products issued by Tesouro Nacional. These bonds have a specific pricer associated with calculation, and each has its own sub-type.

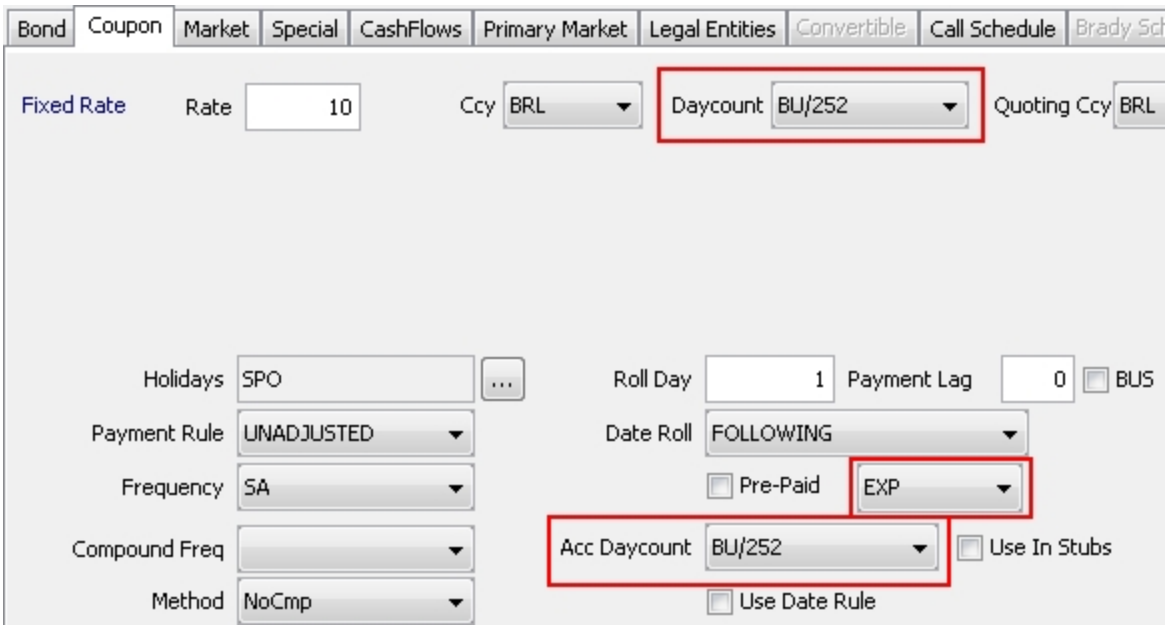
- LTN – Letra do Tesouro Nacional, zero coupon national treasury bill.
- LFT – Letra Financeiras do Tesouro, zero coupon financial treasury bill indexed to the SELIC rate.
- NTN-F – Nota do Tesouro Nacional Serie F, fixed coupon national treasury note (series F), carries a 10% coupon paid semi-annually.
- NTN-B – Nota do Tesouro Nacional Serie B, fixed coupon national treasury note (series B), indexed to the IPCA inflation index and carries a 6% coupon paid semi-annually.
- NTN-C – Nota do Tesouro Nacional Serie C, fixed coupon national treasury note (series C), indexed to the IGPM inflation index and carries a 6% coupon (except for NTN-C 2031 with a 12% coupon) paid semi-annually.



- Select 'Bond' for the Bond Class.
- Select a Brazilian product for the Bond Type as appropriate: LTN, LFT, NTN-F, NTN-B, or NTN-C.
- Enter all necessary details.
- Save and name your bond.

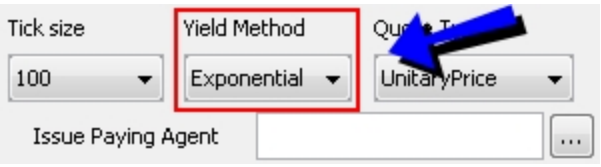
5.16.1 Daycount

Brazilian bonds typically use the daycount BU/252 with EXP. BU/252 requires that the holidays you want to exclude be set in the environment property BU252_HOLIDAYS.



5.16.2 Yield Method

Brazilian bonds typically use the yield method Exponential.



5.16.3 Quote Types

Two quote types support the pricing of Brazilian fixed income products.

- UnitaryPrice = Price + accrued interest (non-inflation bonds)
- GrossUnitaryPrice = UnitaryPrice + inflation price (inflation bonds)

5.16.4 Cashflows

For the Brazilian sub-types, cashflows are automatically calculated using the daycount convention: Daycount Fraction = Number of Months in Period / 12

5.16.5 Pricing

These bonds use the pricer PricerBondBrazilian. In addition to specific pricing logic, this pricer is also designed to use the following Pricer Configuration parameters.

Model Parameters panel:

- BOND_FROM_QUOTE – Set to false if you wish to price from curves. In this case, the discount curve will contain implicitly or explicitly both the zero curve and the market spread over the zero curve.
- COMPUTE_NOTIONAL_FACTOR – Set to true to enable the projection of notional factors for T+n trades.
- ZD_PRICING – When set to true, pricer measures will perform the ZD_PRICING discounting using the curve specified in the DI_CURVE parameter in the Product Specific panel. In addition, CA_COST will be discounted by PricerBondBrazilian.

Product Specific panel:

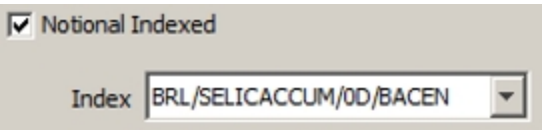
- DI_CURVE – It should be set for each of the Brazilian product types. This represents the risk-free curve, and will be used for ZD_PRICING.

Pricer Measures	Description
NOTIONAL_FACTOR01	The PV unadjusted by the Notional Factor. It represents the sensitivity to a change in the Notional Factor. It should only be used on bonds that are notional indexed.
QUOTE_TYPE_PRICE	Displays the price based on the appropriate formatting for the bond quote type. For example, if the quote type is UnitaryPrice or GrossUnitaryPrice, the QUOTE_TYPE_PRICE will be based on the face

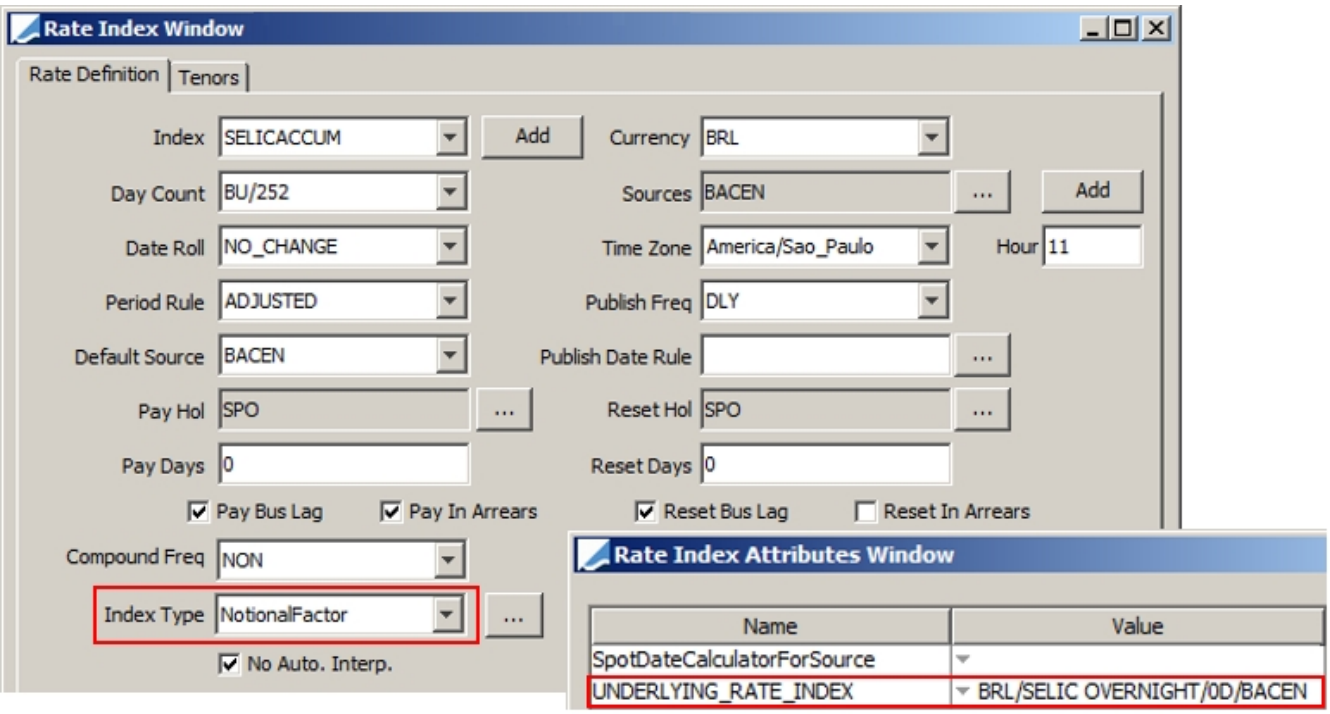
Pricer Measures	Description
	value like those quote types.

5.16.6 LFT

For an LFT bond, you can only select a Notional Factor index.



This index type uses the attribute UNDERLYING_RATE_INDEX in scenarios where the Notional Factor quote is unavailable and one needs to be projected.



In order to properly use the Notional Factor index for LFT, you need to set the Model Parameter COMPUTE_NOTIONAL_FACTOR to true.

Reprocessing LFTs on Settle Day

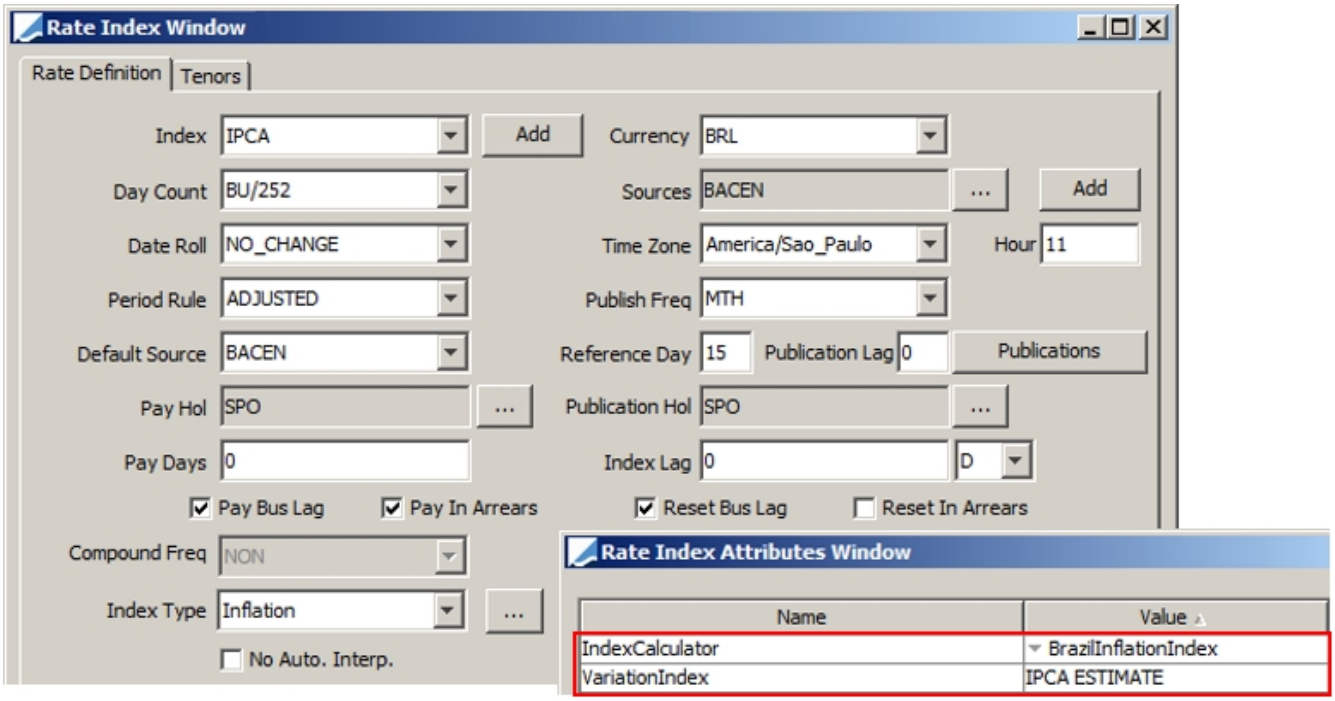
When an LFT trade is settled in the future, it is based on a projected Notional Factor. It is market practice for the price and settlement of the LFT trade to be updated on the settle day, when the Notional Factor is known.

The scheduled task REPROCESS_SETTLING_TRADES can be used to recompute the Notional Factor, price, and settlement for LFT bonds. The trade filter can be configured to specify which trades should be reprocessed, for example only the LFT bond sub-type and trades settling on the Val Date.

5.16.7 NTN-B and NTN-C

NTN-B bonds are indexed to the IPCA inflation index. NTN-C bonds are indexed to the IGPM inflation index. They use the following attributes:

- IndexCalculator – Set to BrazilInflationIndex.
- VariationIndex – Select an index for daily projection rates.



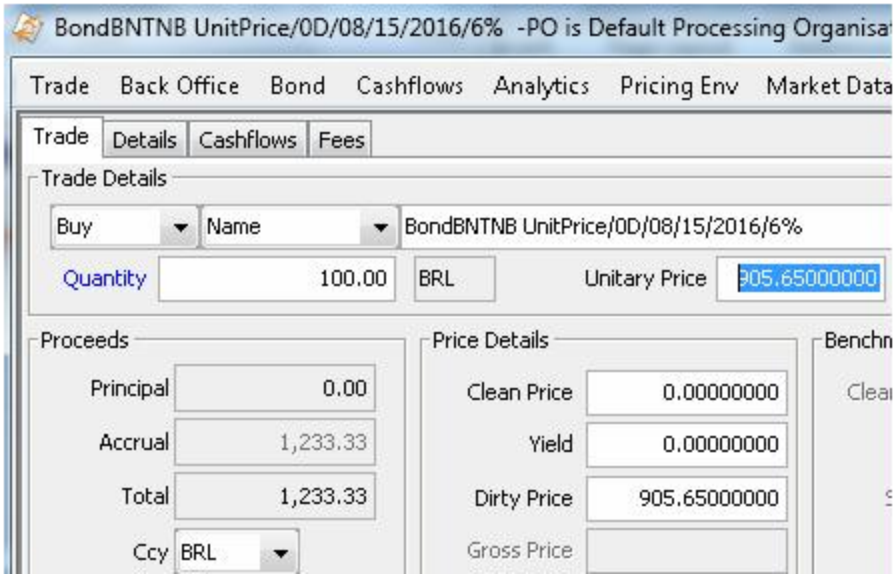
The index is typically published monthly, which is compounded by the variation index to get a value for each day.

Rate = Index Quote * (1 + Variation Index Quote / 100) ^ (Days from Last Reset to Valuation Day / Days from Last Reset to Next Reset)

5.16.8 Sample Trade

In the Bond Trade window, for the quote types UnitaryPrice and GrossUnitaryPrice, the quantity appears by default in place of the nominal. You can however double-click the Quantity label to switch to Nominal.

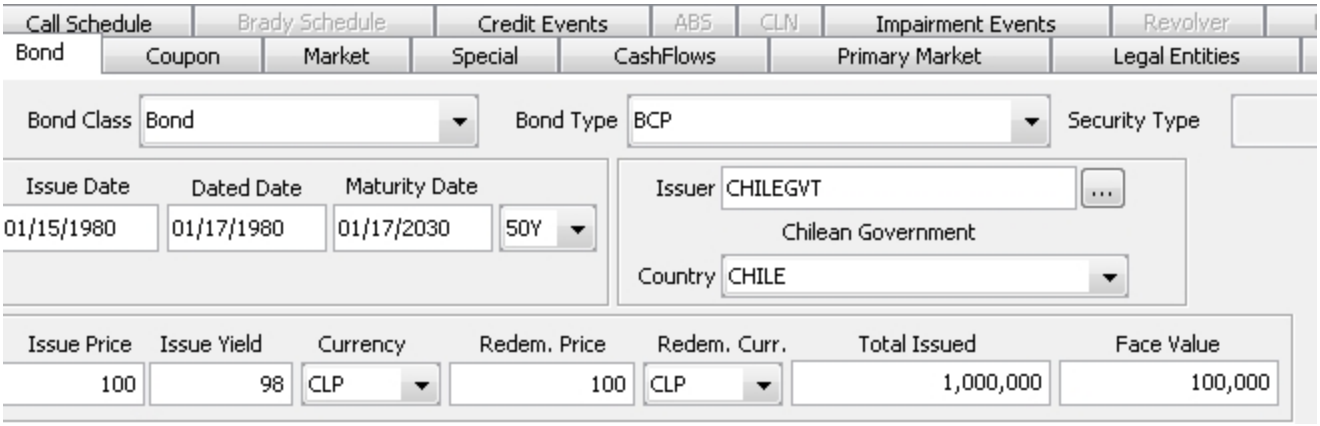
If the bond definition is associated with a legal entity of role MarketPlace in the Legal Entities panel, the MarketPlace field in the Details panel of the Bond Trade window will be automatically populated.



5.17 Specifying Chilean Bonds

Chilean bonds are products issued by Chilean entities or government. These bonds have a specific yield method and pricer associated with calculation. Bonds are denominated in pesos (CLP), though some bonds are denominated in UF.

UF is a non-deliverable currency with a daily spot rate that is known up to the 9th of the following month. For front and middle office purposes, it is treated as a currency, but as an index in the back office. You cannot select this currency type when creating a bond.



- Select 'Bond' for the Bond Class.
- Select a Chilean product for the Bond Type as appropriate: PDBC, BCP, BCU, BTP, or BTU. They are described below.
- Select Chile as the issuer and the country.
- Select CLP as the currency.

» Specify the Issue Yield (see below).

» Save.

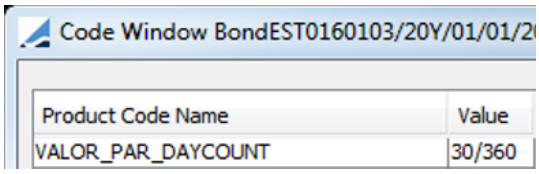
Note that on the Coupon panel, CAMARA is set as the default index when specifying a floating rate.

5.17.1 Chilean Types and Pricer Measures

The following bond types and pricer measures are specified for the 'PricerBondChilean' valuation routine. Specify them in the Results panel of the Market Data window. Calypso supports the following types of Chilean bonds:

- PDBC (Pagares Descontables del Banco Central) – Peso denominated, short term discount issue.
- BCP – Peso denominated bullet bond, semi-annual coupon.
- BCU – UF denominated bullet bond, semi-annual coupon.
- BTP – Peso denominated Treasury bond.
- BTU – UF denominated Treasury bond.
- Bonos de Reconocimiento – Bonos de Reconocimiento does not have a designated Bond Type.

  ▶ See Bonos de Reconocimiento for details on these bonds.

Pricer Measures	Description
VALOR_PAR	$K(1+y_t)^{ACT/365}$ • K is the outstanding notional on the pay date prior to valuation date • y_t is the TERA (Yield Issue) as a decimal value • ACT is the number of days between the previous pay date and the valuation date You can use a different daycount by specifying it in the security code VALOR_PAR_DAYCOUNT. Otherwise ACT/365 is used.  ***Bonos de Reconocimiento*** Bonos de Reconocimiento use a different formula for VALOR_PAR. ▶ See Bonos de Reconocimiento for details.
PRECIO	$100P_d$ / ValorPar • P_d is the dirty price of the bond
VALOR_	Actual Price for Chilean bonds.

Pricer Measures	Description
ACTUAL	100 * (ValorPar / Precio)
VALOR	Value of the trade (NPV) for Chilean bonds. (Trade Nominal * ValorActual) / 100
VALOR_ MERCADO	Market value of a Chilean bond, displayed in CLP. If the bond is denominated in CLP, then identical calculation as VALOR. If the bond is issued in CLF or UF, then calculated as: Round(VALOR) * FX Rate The rounding precision can be set in the “Pre FX Settlement Amount” rounding rule in the bond definition Market panel.  Note that this rounding is not applied to the VALOR pricer measure itself.

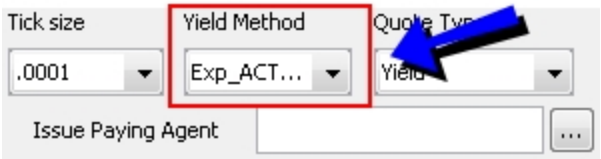
5.17.2 TERA

Chilean bonds have a special Issue Yield, TERA. This value is entered in the bond product definition.

» Enter the Issue Yield for the bond.

Example issue yield:

Chilean daycount conventions can be added on the Market panel in the Yield Method drop down. Chilean bonds should use Exp_ACT360 or Exp_ACT365 as a yield method. These yield methods use the ACT/360 or ACT/365 daycount conventions irrespective of the bond’s daycount. Amortizing bonds will have the 1 day payment lag suppressed when computing the yield.



5.17.3 Bonos de Reconocimiento

Bonos de Reconocimiento (Recognition Bonus) is a representative document of a worker's contributions into Chile's old pension system.

Setup

Use the following setup for Bonos de Reconocimiento:

- Yield Method = Exp_ACT365
- Sec code COMPLETE_YEAR_MONTH_DAYCOUNT= true
- Check "Notional Indexed" and specify the IPC index

  ▶ See Specifying Inflation Bonds for details.
- Pricer = PricerBondChilean

VALOR_PAR

Bonos de Reconocimiento use a different formula for VALOR_PAR.

Where

- IPC_1 is the last Consumer Price Index known
- IPC_2 is the Consumer Price Index for the previous month of the issuing date of the Bonos de Reconocimiento
- *R* is the coupon rate, which you should set to 4%
- *AC* is the number of complete years (round down) from issuing date to valuation date, always an integer
- *M* is the number of complete months (round down) that remain in the fraction of the year after calculating the variable *AC*, always an integer

Payment

Bonos de Reconocimiento have a single payment at maturity. The payment calculation compounds annually for full years and a monthly portion for the remainder. In Calypso, this can be broken up into a coupon and principal component.

Where

- IPC_1 is the last Consumer Price Index known
- IPC_2 is the Consumer Price Index for the previous month of the issuing date of the Bonos de Reconocimiento
- *R* is the coupon rate, which you should set to 4%
- *ac* is the number of complete years (round down) from issuing date to maturity date, always an integer

- *m* is the number of complete months (round down) that remain in the fraction of the year after calculating the variable *ac*, always an integer

To calculate *ac* and *m*:

1. If the month for the maturity date is greater than or equal to the month of the issuing date:

   ac = year of val date - year of issuing date

   m = month of val date - month of issuing date

2. Else, if the month for the maturity date is less than the month of the issuing date:

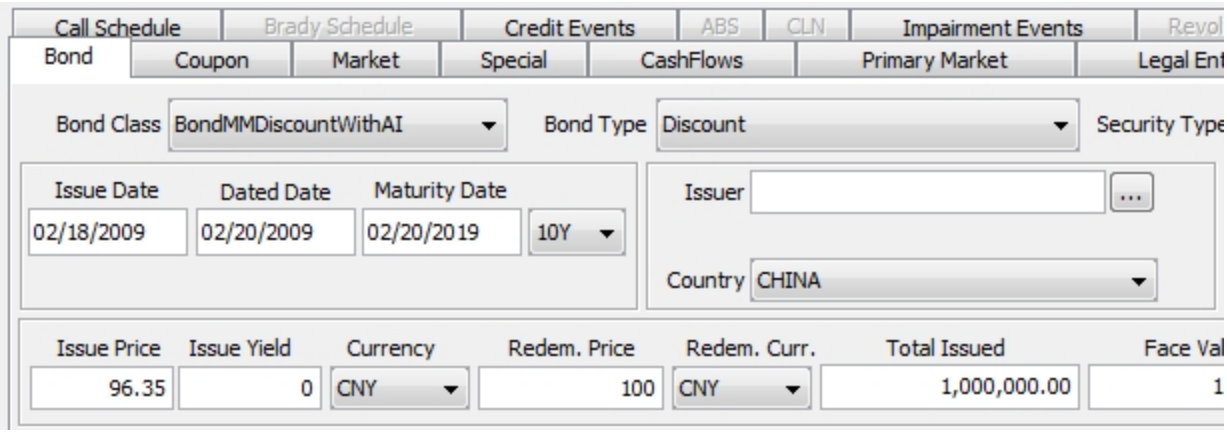
   ac = year of val date - year of issuing date - 1

   m = month of val date + 12 - month of issuing date - 1

5.18 Specifying Chinese Bonds

Chinese Discount Notes are issued under par and pay accrued interest at maturity. The notes are issued at a short period and a special daycount has been modified to accommodate coupons in a leap year.

Chinese Discount Notes (defined as BondMMDiscountWithAI in Calypso) trade on clean price and accrued interest is explicitly stated in the settlement calculation.



» Select 'BondMMDiscountWithAI' for the Bond Class.

» Select 'Discount' for the Bond Type.

» Enter all necessary details.

» Save and name your bond.

5.18.1 Pricing

These bonds are priced using PricerBondMMDiscount.

For explanatory purposes, original issue discount (OID) is used to calculate NPV.

- OID = 100 - Issue Price
- OID_FRACTION = OID / 100
- OID_VALUE = OID_FRACTION * Nominal
- Days in Period = Maturity Date - Issue Date

Pricer Measures	Description
ACCRUAL	Accrued interest from issue to value plus 1 day. • (OID_FRACTION / Days in Period) * Accrual days
ACCRUAL_BO	If FIRST_ACCRUAL is set to 'true' in the pricing parameter, accrued interest is from issue to valuation plus 1 day. • (OID_VALUE / Days in Period) * Accrual days If FIRST_ACCRUAL is set to 'false' or null, Accrual days is the same except without the extra day added.
ACCRUAL_FIRST	Calculated the same as ACCRUAL_BO, but will be subject to the FIRST_ACCRUAL pricing parameter.
ACCRUAL_SETTLE_DAY	If FIRST_ACCRUAL is set to 'true' in the pricing parameter, accrued interest is from trade settlement to valuation plus 1 day. • (OID_VALUE / Days in Period) * Accrual days If FIRST_ACCRUAL is set to 'false' or null, Accrual days is the same except without the extra day added.
PREM_DISC	Chinese notes accrete to the final value of the issue price rather than par because of implicit accrued interest. • [(Nominal * (Trade Price - Issue Price) / 100) / (Maturity Date - Settle Date)] * (Value Date - Settle Date + 1)
PREM_DISC_YIELD	Yield amortizes or accretes to issue price rather than par. If trade price is lower than issue price, yield calculates down to issue price at maturity. If price is higher, yield calculates up.
NPV	The change in market value plus the accrued interest. Accrued interest is derived from the original issue discount. • [Nominal * (Market Price - Trade Price) / 100] + [OID_VALUE / Days in Period] * (Value Date - Settle Date)
NPV_NET	Equal to the change in market value without accrued interest, accretion or amortization. • Nominal * (Market Price - Trade Price) / 100
NPV_DISC	Equal to the change in the market value with either accretion of the discount subtracted or the amortization of the premium added.

Pricer Measures	Description
	• NPV_NET - PREM_DISC or • NPV_NET - PREM_DISC_YIELD

5.18.2 Chinese Discount Note Accounting Events

The following accounting events allow generating the proper postings for Chinese discount notes.

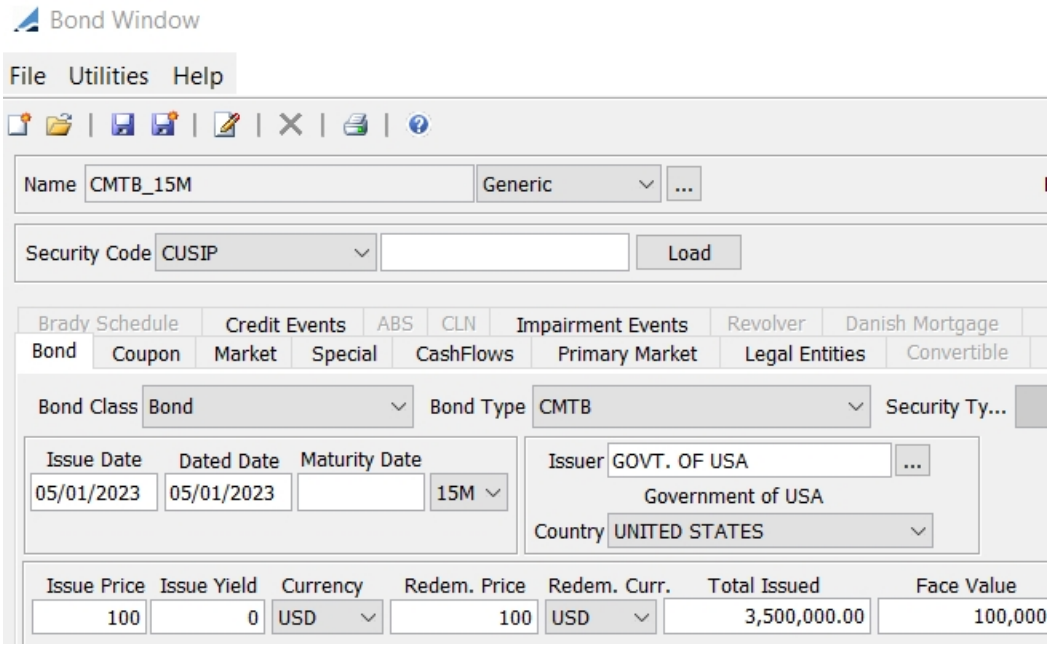
Accounting Event	Trigger Event	Pricer Measure
COUPON_CLIP	LIQUIDATED_POSITION from REDEMPTION corporate action.	ACCRUAL_FIRST
ACCRUAL_INC_REAL	LIQUIDATED_POSITION from REDEMPTION corporate action.	ACCRUAL_SETTLE_DATE
PREM_DISC_YIELD_REAL	LIQUIDATED_POSITION from REDEMPTION corporate action.	PREM_DISC_YIELD
REALIZED_CLEAN_PL	LIQUIDATED_POSITION from REDEMPTION corporate action.	Redemption nominal * (Issue price - trade price)
ACCRUAL_REAL	LIQUIDATED_POSITION from buy/sells.	ACCRUAL_SETTLE_DATE
ACCRUAL	TRADE_VALUATION	ACCRUAL_SETTLE_DATE
PREM_DISC_YIELD	TRADE_VALUATION	PREM_DISC_YIELD
MTM_DISC_YIELD	TRADE_VALUATION	NPV_DISC

▶ See Capturing BondMMInterest and BondMMDiscount Trades for additional details.

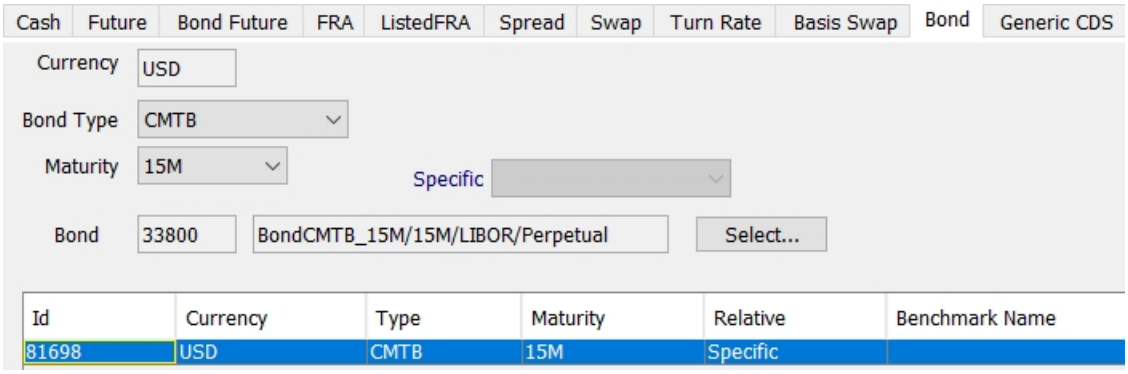
5.19 Specifying CMTB Bonds

CMTB bonds can be used only as curve underlying instruments.

They do not have a maturity date. The coupon is fixed and the quote type is Yield.



In the Curve Underlying window, you can assign specific tenors to these bonds (or benchmark of these bonds).



When used in a curve, the maturity date is calculated from the curve date by applying the specified tenor.

These are synthetic bonds that cannot be opened from the curve.

5.20 Specifying Colombian Bonds

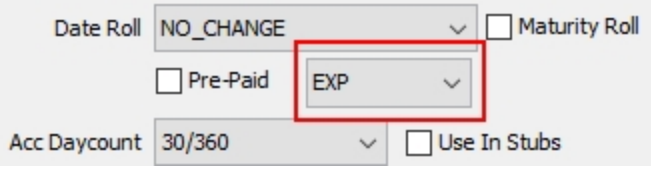
5.20.1 Pricing

The Colombian bonds described below use PricerBondColombian to handle the various rate conversions and rounding requirements.

▶ Refer to the *Calypso Bond Analytics Guide* for details.

5.20.2 Exponential Interest Cashflow

Some Colombian bonds require that the interest cashflow be based on an exponential formula. This is specified on the Coupon panel.

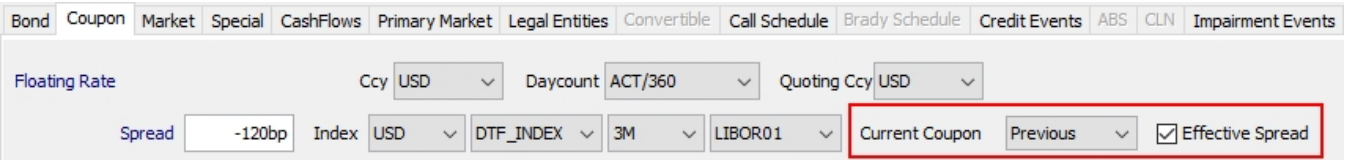


5.20.3 Local Corporate Bonds

Colombian non-government floating rate securities linked to the DTF, IBR, or IPC indices have various characteristics relating to the use of nominal and effective rates when issuing securities.

Current Coupon and Effective Spread

The Current Coupon and Effective Spread fields on the bond definition Coupon panel are only used by specific Colombian bonds.



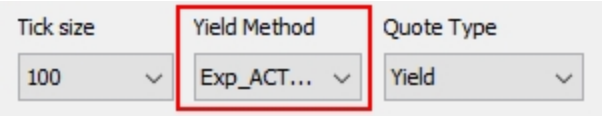
- Current Coupon – Only used by Colombian DTF and IBR-linked bonds, where from the settlement date to the next coupon date, the cashflows are calculated using either the "previous" rate or "current" rate.
  - Previous rate: Rate valid on coupon start date.
  - Current rate: Rate calculated using latest DTF rate on valuation date.

  Whether "previous" or "current" rate is used is determined at the time of issuance for a given bond. For future coupons, the "current" rate is always used.
- Effective Spread – Only used by Colombian DTF-linked bonds, where both the DTF rate and the spread are quoted in effective terms, however, the coupon rate must be in nominal terms.

  Check "Effective Spread" to convert from an effective rate to a nominal rate.

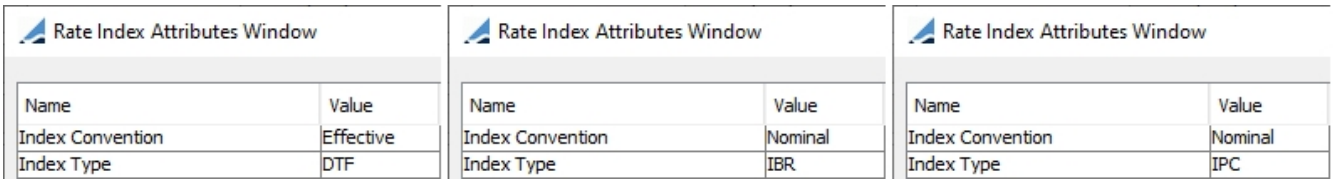
Yield Method

Colombian local corporate bonds linked to the DTF, IBR, and IPC indices use the Exp_ACT365 yield method.



Rate Index Attributes

The following Rate Index Attributes are required to specify the Index Type and Index Convention.



Rate Index Attributes Window

Name	Value
Index Convention	Effective
Index Type	DTF

Rate Index Attributes Window

Name	Value
Index Convention	Nominal
Index Type	IBR

Rate Index Attributes Window

Name	Value
Index Convention	Nominal
Index Type	IPC

5.20.4 Bonos Pensionales

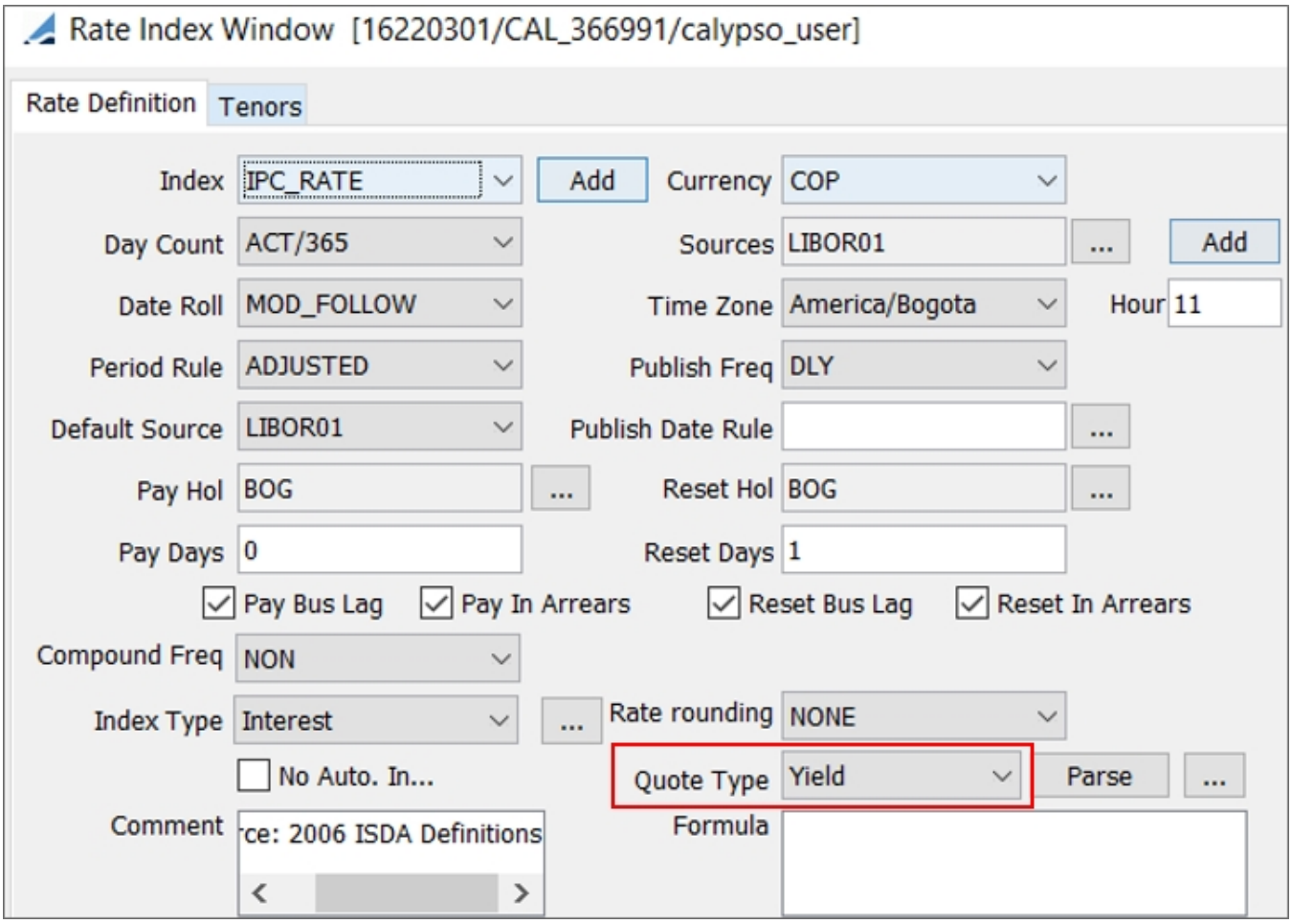
Colombian pension bonds, or Bonos Pensionales, are linked to the IPC inflation index.

IPC_RATE Index

The IPC_RATE index is used to store the percentage change of IPC_INDEX in the quotes.

The IPC_RATE rate index should be configured as a regular index as shown with Quote Type = Yield.

The IPC_RATE is applicable for one month rather than a year. This rate represents a month-on-month inflation rate. The quotes are published daily by the price vendor. This quote is saved daily in the quote set. The quote will be updated on the 5th of every month (or previous business day if the 5th is a holiday), so the quote will be same for the rest of the month.

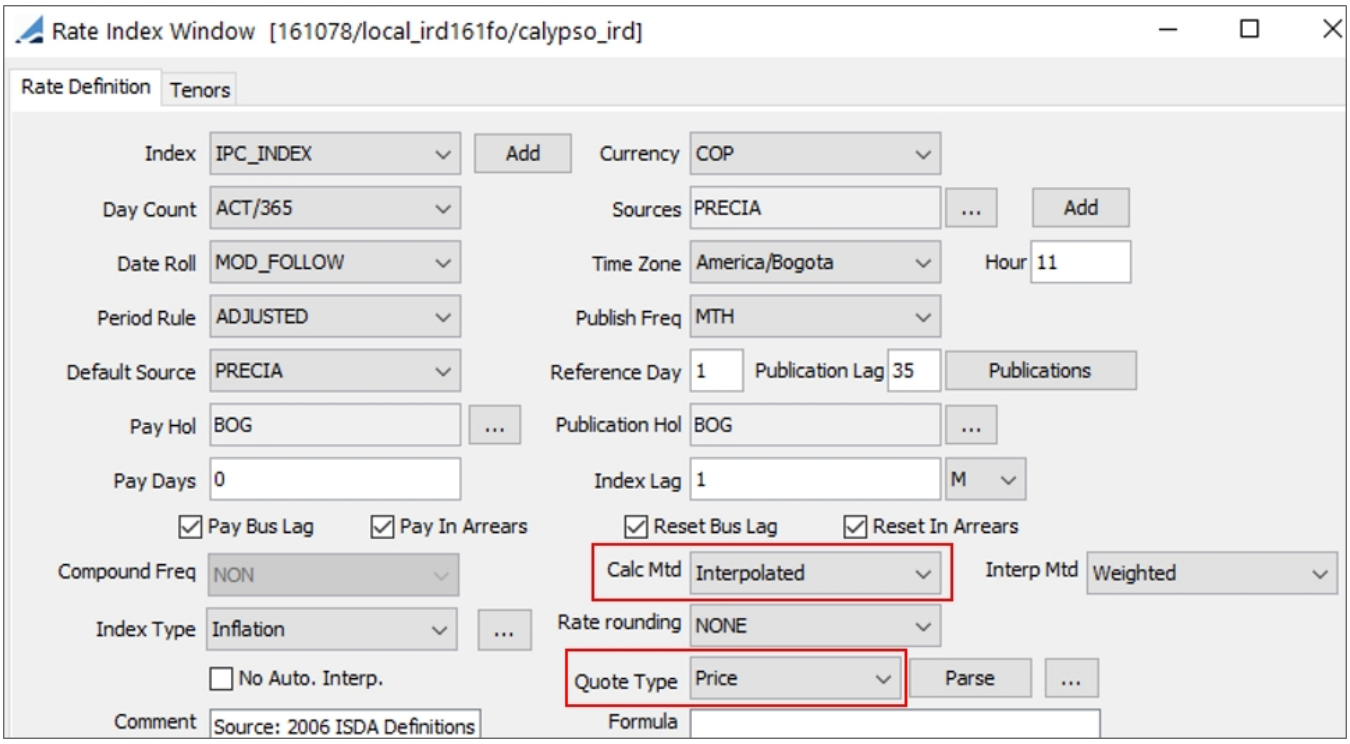


IPC_INDEX Index

The IPC_INDEX rate index should be configured as a regular monthly inflation type rate index as shown with Quote Type = Price and Calc Mtd = Interpolated.

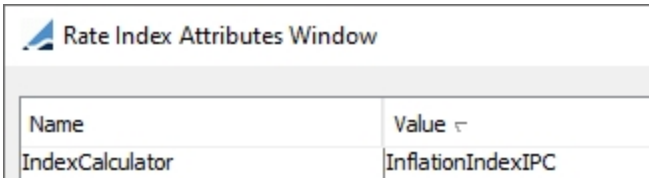
The monthly IPC_INDEX quotes store the monthly Colombia CPI quotes.

Rate rounding will be used while calculating the IPC_INDEX from the IPC_RATE. By default it is 5 for inflation rate index.



Index Calculator

Bonos Pensionales use the InflationIndexIPC index calculator to forecast by projecting the IPC rates with known IPC values.



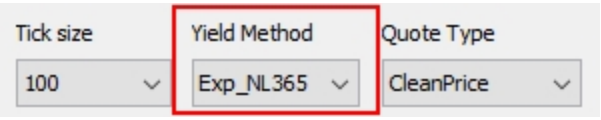
InflationLevelCalculator Scheduled Task

The scheduled task InflationLevelCalculator should be run daily. When a new IPC_RATE quote is published, the new quote will be used to convert the IPC Real to IPC_INDEX.

▶ Refer to Calypso Scheduled Tasks documentation for details.

Yield Method

Bonos Pensionales use the Exp_NL365 yield method.



5.20.5 UVR Bond Forwards

Only one specific type of Colombian UVR bond forward is supported in Calypso, where the bond currency is UVR and the redemption currency and coupon currency are COP. The bond forward settlement currency can never be UVR. This type of cross currency bond is only supported for UVR bond forwards; cross currency bonds are otherwise not supported for bond forwards.

The UVR to COP FX forward rate is calculated using an FX curve. On the exercise date, the UVR to COP conversion is done using that date's spot price between UVR and COP. No FX reset is needed. Upon exercise, the known date is set to the fixing date.

Pricer

Unlike Colombian bond trades which use PricerBondColombian, Colombian UVR bond forward trades use PricerBondForward.

In the bond definition Bond panel, set the UVR product code to TRUE so PricerBondForward can identify the bond as a UVR bond forward.

▶ Refer to the *Calypso Bond Analytics Guide* for details on bond forward pricing calculations.

Trade Capture

Bond forward trades can be captured using the Bond Forward Trade window.

▶ See Capturing Bond Forward Trades for details.

5.21 Specifying Convertible Bonds

You can select the Convertible panel, provided the bond class is BondConvertible.

Select the Convertible panel to define the convertible features, and the Conversion Schedule panel to define the conversion schedule.

You can enter the price in monetary units in trade screens for convertible bonds quoted in Price.

5.21.1 Convertible Panel

» Enter the Convertible Details. The fields are described below.

» Click **Add** to add a conversion price reset row. Then enter the fields as applicable. The fields are described below.

Convertible Details

Fields	Description
Target Product	Click ... to select the target equity. The bond will be converted to the selected equity.
Target Code	Select the target code from the Target Code field.
Issue Strike	Enter the equity price on conversion date.
Start	Enter the start date of the conversion process.
End	Enter the end date of the conversion process.

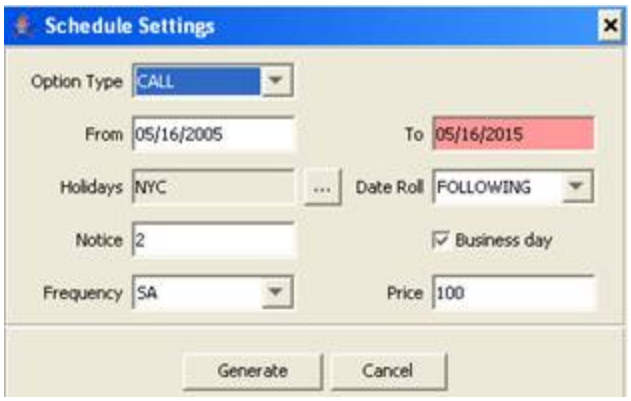
Conversion Price Reset Schedule

Fields	Description
Type	Choose between DOWN or UP to define the type of option.
Date	Enter the option date.
Cap	Enter the cap value (for a DOWN option).
Floor	Enter the floor value (for an UP option).
Multiplier	Enter the multiplier (bond / equity) that will apply if the cap or the floor is reached. It will override the multiplier specified in the Conversion Schedule panel.
Price Set?	Check the “Price Set?” checkbox if the option is exercised. In that case, enter the new equity price in the Historical Price field.
Historical Price	Enter the new equity price if the option is exercised.

5.21.2 Conversion Schedule Panel

The Effective Call and Redemption Type fields do not apply to convertible bonds.

» Click  to generate the schedule. It brings up the Schedule Settings dialog.



Enter the fields as needed and click **Generate**. The fields of the conversion schedule are described below.

» You can also click to add a conversion row based on the information specified in the Convertible panel. The fields are described below.

Fields	Description
Redemption Date	Enter the effective conversion date.
Option Type	Select the option type.
Percentage	Enter the percentage of securities that is converted.
Type	Select mandatory or optional. If mandatory, this means that the conversion will definitely occur and that the bond will no longer exist after the effective conversion date. There is no processing based on that field. It is for information purposes only.
Settlement	Select the type of exercise: Physical. **[NOTE: Cash settlement is not currently supported]**
Price	Enter the exercise price.
Bond Unit	Enter the unit of bond that will be converted.
Target Unit	Enter the unit of equity after the conversion.
Exercised?	Select Yes or No to indicate if the conversion has been exercised (Yes/No). The system generates the Convertible Corporate Action only if it is flagged as "Exercised". At Maturity, the system does not generate the REDEMPTION Corporate Action if it is flagged as "Exercised".

5.22 Specifying Credit Linked Notes

A Credit Linked Note (CNL) is a debt instrument bundled with an imbedded credit derivative. In exchange for a higher yield on the note, investors accept exposure to a specified credit event. For example, a note might provide for

principal repayment to be reduced below par in the event that a reference asset defaults prior to the maturity of the note.

A Credit Linked Note is a bond whose coupon and principal payments depend on a credit event. Unlike a corporate bond, where the credit event is on the issuer, a CLN can have a credit event in any reference name.

In a simple case, an investor will buy a CLN (Reference name Ford) from an Issuer (Citigroup) and receive a coupon of Libor + x. He will lose the remaining coupons and the principal amount if there is a credit event on Ford or Citigroup. With Risk Aggregation, the exposure is reported as the exposure for the CDS, not the issuer of CLN.

5.22.1 Types of CLN

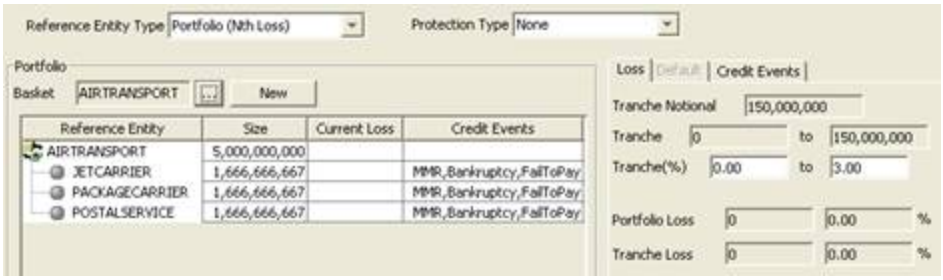
- Principal-protected notes – The principal is guaranteed by the issuer. The coupons are risky and they disappear if there is a default on a reference credit.
- Boosted coupon notes – The coupons are guaranteed by the issuer, but the principal payment is linked to the default event of a reference credit.
- Reduced coupon notes – Principal repayment is the face amount. If the reference credit event occurs, the termination payment is enhanced by the loss in the event of default of a reference asset.
- Credit Sensitive notes – The coupon changes with the credit rating of the reference entity. If the reference entity is downgraded, the coupon steps up. If the credit goes below a certain level, the investor can put the bond to the issuer.
- Index Linked notes – The coupon and redemption is linked to an index. As an example, the coupon can be zero and the principal can be linked to the level of the iBoxx credit derivative index.
- Counterparty-funded structures or SPV-funded structures.
- Reference Pool – Static or managed.
- Settlement – Cash or physical.

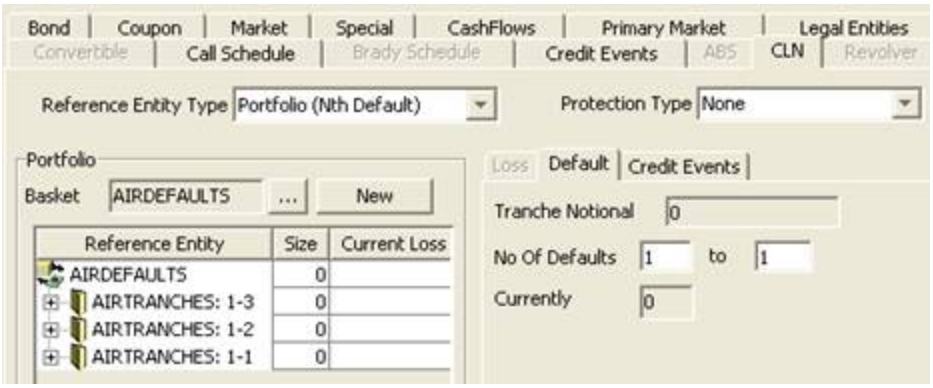
5.22.2 Bond CLN Product

The Bond CLN product is a bond of class BondCLN.

Select the CLN panel and enter the fields described below, then click **Save** to save the bond.

Fields	Description
Reference Entity Type	Select the reference entity type: Single Name, Portfolio (Nth Loss), or Portfolio (Nth Default). A CLN is composed of the following: Risky Bond + CDS (Single Name or Nth Loss Basket) + Risk Free Bond (Charged asset). The pricers used are: PricerBondCorporate, PricerCreditDefaultSwap, PricerNthDefaultBasket and PricerBond to value the individual sub components. A single name is valued as a **Single** Name CDS + Risky Bond + Risk Free Bond. If there are multiple names, these are valued as **Nth Loss** basket using the same valuation

Fields	Description
	model used to value the CDS **NthDefault**. ***Single Name***  » Click ... to select the issuer and select the seniority. The issuer's industry and rating are displayed. » In the Credit Events panel, click **Select Credit Events** to select the credit events to which the CLN is sensitive. ***Portfolio (Nth Loss)***  » Click ... to select a basket, or click **New** to create a new basket. It brings up the Reference Entity Basket window. Help is available from that window. In the Loss panel, the Tranche Notional is set to the Total Issued of the bond. Enter the from and to percentages of the tranche to calculate the size of the basket. » In the Credit Events panel, click **Select Credit Events** to select the credit events to which the CLN is sensitive. You can also right-click an item of the basket and select Set Credit Events. ***Portfolio (Nth Default)***

Fields	Description
	 » Click ... to select a basket, or click **New** to create a new basket. It brings up the Reference Entity Basket window. Help is available from that window. In the Default panel, the Tranche Notional is set to the Total Issued of the bond. Enter the number of defaults to calculate the size of the basket. » In the Credit Events panel, click **Select Credit Events** to select the credit events to which the CLN is sensitive. You can also right-click an item and select Set Credit Events.
Protection Type	Select the protection type: Coupon Protected, Principal Protected or None. When credit events are applied, the processing is based on the type of protection. • For None, the Maturity date of the Bond is set to the Credit Event date. The Payment Amount is set to the Recovery value specified in the credit event. For example, for a CLN maturing in June,05 if a credit event happens today with Recovery rate of 40%, the Maturity date is set to today and the Principal redemptions as 40% * Original Amount. • For Coupon Protected, the coupons remain the same and reduce the Principal to the Recovery Amount (same as Termination Amount in CDS). • For Principal Protected, the coupons are set to 0. The Principal is unaffected.

5.22.3 CLN Trades

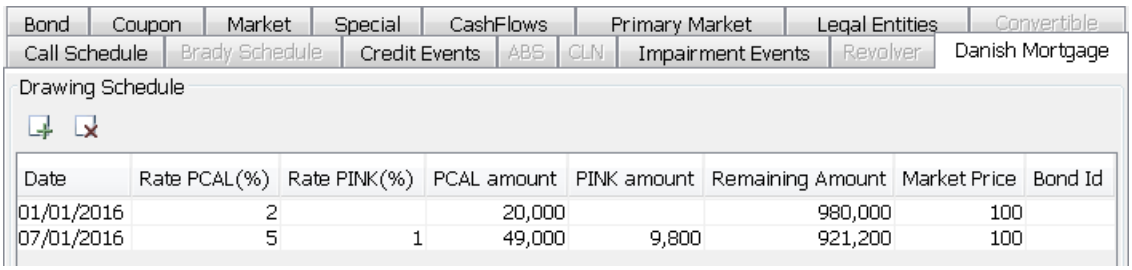
It is recommended to capture trades for Credit Linked Notes using a BondCLN product in the Bond Trade window.

5.23 Specifying Danish Mortgage Bonds

Danish mortgage banks publish a range of data for bond investors in order to obtain a more effective pricing of callable mortgage bonds with focus on debtor's prepayment behavior in callable bonds, hence for Danish Mortgage Bonds, you can define a drawing schedule in the system.

Negative interest rates on Danish Mortgage Bonds imply that the investor has to pay the issuer interest, however this is not physically done. Therefore the custodian compensates the issuer for the loss of cash with redemption of the security. The negative interest redemption is handled through the use of a PINK rate on the drawing schedule, and the PINK corporate action.

Danish Mortgage Bonds are defined with the bond class BondDanishMortgage, and the bond type "Standard". The drawing schedule must be defined in the Danish Mortgage panel. The actual drawing is performed using the Corporate Action process.



Date	Rate PCAL(%)	Rate PINK(%)	PCAL amount	PINK amount	Remaining Amount	Market Price	Bond Id
01/01/2016	2		20,000		980,000	100	
07/01/2016	5	1	49,000	9,800	921,200	100	

» Click to add an entry to the drawing schedule – You can add as many entries as needed.

For the first entry:

- PCAL Amount = PCAL Rate * Issue Amount
- PINK Amount = PINK Rate * Issue Amount
- Remaining Amount = Issue Amount - PCAL Amount - PINK Amount

Subsequent entries are computed based on the previous entry's Remaining Amount, rather than the Issue Amount.

The PCAL drawing rate creates CA products of type REDEMPTION.DRAWING.

The PINK rate allows a redemption of principal without a cash payment to offset the value of negative coupon payments, if any. It creates CA products of type REDEMPTION.PINK.

5.23.1 Legacy Danish Bonds

When saving the bond, you are prompted to create a drawn bond automatically or not (bond with bond class BondDanishMortgage and sub-type "Drawn").

- If you choose Yes, the Drawn Bond Id will be automatically populated in the drawing schedule.
- If you choose No, you can manually update the drawn bond Id.

The cashflow schedule is then updated with the information of the drawing.

You can also use the scheduled task BOND_DRAWING to generate the Drawn Bonds on drawing date, prior to generating the corporate actions.

The Drawn Bond is created with the same characteristics as the master bond.

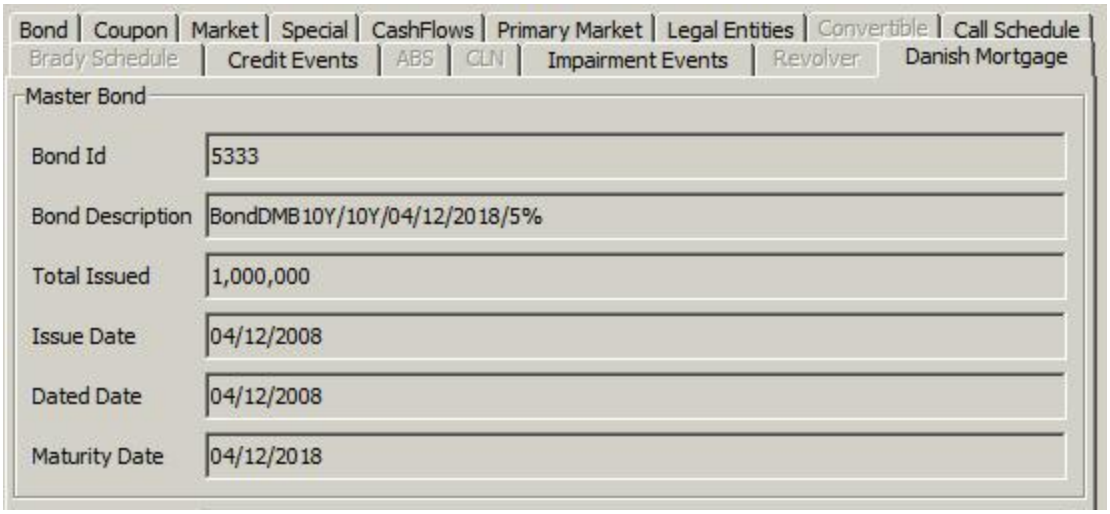
The following security codes are set:

- ISIN: Same as master bond (provided it is not defined as "Unique")
- FromBondProduct: Id of master bond
- DMB Serie: Maturity date

Additional security codes can be propagated to the Drawn Bond provided they are not defined as "Unique" – They have to be added to domain *BondDanishMortgage.SecCodes*.

A Drawn Bond is created for each entry in the drawing schedule

On the Drawn Bond, the Danish Mortgage panel provides information about the master bond.



At drawing date, the position on the master bond is amortized by the prepaid amount, and a drawn position is generated on the Drawn bond. Both bonds can be traded.

5.23.2 TARGET2 Compliant Danish Bonds

In order to enable this feature, set the environment property UseNewDMBRedemption=true.

There is no creation of a "drawn" bond.

In this case, two corporate actions are generated for Danish Mortgage Bonds on the same payment date: REDEMPTION/DRAWING in order to amortize the bond by the drawn amount, and CASH/INTEREST in order to generate the coupon amount.

The corporate actions should be applied by payment date so that they can be created together.

The Record Days on the bond should be set to 1, so that on the CA the Record Date is one day before the Payment date.

5.24 Specifying Floating Rate Notes

5.24.1 Principles

- Some floating rate bonds, indexed on a particular floating rate, may pay interest coupons at different periods than the reset frequency they are referring to calculate full coupon. The reset frequency can be greater than the payment frequency, allowing the system to calculate the full coupon based on the different reset rates.
- Also, the payment of the coupon can be more frequent than the rate at which it has been calculated. In that case, the payment cashflows will refer to the same rate.
- All these reset and payment frequencies will be defined in the coupon panel of the bond product and used by the system to generate the appropriate cashflow schedule.

  Note that the cashflow schedule will display only payment flows. If one coupon payment is composed of several resets, a utility tool “Interest History” has been set up to show the internal periods used to calculate the coupon.
- The internal periods are not customizable, resulting from the frequency method configured in the coupon definition. Only the payment periods can be modified in the cashflow schedule, updating consequently the internal periods.
- Lastly, in the option that the reset frequency is greater than the payment frequency, a compounding method can be applied to the coupon amount calculation.

Floating rate notes can be defined as Bond or BondFRN. **BondFRN should be reserved for actual FRNs (short term floating rate notes) and not for all floating rate bonds.**

5.24.2 Coupon Panel

In the Coupon panel, select Floating Rate, and configure the following.

» The compound frequency specifies the frequency of reset. By default, field is the same as the payment frequency.

» The method is the Interest calculation method:

- NoCmp means that the coupon amount to be paid is the sum of the individual reset interest amounts.
- Flat means that the reset interest amounts will compound to calculate the coupon to be paid. Note that this method is not used when the payment frequency is greater than the reset frequency.

5.24.3 CashFlows Panel

In the CashFlows panel, generate the cashflows.

You can see the details of an interest cashflow by choosing “Interest History” from the Cash Flow menu. This will display the individual periods with the respective reset rates based on the dates configured in the floating rates definition of the Coupon panel.

The columns are described below.

Columns	Description
Start Date	Starting date of the reset period. If it is the first reset period of the cashflow, this date is the same as the Pmt Begin date.
End Date	Ending date of the reset period.
Days	Number of days included in the reset period.
Period	Ratio of number of days in the reset period by the daycount.
Rate	Rate used for interest calculation, populated into the quote.
Accrual	Total amount of accruals for that period.
Total	Sum of the accruals. Equal to the Accrual for the first period and then cumulated for the next periods.
Reset Date	Date at which the rate is selected. Date initialized according to the set up of the floating rate definition in the coupon panel.
Base Interest	Is the accrual interest amount.
Compound Interest	Show only the compounded interest on that period. Field that remains blank when the method = NoComp.

5.24.4 DISC_MARGIN Pricer Measure

DISC_MARGIN calculates the discount margin of a floating rate bond, which is the spread added to current rates to equal the bond yield. Ref: Stigum and Robinson, “Money Market and Bond Calculations” (1996), Ch. 17. For the average rate needed for that formula, the Calypso implementation uses the index rate as of the valuation date.

5.24.5 FRN Pricing

The following algorithms can be used to price FRN bonds:

- PricerBondGeneric – Standard bond pricing. When solving for the dirty price from a yield to maturity, all future coupons are taken into account.
- PricerBondFRN – When solving for the dirty price from a yield to maturity, we assume that the bond matures on the next coupon date when computing the dirty price from the yield.
- PricerBondFRNMargin – It handles PV01 calculation based on discount margin instead of yield. So PV01 is essentially an analysis in the effect of a one basis point shift in the discount margin.

  This affects PV01 only when the pricing parameter BOND_FROM_QUOTE is set to true, also the pricing parameter FORECAST_FROM_CURVE must be set to false.

  Note that you also need to make sure that the Compound Frequency is set on the reference index, even if it is set to NON because by default it is not set.
- PricerBondFRNAUD – Pricing for BondFRN product with sub-type AUDFRN. It uses the AFMA formula to calculate the dirty price, given a cash rate, swap rate, and a trading margin.

Note that the sub-type must be set to AUDFRN in order for the trading margin quotes ("<bond quote name>.TM") to be saved.

CASH_RATE_01 pricer measure is available for FRN AUD Bonds (BondAUDFRN / PricerBondFRNAUD) for reporting to represent the Cash_Rate sensitivity. The SWAP_RATE and CASH_RATE are derived from the forecast curve and not the discount curve.

CASH_RATE_01 is the sensitivity to a 1 bp increase of the CASH_RATE.

CASH_RATE_01 = PV_AFMA (〖Cash_Rate〗 +1bp)-PV_AFMA (〖Cash_Rate〗)

5.25 Specifying Inflation Bonds

Follow the steps below to define inflation bonds.

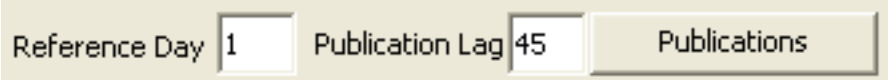
5.25.1 Creation of the Rate Index

Make sure that the CPI value (or RPI, TIPS, etc.) is available in the *rate_index* domain.

Then specify the CPI rate index (or RPI rate index, etc.) using **Configuration > Interest Rates > Rate Index Definitions**.

» Enter the fields described below.

- Set the index type to Inflation.
- Set the quote type to Price.
- Select a publication frequency, enter a reference day and a publication lag.



The reference day is the day of the month when the inflation is effective, and the publication lag is the time lag between the effective date of an inflation level and its actual publication.

You can click **Publications** and generate the dates to make any modification if needed. Otherwise the reference day and publication lag are used to determine the publication dates.

[NOTE: The system does not support end-of-month reference days 29, 30, and 31. This restriction also pertains to the Publications Dates window when modifying the Reference Date fields]

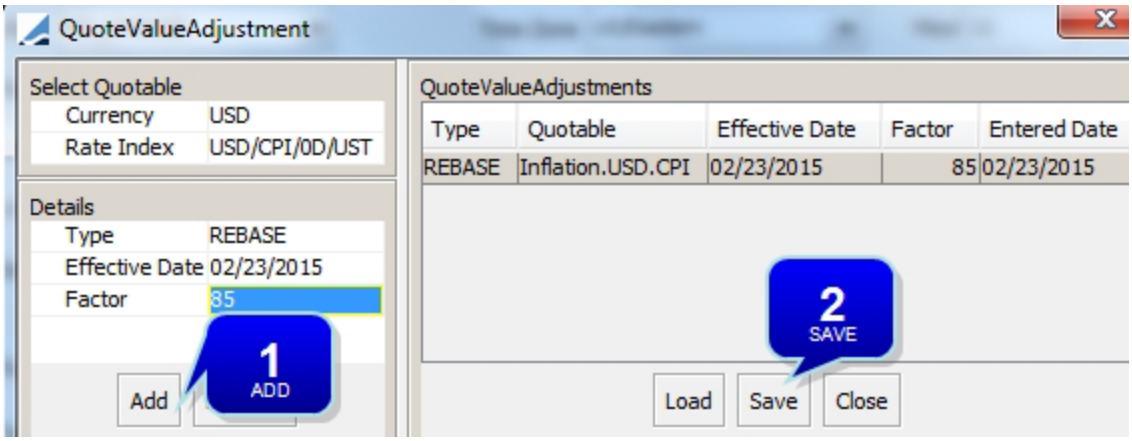
- Click **Attributes**, and set the IndexCalculator to InflationIndex.

  If the IndexCalculator attribute does not appear, click **...** to add it.

» Save.

» Select the Tenors panel and add tenors as needed. Then save the rate index.

You can click **Rebase** in the Rate Index Definition window to rebase the index level as needed.



- Enter an effective date and a rebase factor in percentage, then click **Add**.
- Click **Save**.

5.25.2 Creation of the Inflation Bond

You can create a bond sub-type IndexedInflation in the *Bond.subtype* domain as applicable. This is optional.

For RPI indexed bonds, select the Gilt sub-type.

Select the Market panel.

- For English (issued in or after July 2005), French, American, and South African inflation bonds, the quote type must be defined as CleanPrice. For English indexed bonds issued before July 2005, the quote type must be defined as GrossPrice.

Select the Special panel.

- Check the “Notional Indexed” checkbox.
- Select a reference index from the Index field. Only reference indices of type Inflation can be selected.
- Check the “Guaranteed Notional” checkbox to indicate that the notional redemption is guaranteed at maturity.
- Select an Inflation Floor option as needed:
  - NONE: Default.
  - Guaranteed Principal: Inflation indexation on final principal payment is floored.
  - Guaranteed Principal and Coupons: Inflation indexation on all coupon payments, and final principal payment is floored.
- Enter the index date in the “Index date” field.
- Enter the rate index value on the issue date in the "Idx Value" field.

- Enter a number of decimal places in the "Rounding" field and select the rounding method from the adjacent field. If you do not set these values, the default behavior is to round NEAREST to 5 decimals.
- Check the "Round Gross Price Before Adjustment" checkbox as applicable. This will round the prices before the inflation adjustment and not after.

  Peruvian inflation bonds generally use this convention.

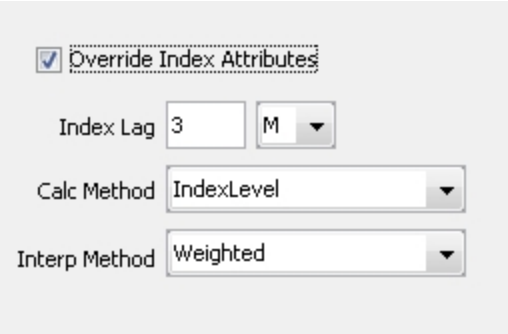
5.25.3 Rounding the Corporate Actions

To specify rounding on the associated corporate actions, follow the steps below.

- Add the value “ROUND_CA_AMOUNT” to the *rateIndexAttributes* and *domainName* domains.
- Add the values “true” and “false” to the *ROUND_CA_AMOUNT* domain.
- In the rate index defaults, click **Attributes** and set the ROUND_CA_AMOUNT attribute to True.
- In the Coupon panel of the Bond product, set the Coupon Digits field to the number of decimal places that you want.

5.25.4 Index Override Panel

You can customize index values on an inflation bond. Fields will default to values set in Rate Index Defaults for the selected index.



Select the Special panel in the Bond Product Definition window.

- Click the "Override Index Attribute" checkbox to activate the feature.

Fields	Description
Index Lag	Reset lag for the index, Select a numerical value along with day, month, etc. from a drop down menu.
Calc Method	Indexlevel – Create a single rate index and save quotes. or Interpolated – Create a single forecast curve for obtaining inflations prices to calculate bond payouts based on a product definition.
Interp	'Weighted'.

Fields	Description
Method	

5.25.5 Pricing

TIPS should use PricerBondUST. Set USE_REAL_YIELD in the pricing parameter set if you would like to use PricerBondGeneric for valuation. Otherwise, defaults to False.

5.26 Specifying Islamic Bonds

Islamic bonds are identified with the following security codes:

- Sukuk=True
- IslamicContract=Musharaka, Mudaraba, or Ijara.

You need to add `<calypso home>/client/resources/samples/dbscripts/SchemaData_islamic.xml` to ExecuteSQL in order to populate Islamic static data.

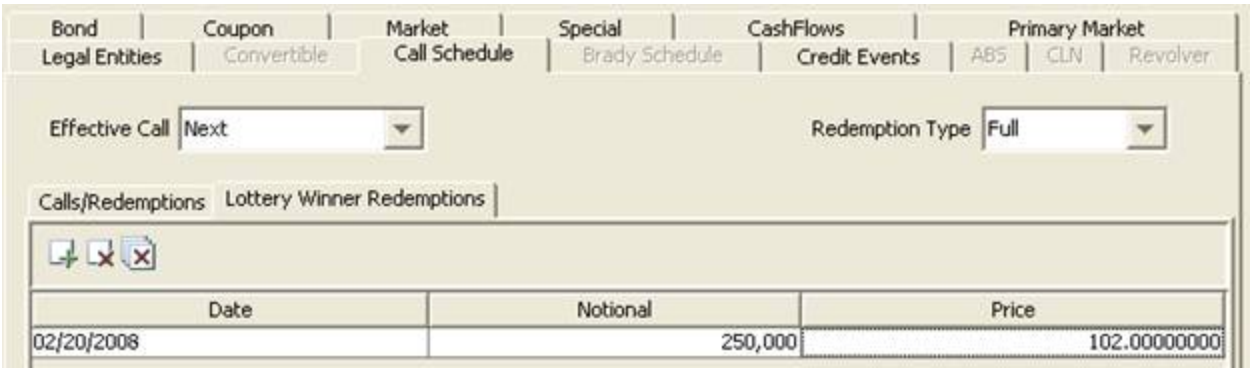
The only difference from standard bonds is the corporate action process, where INTEREST corporate actions are replaced with DISTRIBUTION corporate actions.

5.27 Specifying Lottery Winner Redemptions

Select the Call Schedule – Lottery Winner Redemptions panel to specify lottery redemptions for bonds redeemed by lottery.

There is no processing based on these redemptions. This is for information purposes only.

The Effective Call and Redemption Type fields do not apply to lottery redemptions.



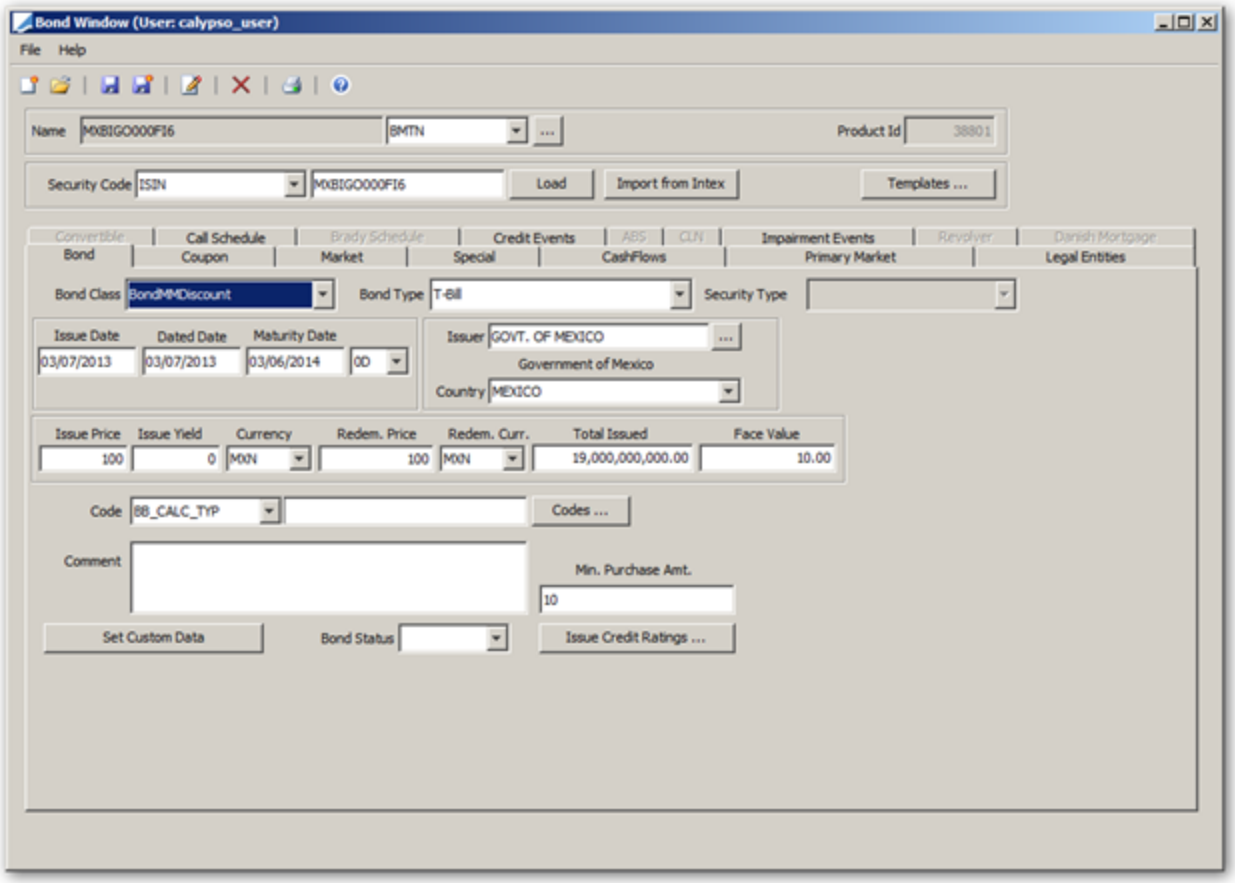
» Click to add a redemption row. Enter the notional that will be redeemed and the redemption price.

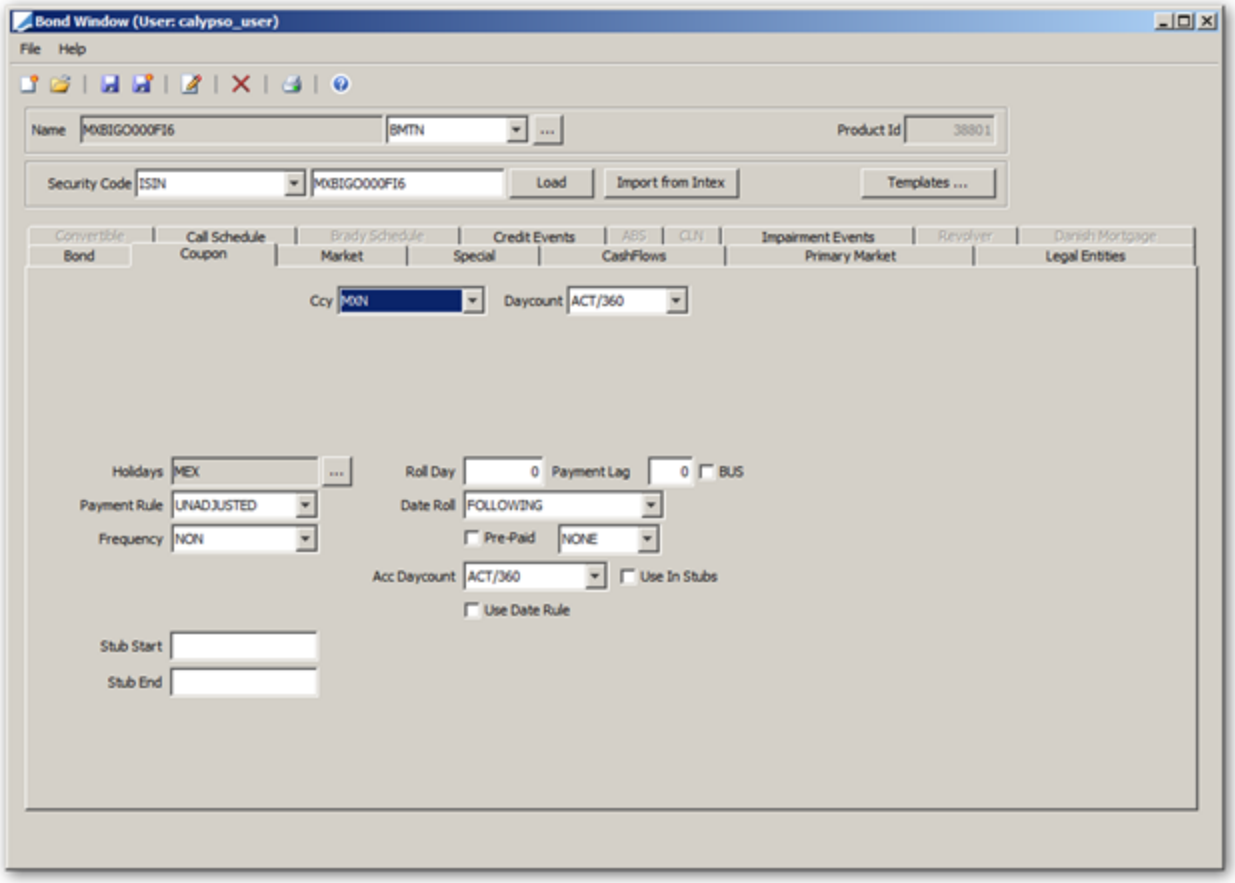
5.28 Specifying Mexican CETES Bonds

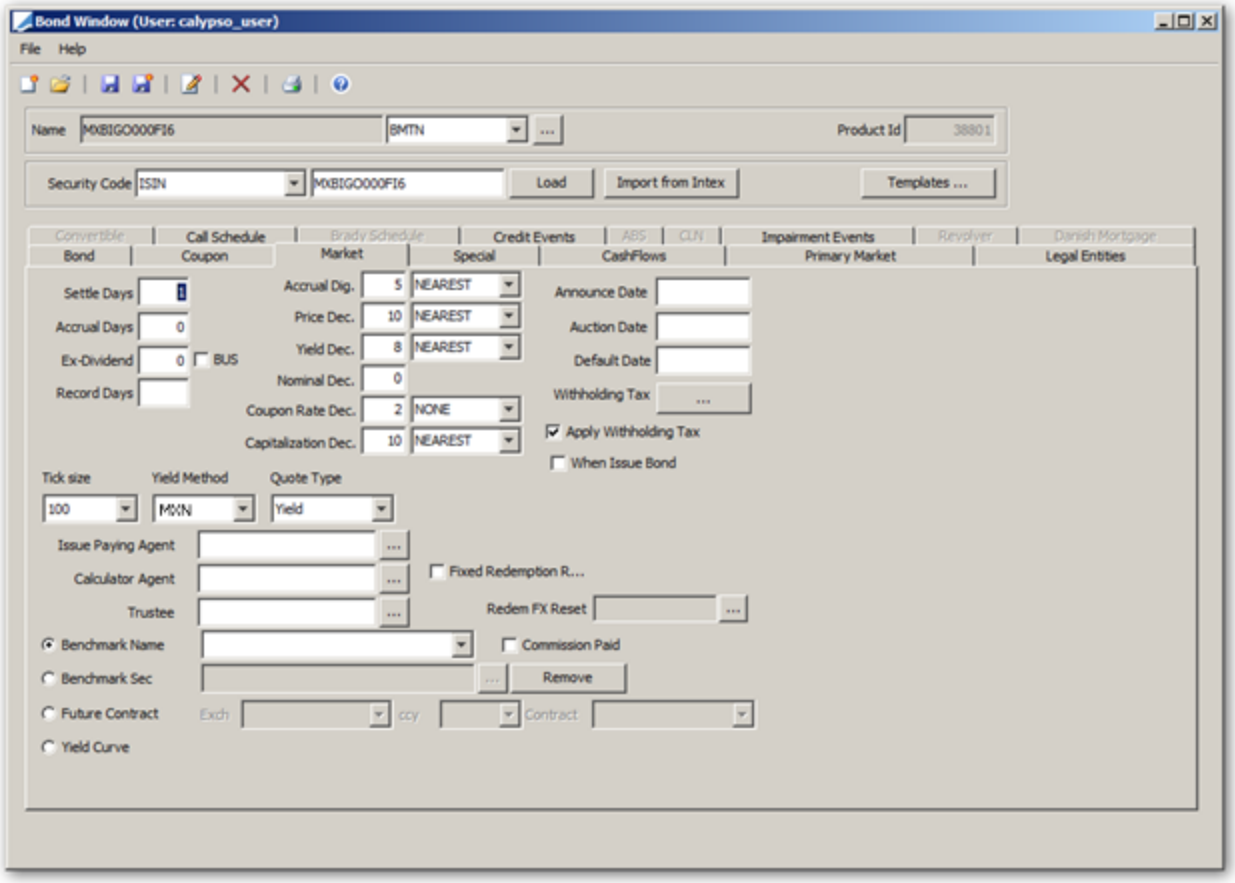
Mexican CETES (Mexican Government T-bills) can be captured as BondMMDiscount with the Quote Type “Yield”, and the Yield Method “MXN”.

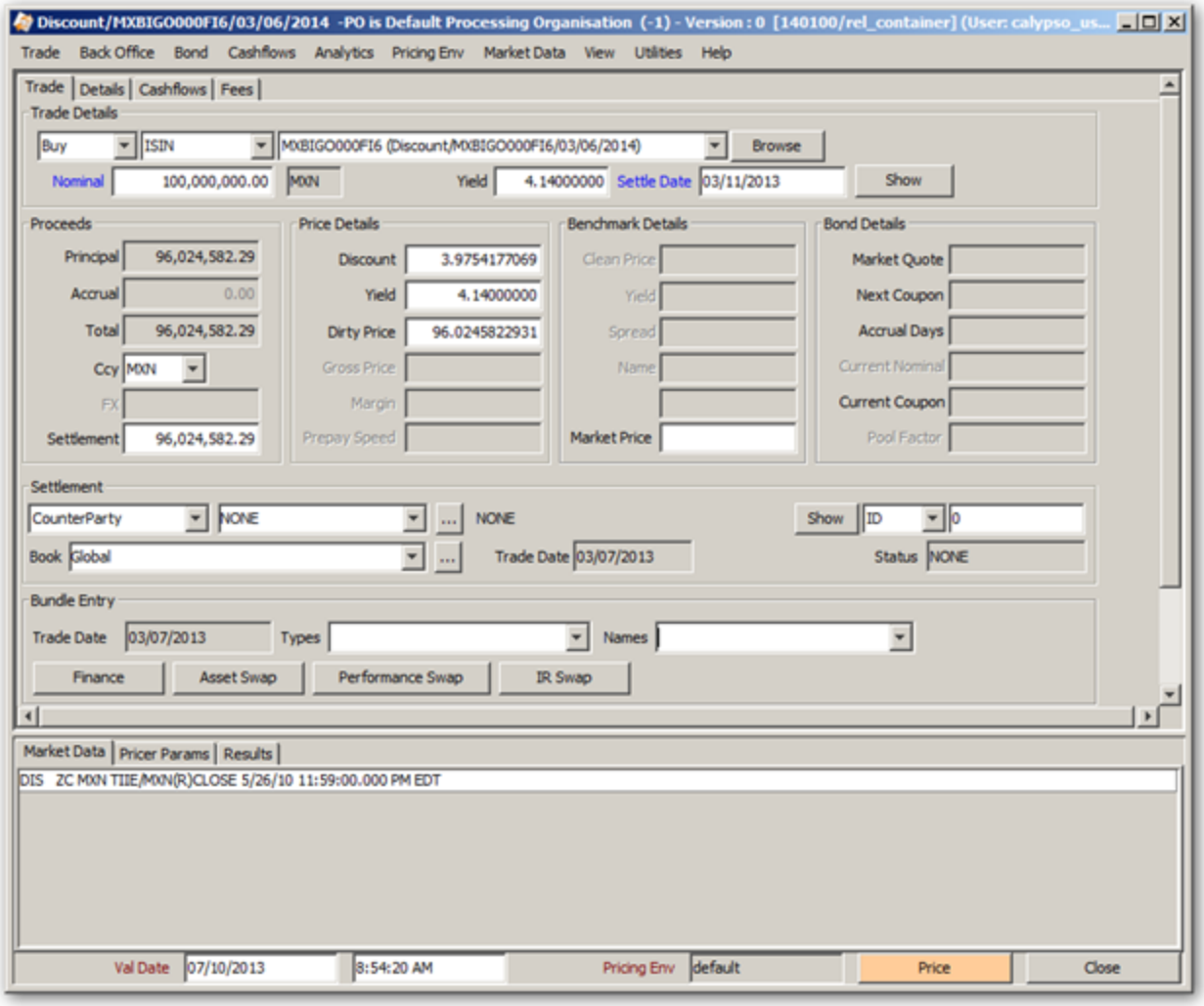
BondMMDiscount and BondMMInterest use the pricing parameter MMKT_FROM_QUOTE.

The pricer measure YIELD_BEY uses the Stigum formula.




Bond Window (User: calypso_user)
File
Help
Name
MXBIGO000FI6
BMTN
Product Id
38801
Security Code
ISIN
MXBIGO000FI6
Load
Import from Intex
Templates ...
Convertible
Call Schedule
Brady Schedule
Credit Events
ABS
CLN
Impairment Events
Revolver
Danish Mortgage
Bond
Coupon
Market
Special
CashFlows
Primary Market
Legal Entities
Ccy
MXN
Daycount
ACT/360
Holidays
MEX
Roll Day
0
Payment Lag
0
BUS
Payment Rule
UNADJUSTED
Date Roll
FOLLOWING
Frequency
NON
Pre-Paid
NONE
Acc Daycount
ACT/360
Use In Stubs
Use Date Rule
Stub Start
Stub End


Bond Window (User: calypso_user)
File Help
Name MXBIGO000FI6 BMTN ... Product Id 38801
Security Code ISIN MXBIGO000FI6 Load Import from Intex Templates ...
Convertible Call Schedule Brady Schedule Credit Events ABS CLN Impairment Events Revolver Danish Mortgage
Bond Coupon Market Special CashFlows Primary Market Legal Entities
Settle Days 1
Accrual Days 0
Ex-Dividend 0 BUS
Record Days
Accrual Dig. 5 NEAREST
Price Dec. 10 NEAREST
Yield Dec. 8 NEAREST
Nominal Dec. 0
Coupon Rate Dec. 2 NONE
Capitalization Dec. 10 NEAREST
Announce Date
Auction Date
Default Date
Withholding Tax ...
Apply Withholding Tax
When Issue Bond
Tick size 100
Yield Method MXN
Quote Type Yield
Issue Paying Agent
Calculator Agent
Trustee
Fixed Redemption R...
Redem FX Reset
Benchmark Name
Benchmark Sec
Commission Paid
Remove
Future Contract Exch ccy Contract
Yield Curve



5.28.1 Zero Coupon Risky Bond

To address the case when Principal Recovery must be considered in the PRICE calculations (when INCL_RECOVERY_PRINCIPAL is true) and there have been no Coupon flows (and hence no prior principal recovery adjustments), in this case the final Principal payment is adjusted for the Recovery amount. The Recovery Amount is included in the 'Credit Principal' Column of the Last Principal flow, the 'Probable PV' Column and the 'PRICE' pricer measure reflects this adjustment.

Setup

- Product Code – Create product code IS_RISKY of type "string". On the bond level the value of this code must be set to "YES".

- Pricer Configuration – Select the Model Parameters panel. For PricerBondGeneric add Pricing Param Name: INCL_RECOVERY_PRINCIPAL to true.
- Probability Curve – Create the probability curve and add it in the Credit panel of the Pricer Configuration window.

5.29 Specifying Moroccan Bonds

The Moroccan bond market is one of the most important components of the Moroccan financial market. Support for Moroccan Bonds (new yield method and day count logic) is provided impacting yield method computations for the Moroccan bonds when configured with Yield method = 'Moroccan'.

5.29.1 Day Count

Created a new Day Count that is to be used with bonds with maturity longer than one year.

- Name: Moroccan/ACTB

This day count will not appear in the daycount drop-down field in the bond definition, but it is embedded in the pricer pricerBondMoroccan.

First Cash-Flow is First Long Coupon Period

A = Stub Start – virtual regular start date

M= Stub Start – Dated Date

Coupon=Notional*period interest*(Stub Start-Dated Date)/A

Accrual=Notional*period interest*(Settle Date-Dated Date)/A

Subsequent Cash-Flows

All subsequent cash-flows are generated based on a Day Count fraction like ACTB/ACTB.

5.29.2 Yield Method

Uses the new daycount Moroccan/ACTB.

Notation

y = Yield to maturity

A = Stub Start - virtual regular start date

Maturity > 364 Days

If the time to maturity (maturity date – spot date) is <= 364, the Moroccan yield uses the following discount formula:

1/(1+y*(maturity date – spot date)/360)

If the spot date is in a First Long coupon period, the Moroccan yield uses the following discount formula:

1/(1+y)^((Spot Date-Dated Date)/A +i-1)

i >= 1. Here, i represents the number of periods.

5.29.3 Configuration

- Configure your bond using ACTB/ACTB as the default daycount, the pricer overrides the default daycoount
- Use the new yield method Moroccan
- Quote type: yield
- Only supports pricing from quotes.
- Must use the pricer BondMoroccan

5.30 Specifying Payment-In-Kind Bonds

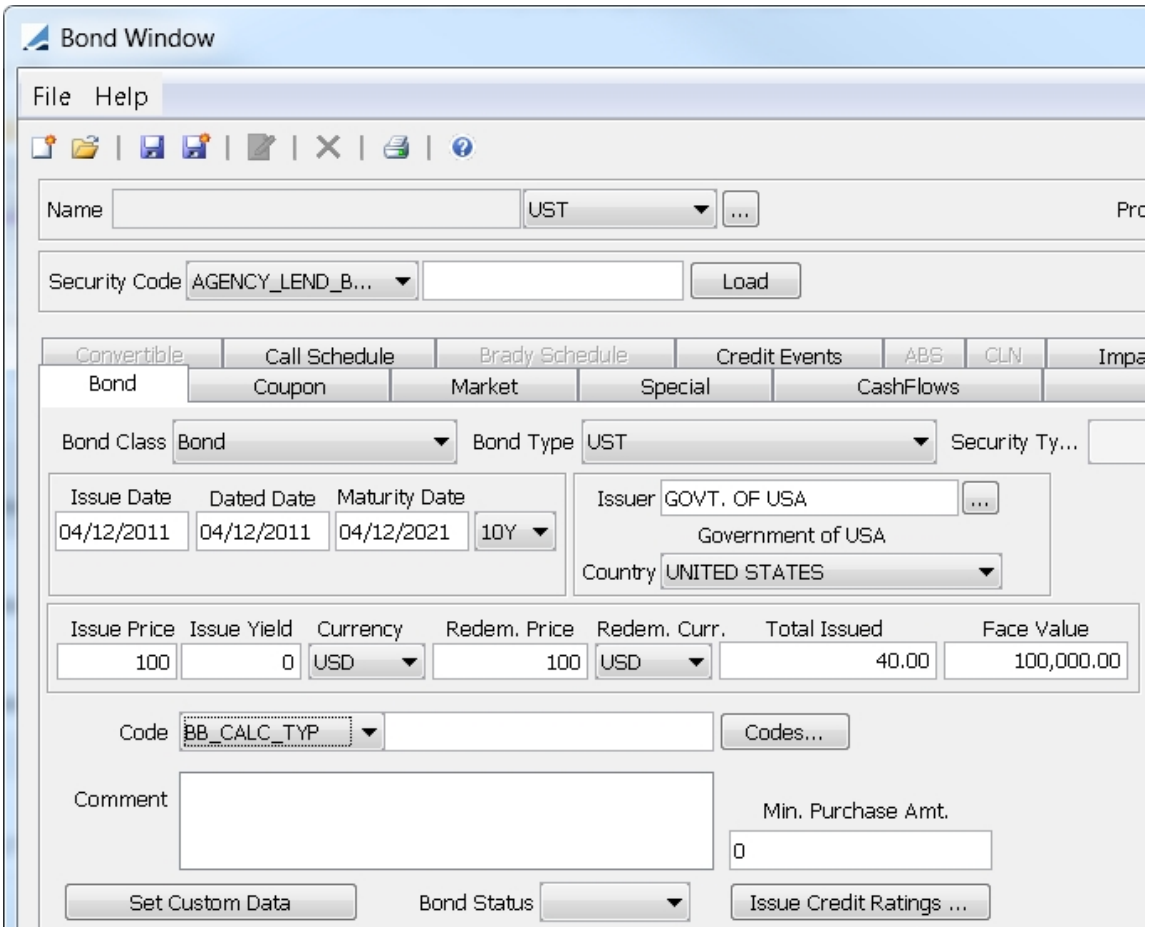
Payment-in-kind bonds pay a predetermined coupon rate as of a predetermined date: Full coupon rate - PIK rate, i.e a predetermined portion of the payment is capitalized back to the principal. Specific rules in the bond definition will outline how the rates are repaid. The PIK start date and rate can be entered on the Special panel of the bond window.

The PIK definition can be added to any payment schedule.

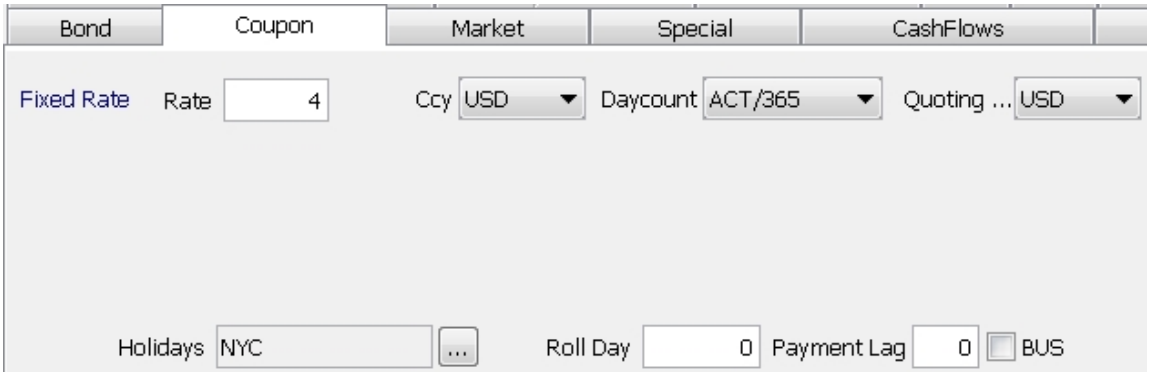
5.30.1 PIK Bond Example

PIK dates and rates are tied to a predefined bond, so the definition of the bond product will be necessary.

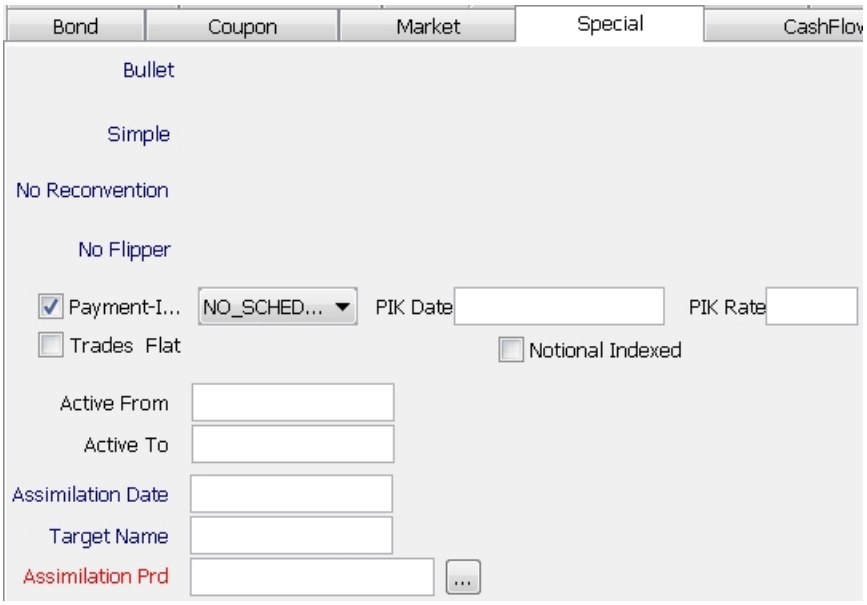
1. Set up the bond in the bond window.



2. Set up the bond coupon rate.



3. Navigate to the Special panel.



In the Special panel of the bond window:

- Specify payment-in-kind by checking the "Payment-In-Kind" checkbox.
- You can specify a single payment-in-kind date and rate, or you can specify a PIK schedule.
  - For a single PIK date and rate, select NO_SCHEDULE from the drop down and specify the PIK date and rate in the adjacent fields.

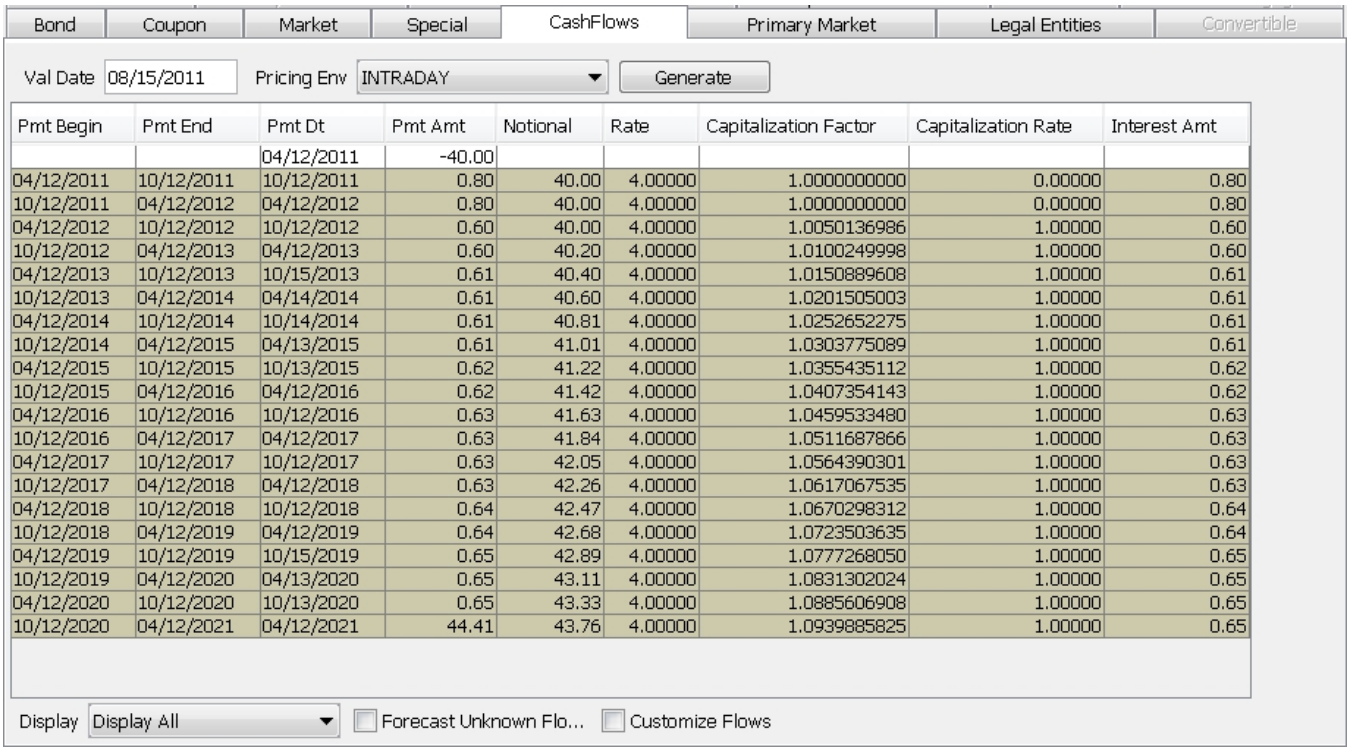
Example: Of the specified 4% bond coupon rate, 1% will be capitalized to the principal beginning 4/12/2012, paying on a bullet schedule.

  - For a PIK schedule, select PIK_SCHEDULE from the drop down and click ... to define a PIK schedule.

    The PIK schedule is based on the coupon dates, and the generated dates cannot be edited. Enter a PIK rate for each period.
- Save.

In the CashFlows panel of the bond definition window, generate cashflows and set the columns to display PIK capitalization rate, capitalization factor, etc. by right-clicking on the flows data and selecting **Configure Columns**. A window will be displayed and allow customize of data to view.

The Capitalization rate and factor can be viewed against existing cashflow data.



Pmt Begin	Pmt End	Pmt Dt	Pmt Amt	Notional	Rate	Capitalization Factor	Capitalization Rate	Interest Amt
		04/12/2011	-40.00					
04/12/2011	10/12/2011	10/12/2011	0.80	40.00	4.00000	1.0000000000	0.00000	0.80
10/12/2011	04/12/2012	04/12/2012	0.80	40.00	4.00000	1.0000000000	0.00000	0.80
04/12/2012	10/12/2012	10/12/2012	0.60	40.00	4.00000	1.0050136986	1.00000	0.60
10/12/2012	04/12/2013	04/12/2013	0.60	40.20	4.00000	1.0100249998	1.00000	0.60
04/12/2013	10/12/2013	10/15/2013	0.61	40.40	4.00000	1.0150889608	1.00000	0.61
10/12/2013	04/12/2014	04/14/2014	0.61	40.60	4.00000	1.0201505003	1.00000	0.61
04/12/2014	10/12/2014	10/14/2014	0.61	40.81	4.00000	1.0252652275	1.00000	0.61
10/12/2014	04/12/2015	04/13/2015	0.61	41.01	4.00000	1.0303775089	1.00000	0.61
04/12/2015	10/12/2015	10/13/2015	0.62	41.22	4.00000	1.0355435112	1.00000	0.62
10/12/2015	04/12/2016	04/12/2016	0.62	41.42	4.00000	1.0407354143	1.00000	0.62
04/12/2016	10/12/2016	10/12/2016	0.63	41.63	4.00000	1.0459533480	1.00000	0.63
10/12/2016	04/12/2017	04/12/2017	0.63	41.84	4.00000	1.0511687866	1.00000	0.63
04/12/2017	10/12/2017	10/12/2017	0.63	42.05	4.00000	1.0564390301	1.00000	0.63
10/12/2017	04/12/2018	04/12/2018	0.63	42.26	4.00000	1.0617067535	1.00000	0.63
04/12/2018	10/12/2018	10/12/2018	0.64	42.47	4.00000	1.0670298312	1.00000	0.64
10/12/2018	04/12/2019	04/12/2019	0.64	42.68	4.00000	1.0723503635	1.00000	0.64
04/12/2019	10/12/2019	10/15/2019	0.65	42.89	4.00000	1.0777268050	1.00000	0.65
10/12/2019	04/12/2020	04/13/2020	0.65	43.11	4.00000	1.0831302024	1.00000	0.65
04/12/2020	10/12/2020	10/13/2020	0.65	43.33	4.00000	1.0885606908	1.00000	0.65
10/12/2020	04/12/2021	04/12/2021	44.41	43.76	4.00000	1.0939885825	1.00000	0.65

5.30.2 Payment-In-Kind Accounting Events

Accounting Event	Description
ACCRUAL_BS	The component of the bought interest related to cash interest, i.e. coupon rate on the bond less any PIK interest.
ACCRUAL_BS_PIK	The bought interest that is related to the PIK interest.
ACCRUAL_PIK	Represents accrual of PIK interest.
ACCRUAL_REAL_PIK	For use in buy/sell trading in a PIK security. Liquidation results from accrued interest being realized.
ACCRUAL_INC_ REAL_PIK	Coupon payment occurrence for an non-liquidated security.

5.31 Specifying Re-Issue Bonds

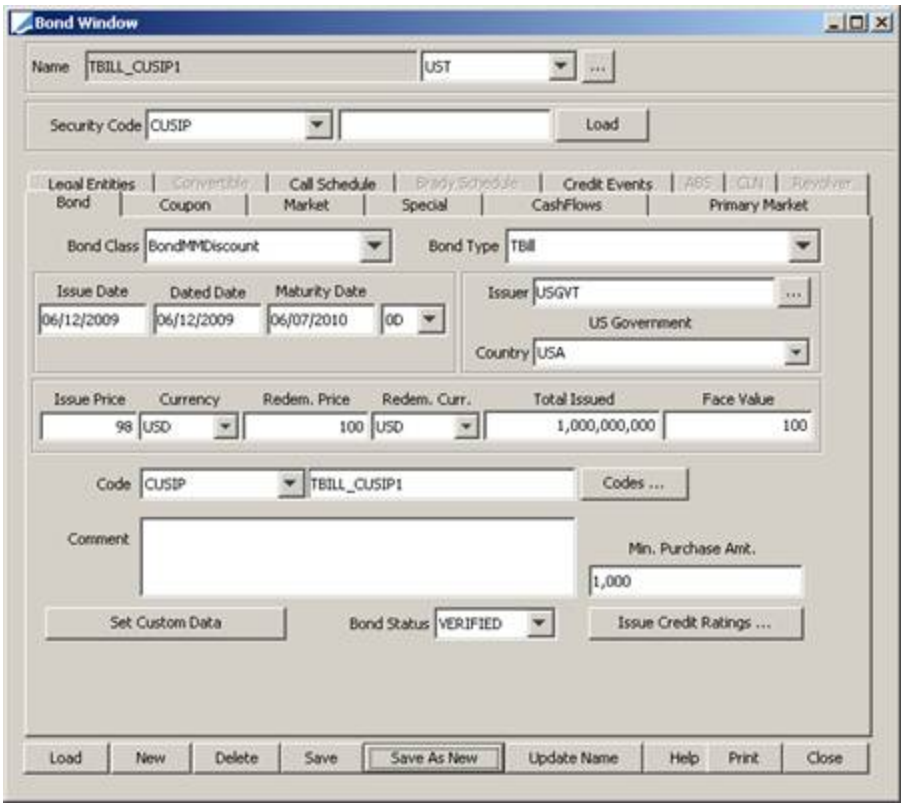
From time to time, securities may be re-issued. This is normal in the case of Treasury Bills, where the 12-month issue is usually re-issued when it is getting close to 6 months to maturity – the re-issue will be for a 6-month T-bill. T-bills are often re-issued again when they are 3 months to maturity. Coupon securities can also be re-issued at one or more points during their life.

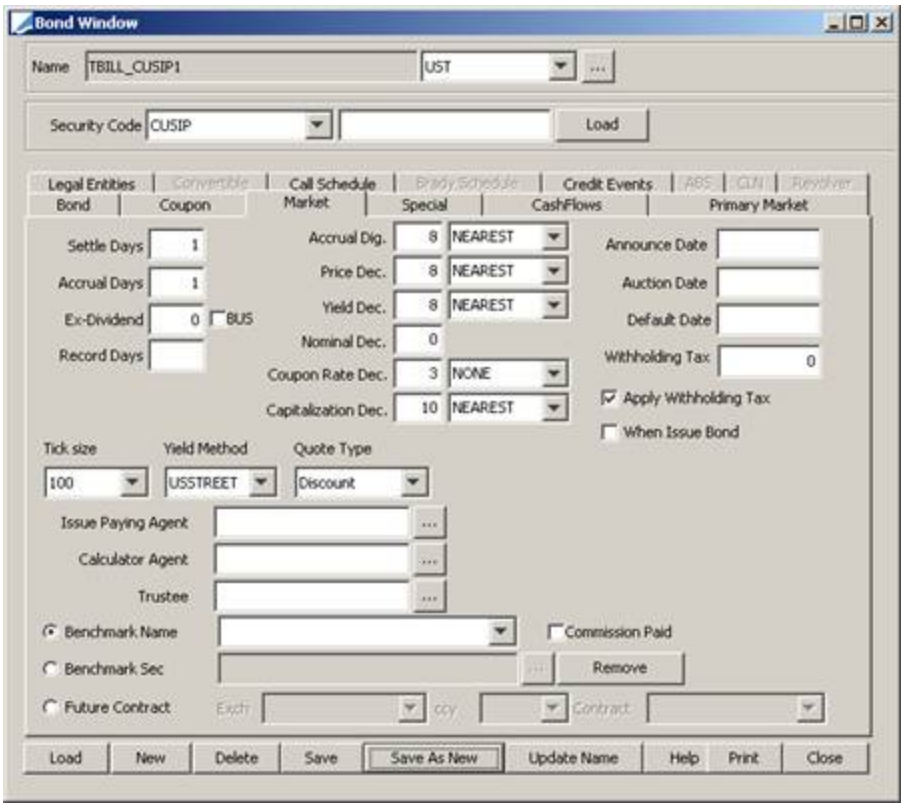
When a security is re-issued, the re-issue is traded as a separate security (having all the same attributes as the original security, but with a separate CUSIP) during the period from the re-issue announcement up to the date when the "regular" settlement date for the original security is the same as the re-issue date. At that time, the two securities are merged, and all trades in the re-issued security are modified to specify the original security.

[NOTE: Currently, Calypso assumes that this merge (often referred to as "assimilation") will take place at start of the business day PRIOR to the re-issue security's Issue date]

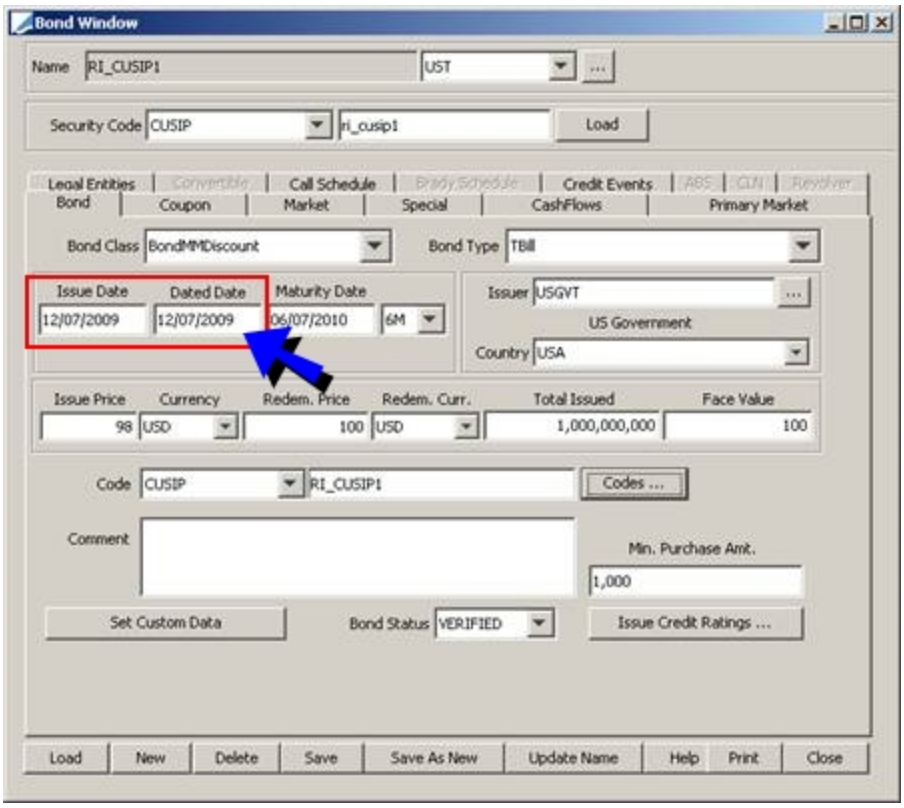
The characteristics of the re-issuance security are always identical to the original security, except for the issue date (and dated date) and CUSIP.

First, here is a typical configuration for a 12 month Tbill.





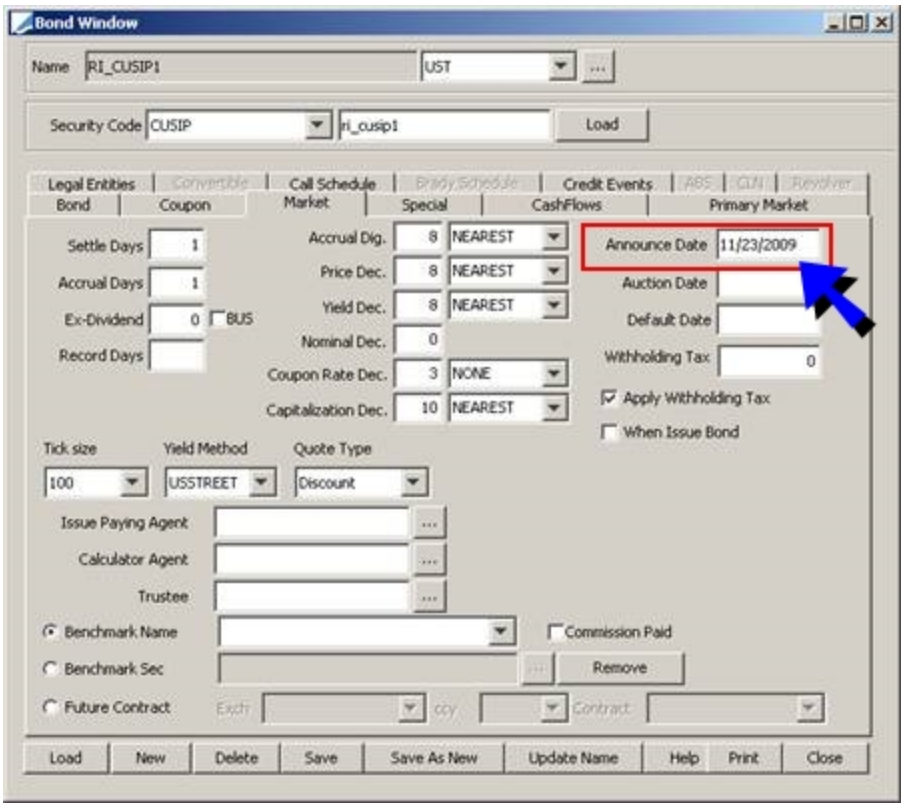
Suppose that this security is to be re-issued on 12/07/09. A NEW security must be created for the re-issuance. Here is the setup for the re-issuance security:



Note the new CUSIP.

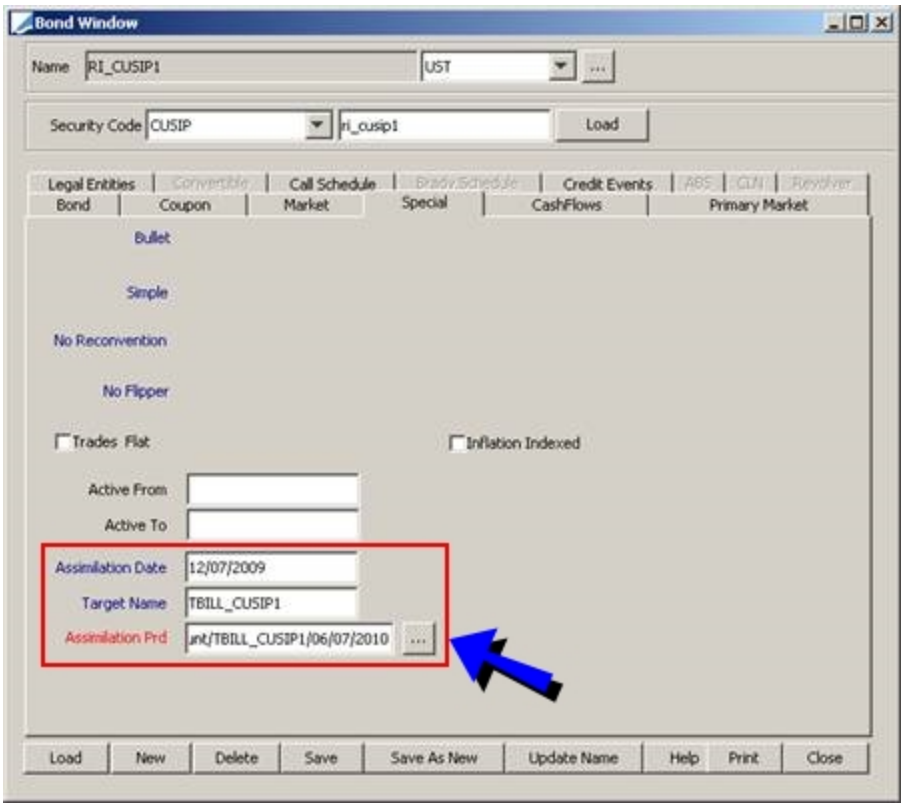
» Set the Issue Date and Dated Date to re-issuance date.

In the Market panel, set the Announce Date to the re-issuance announcement date.



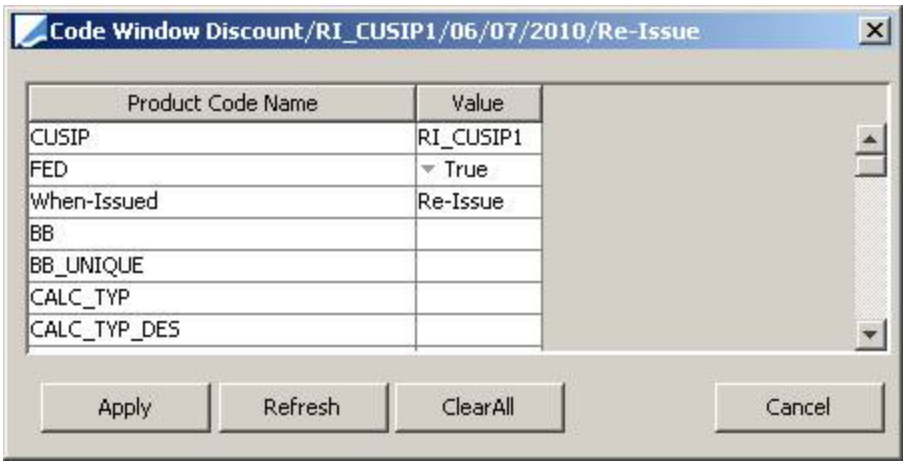
In the Special, panel, set the Assimilation Date to the re-issuance date.

[NOTE: The assimilation will actually take place at start of business ONE DAY PRIOR to the specified Assimilation Date]



» Select the security into which this re-issuance security will eventually be merged from the Assimilation Prd field.

Upon saving, the re-issuance security will have the value ‘Re-Issue’ in the Product Code field "When-Issued".



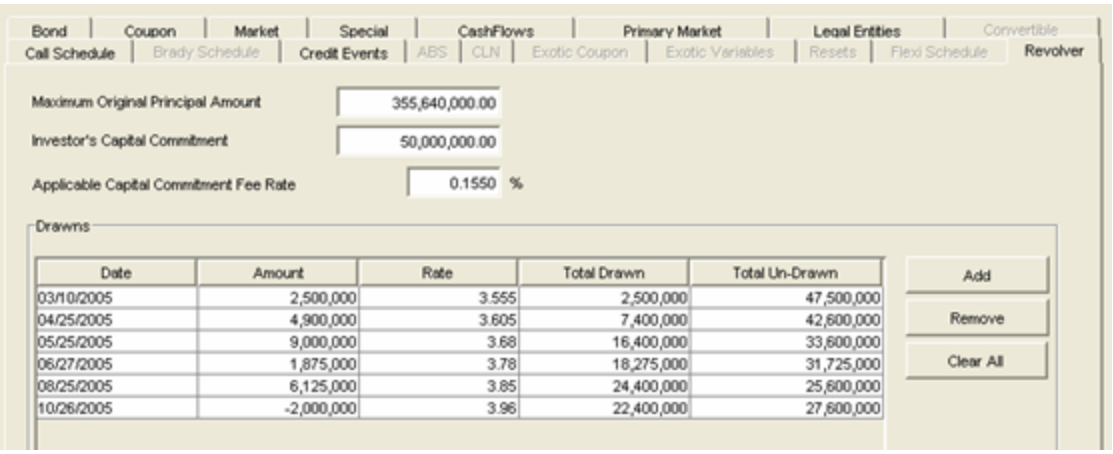
5.32 Specifying Revolver Bonds

5.32.1 Bond Panel

» The face value and total issue amount are set to 0. The drawns will generate cash transfers.

5.32.2 Revolver Panel

Select the Revolver panel to define the drawns.



» Enter the maximum principal amount, investor's commitment amount (trade amount), and fee rate.

» Then click **Add** to add a drawn row: date, drawn amount, and rate.

The rate on each drawn is the rate used to calculate the interest on the drawn amount. The bonds's coupon rate is only used when there is no drawn during a coupon period.

The drawns generate cash transfers through corporate actions. Note that the environment property USE_NEW_CA_LOGIC should be set to true. The corporate actions are automatically generated from revolver characteristics using the Generate panel in the Corporate Action window. Then they must be applied to the positions from the Apply panel. Note that two corporate action (CA) trades will be created: a CA trade between the book and the processing org to update the PL, and a CA trade between the book and the agent (nostro/custodian) to reflect the cashflows.

[NOTE: You need settlements instructions for the agent – The following engines need to be running: Transfer engine, Inventory engine, and Liquidation engine. You can check engine status from the Engine Manager of Web Admin: event subscription and engine parameters. Refer to Calypso Web Admin documentation for complete details]

5.32.3 Pricer Measures

The following pricer measures are specific to revolver bonds:

- ACCRUAL_DRAWN – The value of the drawn part of the coupon on val date.
- ACCRUAL_UNDRAWN – The value of the undrawn part of the coupon on val date.

- FACILITY_AMOUNT – Investor's capital commitment (must be added using **Configuration > System > Add Pricer Measure** with the class `tk.pricer.PricerMeasureBondRevolver`).
- DRAWN_AMOUNT – Total drawn amount available at value date (must be added using **Configuration > System > Add Pricer Measure** with the class `tk.pricer.PricerMeasureBondRevolver`).
- UNDRAWN_AMOUNT – Total undrawn amount available at value date (must be added using **Configuration > System > Add Pricer Measure** with the class `tk.pricer.PricerMeasureBondRevolver`).

Also, the following pricer measures are calculated differently for revolver bonds:

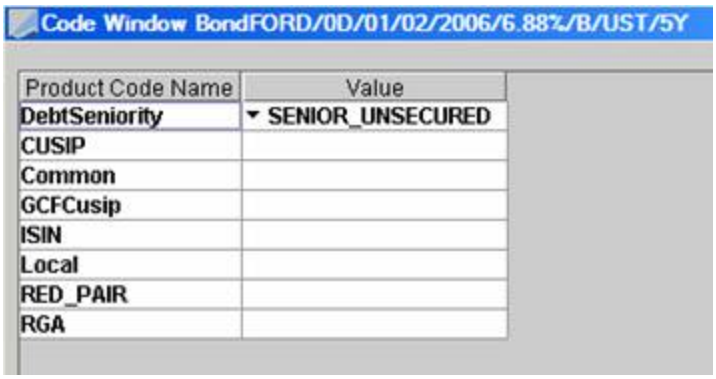
- ACCRUAL_FIRST = ACCRUAL_DRAWN + ACCRUAL_UNDRAWN (with or without an additional day based on pricing parameter ACCRUAL_FIRST)
- ACCRUAL = ACCRUAL_DRAWN + ACCRUAL_UNDRAWN

The following pricing parameters must be set to true: BOND_FROM_QUOTE and BV_ALTERNATE.

5.33 Specifying Risky Bonds

Risky bonds are usually any corporate bonds set up as a benchmark over a reference bond, and quoted in spread. You can price risky bonds off credit curves. The default probability implied by the CDS spreads is taken into account for this.

In the Bond panel, click **Codes** and select the bond's seniority in the DebtSeniority code.



In the Market panel, set up the bond as a benchmark over another bond.

When capturing a trade on this bond, the probability curve for the bond's issuer will be loaded from the pricing environment if any.

The following pricer measures can be computed for a risky bond:

- Z_SPREAD – The static spread over the Zero curve which makes the Theoretical Price equal to the Market Price (Price from Quotes). In the above example, if 117.515 bp are added to the Zero curve, the Theoretical price 100.59306 will become 98.027.
- PV01_CREDIT – The spread sensitivity. The spread is increased by 1bp and the change in NPV is calculated.

  If BOND_FROM_QUOTE = Yes. The spread quote is bumped by 1bp, and the difference in NPV is the PV01_CREDIT.

  If BOND_FROM_QUOTE = No. The discount curve is shifted 1bp and the difference in NPV is the PV01_CREDIT.

  For a fixed rate bond, the PV01 will be the same as PV01_CREDIT. For a floating rate bond, the PV01 will be close to 0 (no interest rate sensitivity for a FRN).
- Theoretical Price – The Price using the curve.
- Notional Equivalent – This is defined as Notional * Modified Duration / Modified Duration (Benchmark). The modified duration of benchmark is set up using the Global Parameters.
- Default Exposure – This is relevant for Risky Bonds (Corporate Bonds) and CDS. It measures the amount of money we lose in case of default. A positive number indicates a Loss and a negative number indicates a profit. The definition of Default Exposure is for Bonds: NPV (Market Value), and for CDS: NPV (Market Value) + Notional.
- CDS_SPREAD – This used to calculate the CDS level if the Bond is to be hedged with a CDS. If the bond uses a probability curve generated from CDS spreads, it calculates the break-even spread for the (hypothetical) CDS underlying the curve with the same maturity date as the bond. The CDS is priced using the probability curve in the PricerConfig associated with that CDS, which is usually (but not forced to be) the same as the probability curve of this bond.

5.34 Specifying Russian Bonds

Russian bonds use specific rounding rules for calculating accrued interest. Two methods, "Pro-Rata" and "MICEX", are used with PricerBondGeneric to calculate this requirement properly.

The "Pro-Rata" method for calculating is accrued interest is:

1. CPN_Rate/100 * Face_Amt * Factor * Num_Total_Period_Days/365(or 366) = CPN_Amt_Full_Period
2. Round CPN_Amt_Full_Period to 2 decimals to produce RD_CPN_Amt_Full_Period
3. RD_CPN_Amt_Full_Period * Num_Days_Accrual/Num_Days_in_Full_Period = Raw_Accrual
4. Round Raw_Accrual to 2 decimals to produce RD_Accrual
5. RD_Accrual * Quantity = Accrued Interest
6. Round Accrued Interest to 2 decimals to produce the final result.

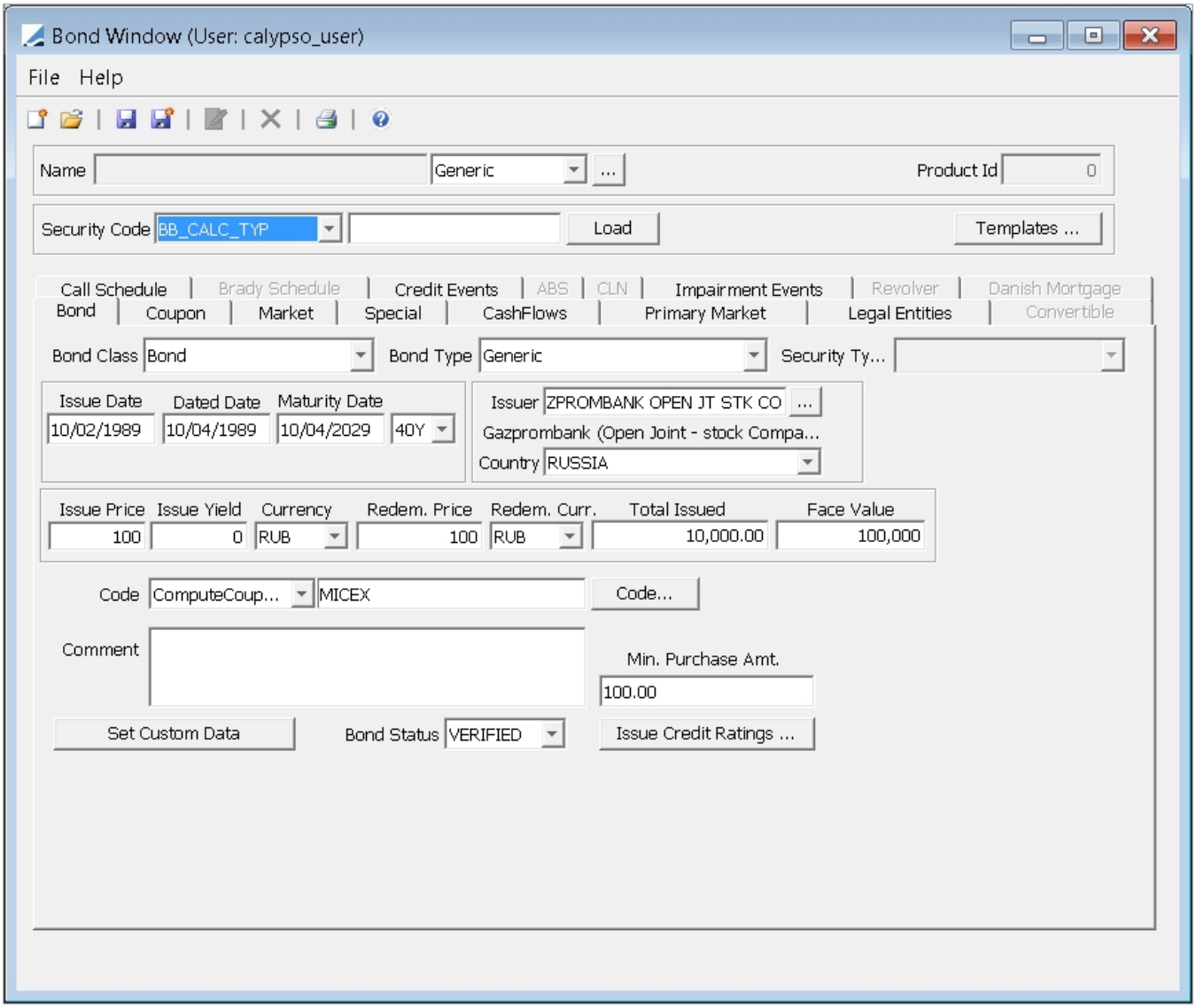
The "MICEX" method for calculating the accrued interest is:

1. CPN_Rate/100 * Face_Amt * Factor * Num_Days_Accrual /365(or 366) = Raw_Accrual

2. Round Raw_Accrual to 2 decimals to produce RD_Accrual
3. RD_Accrual * Quantity = Accrued Interest
4. Round Accrued Interest to 2 decimals to produce the final result.

Either method is set on the bond product using the security code "ComputeCouponPerQty". When the sec code is set to false or left blank, the special coupon per face rounding for Russian bonds will not be applied to the coupon amount of the accrued interest.

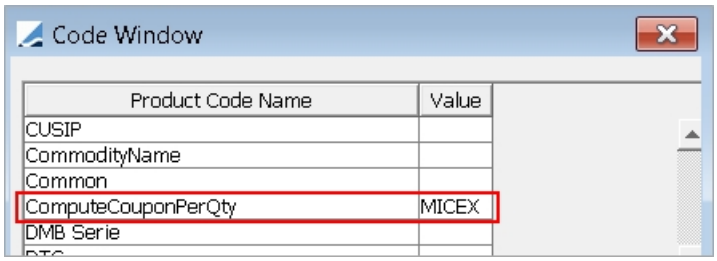
For correct calculation with the appropriate rounding and precision, set the Coupon Rate Decimals to 2 and NEAREST on the Market panel of the bond product. Accrual digits should be set to 2 more than the number of digits in the total issued amount of the bond or any lager number.



Sample Russian Bond definition

- Select 'Bond' for the Bond Class.
- Select 'Generic' for the Bond Type.
- Select 'ComputeCouponPerQty' in the Code drop down.
- Enter 'Pro-Rata' or 'MICEX' for the Code value *OR*

  Click the **Code...** button and enter the value for 'ComputeCouponPerQty' in the Code Window, then click **Apply**.



Russian Inflation Bond Accrued Interest

PricerBondRussian is used for Russian inflation bonds. It has a specific calculation method for accrued interest.

▶ Refer to the *Calypso Bond Analytics Guide* for details.

5.35 Specifying Taiwanese Bonds

Some Taiwanese TCB bills are set to mature on non-business days, in which case the principal payment rolls forward to the next business day. These bills must be priced using the principal payment date, not the maturity date. A dedicated pricer and security code allow for this calculation.

Taiwanese money market bond trades can be captured using the Bond (Custom) Trade window.

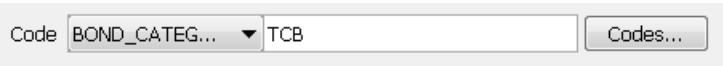
▶ See Capturing Taiwanese Money Market Bond Trades for details.

5.35.1 Security Codes

In the bond definition Bond panel, you can set several product codes that are specific to Taiwanese bonds.

BOND_CATEGORY

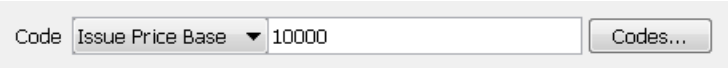
Set the BOND_CATEGORY product code to "TCB" to identify the bond as a TCB bond.



Issue Price Base

You can specify a different base to use for Issue Price and Redemption Price using the product code "Issue Price Base". If left blank, the default is base 100.

Example: Taiwanese bills are entered in base 10,000.

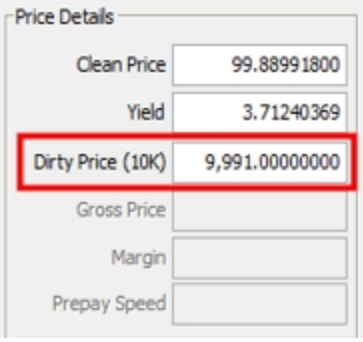


TAIWAN

You can set the product code TAIWAN to true to enable the "Dirty Price (<base>)" field in the Bond (Custom) Trade window.

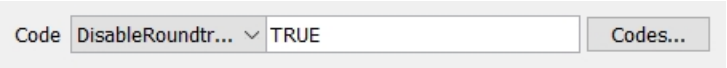
The "Dirty Price (<base>)" field displays the Dirty Price in the base specified in the Issue Price Base product code.

Example: If Issue Price Base = 10,000, the field will display "Dirty Price (10K)". If Issue Price Base = 100,000, the field will display "Dirty Price (100K)".



Disabling Round-trip Pricing

For Taiwanese bonds, if desired, you can set the product code DisableRoundtripPricing to TRUE to disable the Dirty Price field and prevent round-trip pricing.



[NOTE: DisableRoundtripPricing was designed for the Taiwanese market and it is not recommended for use on other bonds]

5.35.2 Pricer

Ensure that the pricer PricerBondTCB is used for TCB bonds. When the maturity date falls on a non-business date, the principal payment date will be considered when doing the day difference. As a result, price to yield or discount, or

yield to discount or price will change accordingly.

5.35.3 Pricer Measures

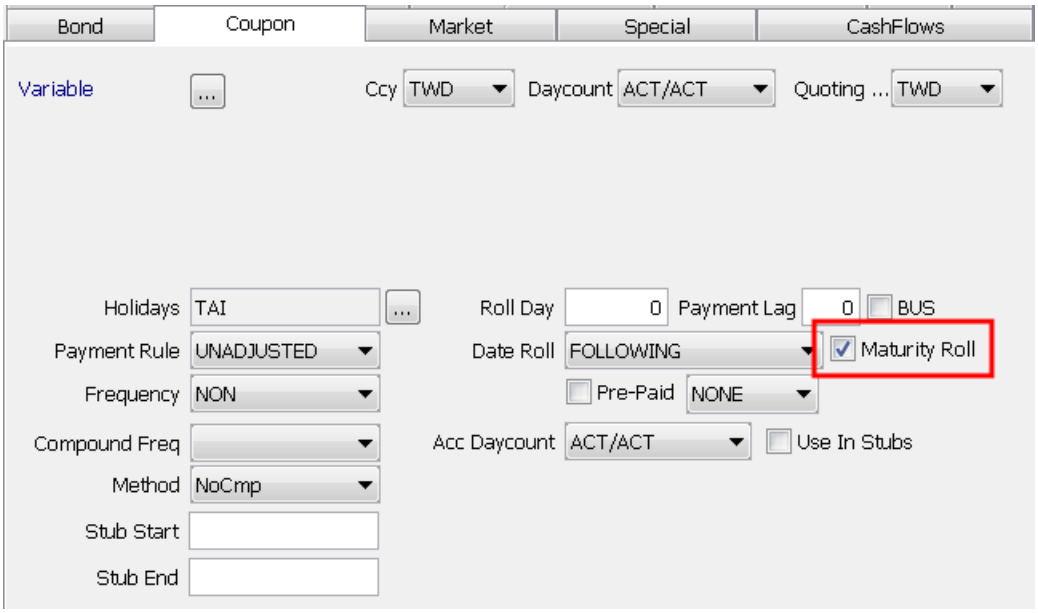
The pricer measures DIRTY_PRICE_SCALED and TRADE_DIRTY_PRICE_SCALED allow displaying these prices in a different base as they are controlled by the Issue Price Base product code.

▶ See " Issue Price Base" above for details.

Pricer Measures	Description
DIRTY_ PRICE_ SCALED	Class `tk.pricer.calculators.PricerMeasureBond`. Per local market practice, the face value for a TWN bill should set up with 100,000, while the price base for the same bill should be in 10,000. The base is controlled by the Issue Price Base product code. If Issue Price Base = 10,000, then: **DIRTY_PRICE_SCALED = DIRTY_PRICE * 100**
TRADE_ DIRTY_ PRICE_ SCALED	Class `tk.pricer.calculators.PricerMeasureBond`. Per local market practice, the face value for a TWN bill should set up with 100,000, while the price base for the same bill should be in 10,000. The base is controlled by the Issue Price Base product code. While DIRTY_PRICE_SCALED is the market price, i.e. the market quote on valuation date, TRADE_ DIRTY_PRICE_SCALED is the price of the original trade, i.e. what you paid for the bond. It does not change over time.

5.35.4 Maturity Roll

The "Maturity Roll" flag allows specifying which date is used to calculate the price. When checked, the maturity principal payment Pmt Dt is used to calculate the price. If not checked, the maturity principal payment Pmt End is used to calculate the price.



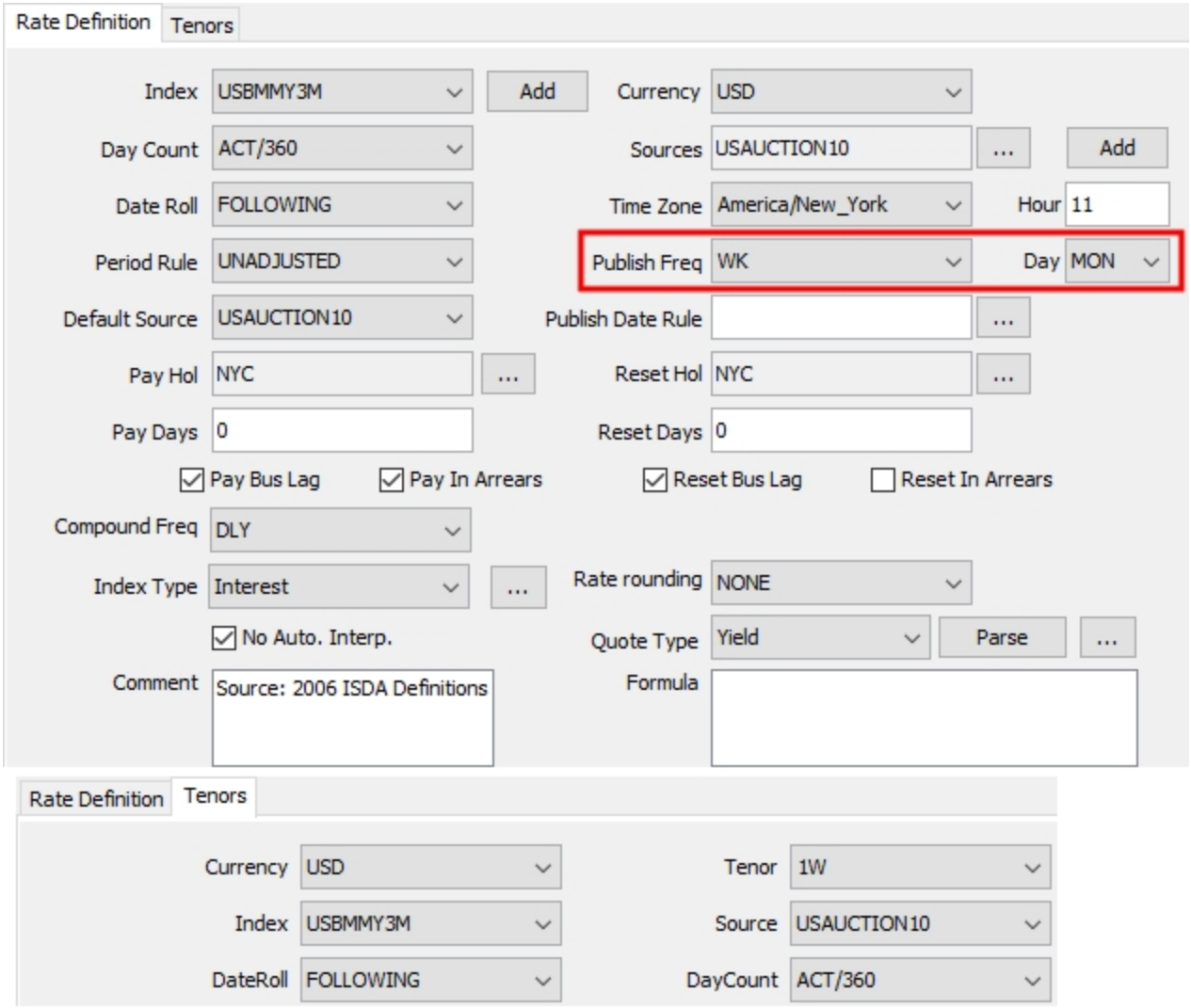
5.35.5 Withholding Tax

▶ See Withholding Tax Generation.

5.36 Specifying US Treasury Floating Rate Notes

United States Treasury floating rate notes (UST FRNs) are issued for a term of two years and pay varying amounts of interest quarterly until maturity. Interest payments rise and fall based on discount rates in auctions of 13-week Treasury bills.

5.36.1 Rate Index Definition



[NOTE: No index calculator is needed]

5.36.2 Quotes

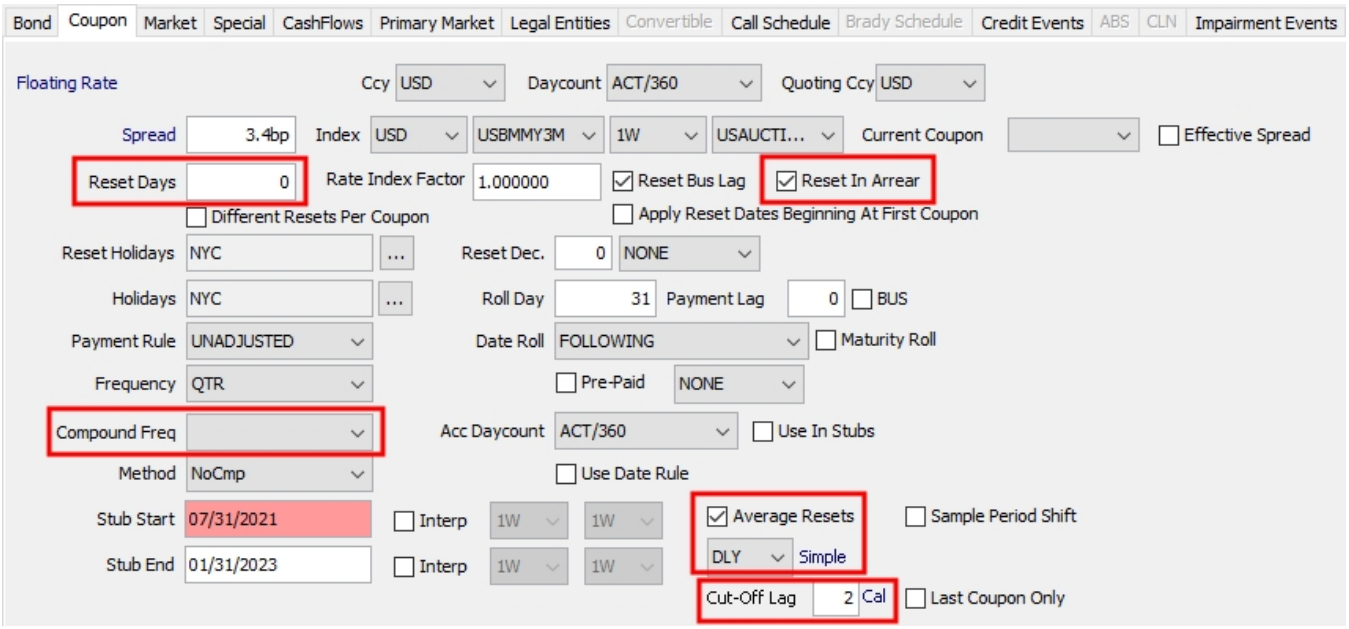
Quotes are published weekly on Mondays, effective the following business day. The quote published on Monday must be populated on the next business day through the following Monday.

In the example below, the quote of 0.1100305950 published on Monday, May 4 is populated in Calypso from Tuesday, May 5 through Monday, May 11.

Date	Quote Name	Quote Type	Bid	Ask	Open	Close
05/04/2022	MM.USD.USBMMY3M.1W.USAUCTION10	Yield				0.1200364110
05/05/2022	MM.USD.USBMMY3M.1W.USAUCTION10	Yield				0.1100305950
05/06/2022	MM.USD.USBMMY3M.1W.USAUCTION10	Yield				0.1100305950
05/07/2022	MM.USD.USBMMY3M.1W.USAUCTION10	Yield				0.1100305950
05/08/2022	MM.USD.USBMMY3M.1W.USAUCTION10	Yield				0.1100305950
05/09/2022	MM.USD.USBMMY3M.1W.USAUCTION10	Yield				0.1100305950
05/10/2022	MM.USD.USBMMY3M.1W.USAUCTION10	Yield				0.1100305950
05/11/2022	MM.USD.USBMMY3M.1W.USAUCTION10	Yield				0.1100305950

5.36.3 Coupon Panel

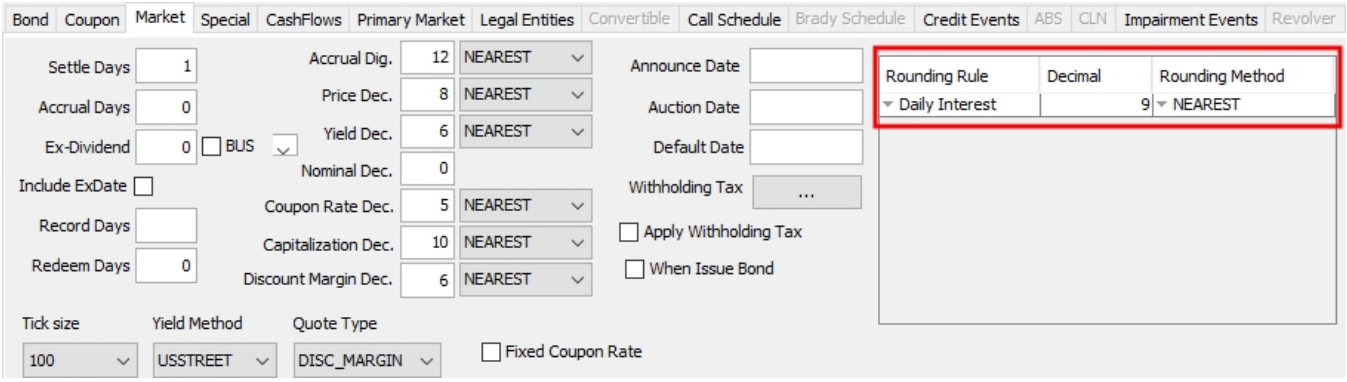
Select the Coupon panel.



- Set Reset Days to 0 if the quotes published on Mondays are entered on Tuesdays (as described above), or set to 1 if the quotes published on Mondays are entered on Mondays (the same day). In the latter case, setting Reset Days = 1 tells the system to pick the observed index value one day before for any given day.
- Check the "Reset In Arrear" checkbox as the final coupon rate for the period is not known in advance.
- Check the "Average Resets" checkbox and specify the reset sampling frequency details as shown above. Averaging and compounding cannot be used together on UST FRNs.
- In the Cut-Off Lag field, enter the number of lockout days.

5.36.4 Market Panel

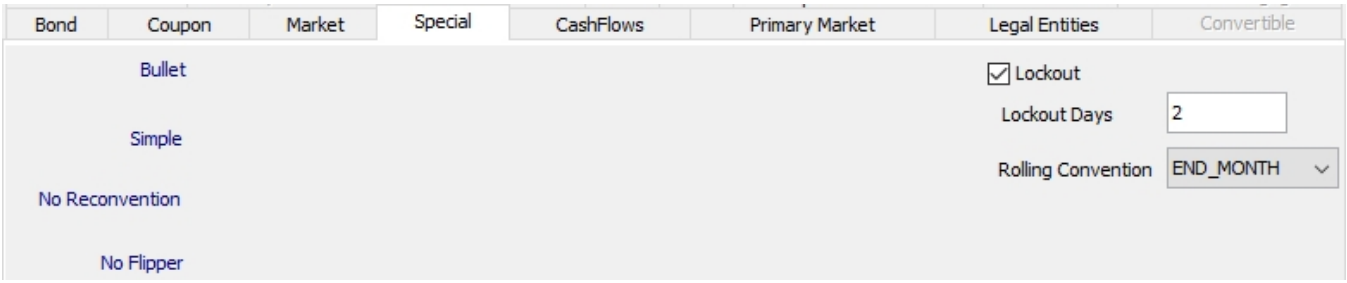
Select the Market panel.



» Configure the Daily Interest rounding rule as shown above. The rounding is applied to each calendar day. Note that the samples table will continue to show aggregated numbers on non-business days but the rounding will be applied to each calendar day behind the scenes.

5.36.5 Special Panel

The Floor feature is not supported on UST FRNs.



5.36.6 Pricing

These bonds have a specific pricer, PricerBondUSTFRN, which supports the lockout and reopening functionality. All price and accrual calculations are based on the valuation date.

The pricing parameter FORECAST_FROM_CURVE must be set to false.

Added flooring functionality to UST FRN Bonds to floor the negative rates and extended the support to cash flow interest calculation.

5.37 Specifying When-Issue Bonds

The lifecycle of every Treasury coupon security begins with the announcement of the security (announcement date), the subsequent auction of the security (auction date), and the subsequent issuance of the security (issue date). During the period between the announcement date and the auction date, Treasury Coupon securities are considered

to be in 'when-issued' (WI) status. At that time, no coupon rate is defined for the security and the Yield to Price calculation will be done using an "expected coupon rate".

You need to add "When-Issued" to the available product codes as a string using **Configuration > Product > Code**.

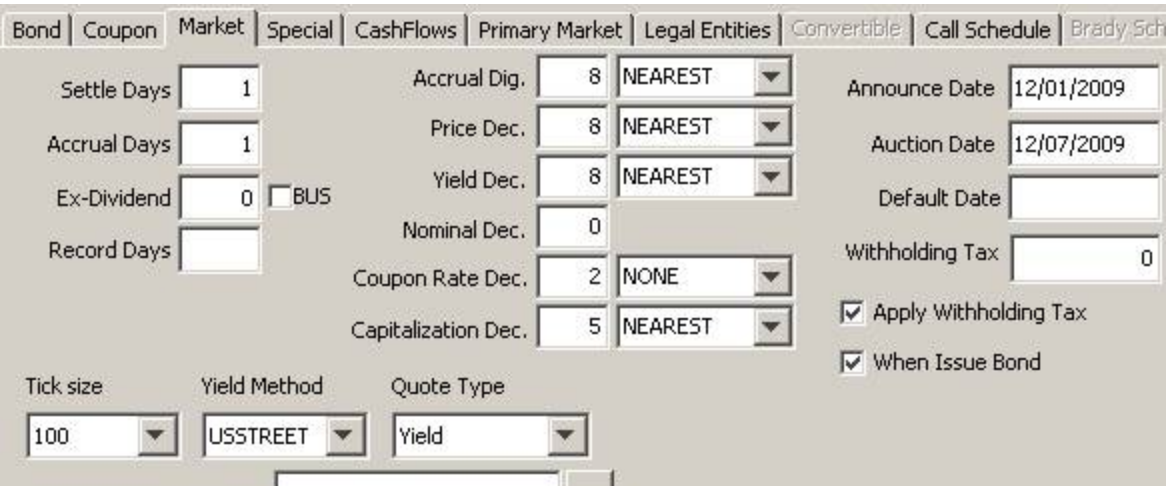
You can create Bond products as well as BondMMInterest products that you will trade as WI.

The system will recognize that the Bond is WI if the issue date is after the Announce Date and the Auction Date. Note that the Auction Date must be before the current date.

In the Coupon panel, leave the Coupon rate field empty as shown below.

Select the Market panel, and set the following information:

- Enter the Announce Date and the Auction date as shown below.
- Specify "Quote Type" as Yield.
- Check the "When Issue Bond" checkbox.



When you save the Bond, the system automatically set the product code "When-Issued" = "When-Issued".

Upon saving, the system also creates the Bond name with "When-Issued" attached to it, and creates a special quote for the Expected Coupon rate. This quote should be entered for each date from the Announcement Date up to (and

including) the Auction date, or this can be propagated automatically each day using the PROP_RATE_1BUSDAY scheduled task.

▶ See Capturing When-Issue Bond Trades for details.

6. Withholding Tax Generation

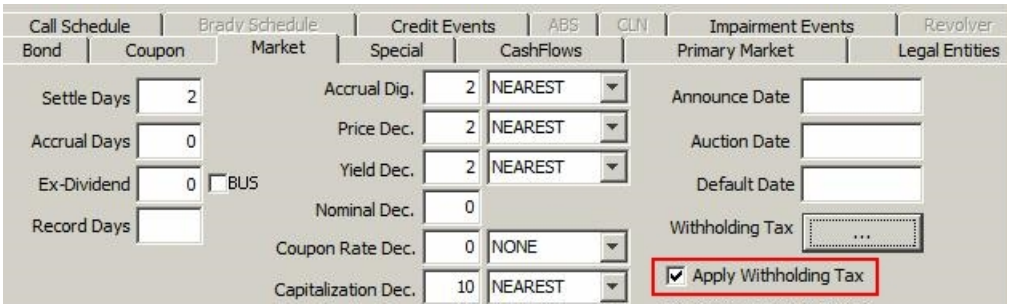
When you set the environment property SEC_WITHHOLDINGTAX=true, the withholding tax will be automatically withdrawn from the coupons, and reclaim fees will be automatically generated.

The setup is described below.

6.1 Bond Definition

Bonds are defined using **Configuration > Fixed Income > Bond Product Definition**.

In the Bond Definition window, select "Apply Withholding Tax" in the Market panel.



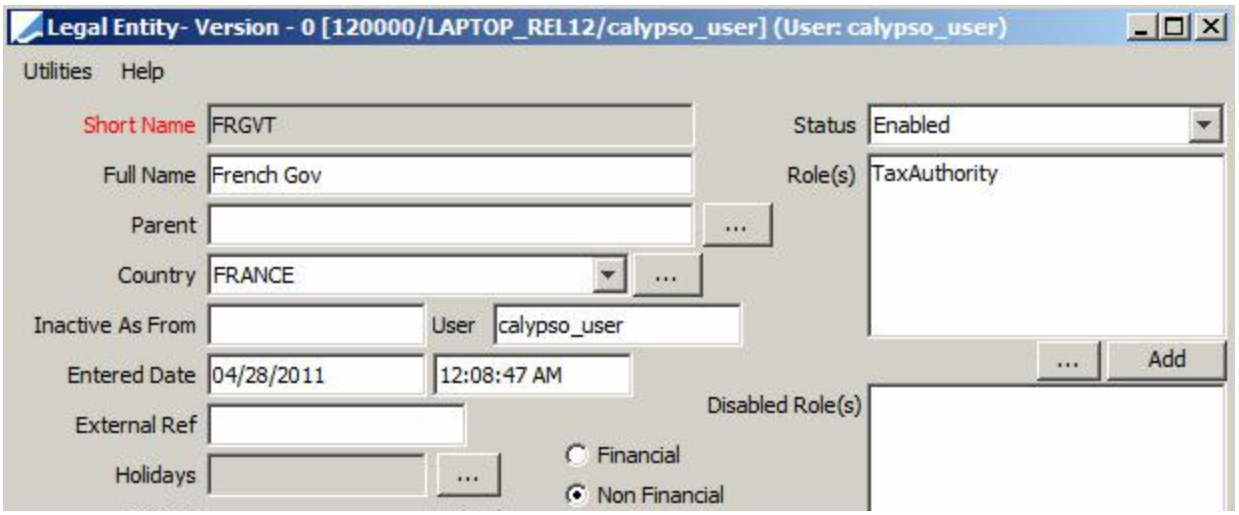
» You can click ... next to the Withholding Tax field to set up the withholding tax rates and reclaim rates per bond's country (country paying income) and position holder's country (country receiving income). It brings up the Withholding Tax Config window.

The Withholding Tax Config window can also be accessed from **Configuration > Fees, Haircuts, & Margin Calls > Withholding Tax Config**.

▶ See Withholding Tax Rates Configuration for details.

6.2 Tax Authority Setup

You need to define a legal entity of role TaxAuthority that will receive the reclaim fee if any.



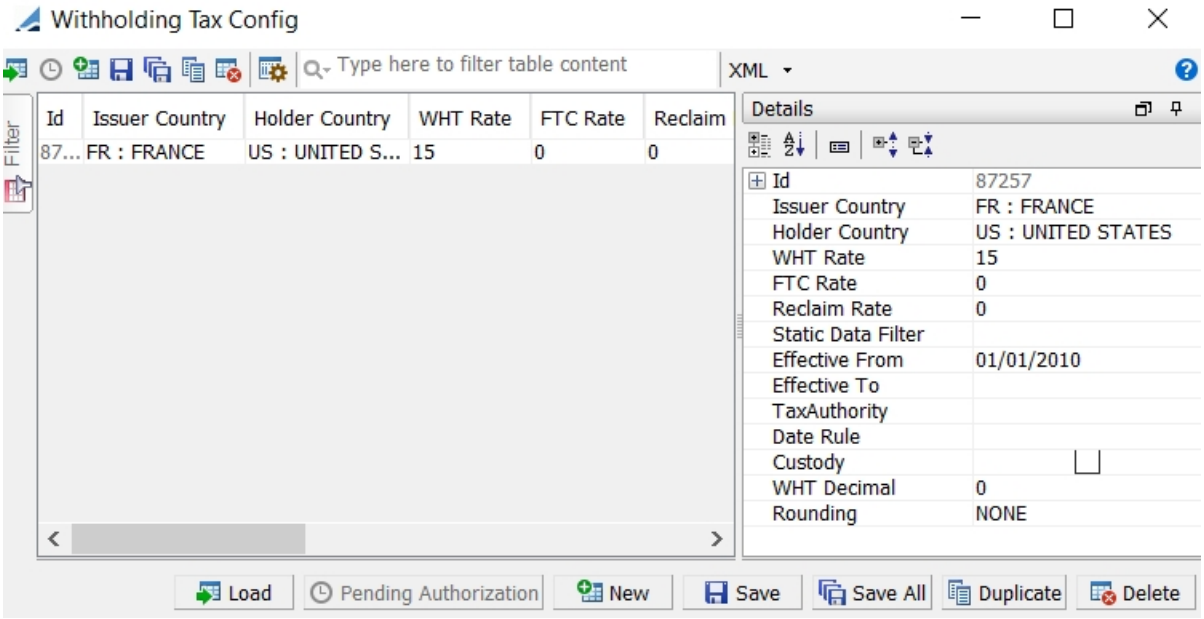
6.3 Processing Org Setup

A processing org could be exempt from paying the withholding tax.

Set the legal entity attribute IsExempt=Yes to exempt the processing org.

6.4 Withholding Tax Rates Configuration

The Withholding Tax Config window can be accessed from **Configuration > Fees, Haircuts, & Margin Calls > Withholding Tax Config**, or by clicking ... next to the Withholding Tax field in the Market panel of the Bond Definition window.

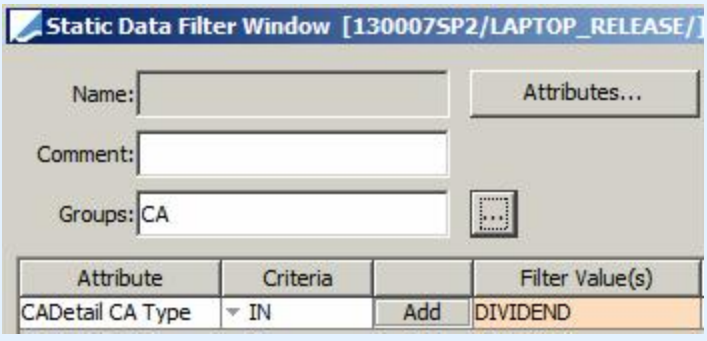


» Click **New** to add a new configuration, and enter the details in the Details area. The details are described below.

» Then click **Save** to save your changes. You can specify multiple rates for the same issuing country using static data filters to determine the context of application of the rates.

Note that if the Authorization mode is enabled, an authorized user must approve your entry, provided that "WithholdingTaxConfig" has been added to the *classAuthMode* domain.

Details

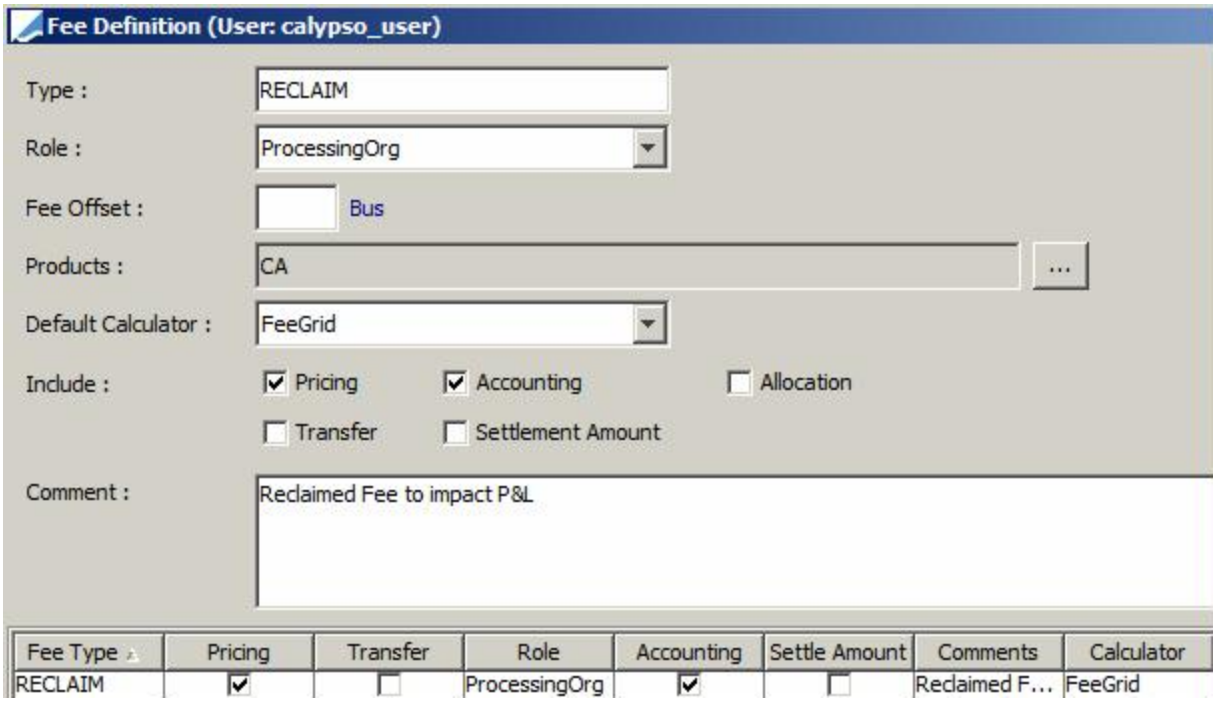
Fields	Description
Id	The ID is unique to each configuration. The system generates the ID when the configuration is saved.
Issuer Country	Select the country of the bond.
Holder Country	Select the country of residence of the processing org that purchased the bond.
Rate	Enter the withholding tax rate. The withholding tax amount will be withdrawn from the coupon amount when the corporate actions are generated.
Reclaim Rate	Enter the reclaim rate if applicable. The reclaim fee will be generated on the internal coupon CA for P&L impact, and on the agent coupon CA for payment to the Tax Authority.
Static Data Filter	Select a static data filter if applicable. This is mostly needed if you have multiple rates for the same issuer country. You can also use the static data filter to restrict the corporate actions to which the withholding tax is applied. The static data file must be defined with Groups = CA and must contain CA-related attributes. 
Effective From Effective To	Select a start date and end date for the configuration. This applies if the rates change on a certain date.
TaxAuthority	Select the legal entity that will receive the reclaim fee if any - This is only used when a

Fields	Description
	Reclaim Rate is set.
Date Rule	Select the date rule that determines the payment frequency of the reclaim fee if any - This is only used when a Reclaim Rate is set.
Custody	If Custody is checked, the CA process, when calculating the net interest amount, checks if the CA trade book has the attribute "Custody Book" set to true. If so, it selects the WHT config (if any) where the Holder Country is the CA trade's client/counterparty country. If Custody is not checked, the Holder Country is the country of the PO.
WHT Decimal	Enter the number of decimal places to round the withholding tax amount as needed.
Rounding	Select the rounding method for the withholding tax amount as needed.

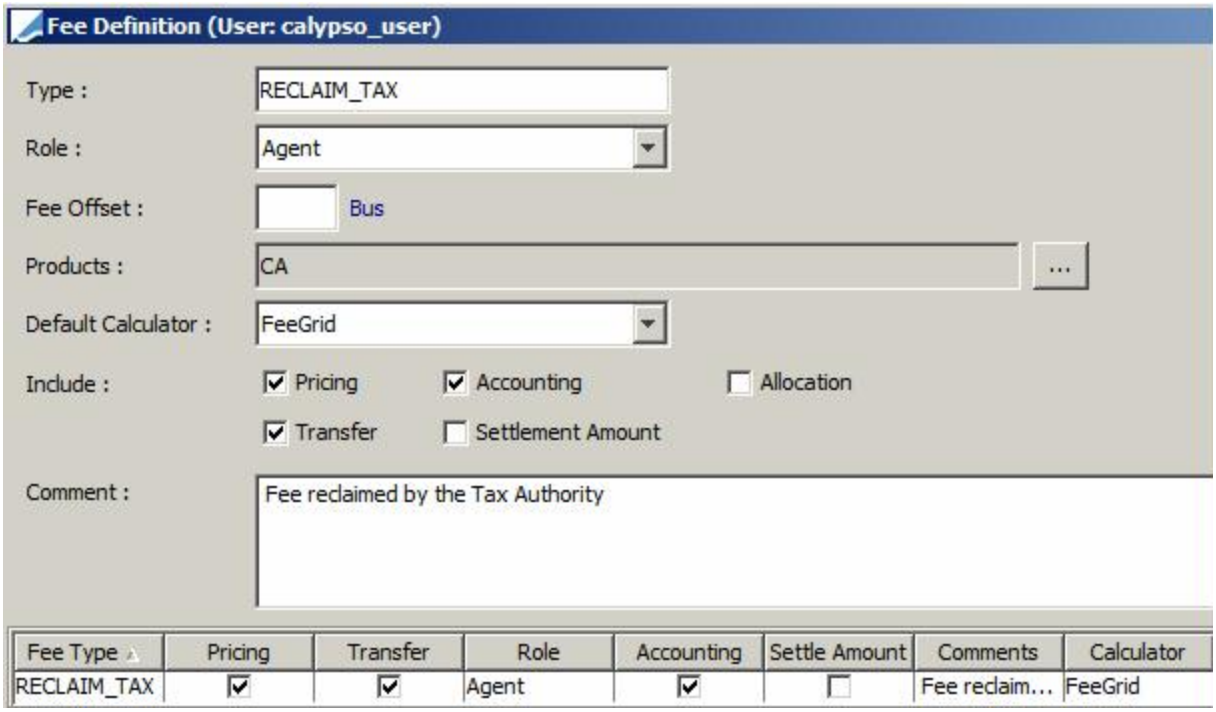
6.5 Fee Definition

Reclaim fees are defined using **Configuration > Fees, Haircuts, & Margin Calls > Fee Definition**.

There is one fee for the PO to impact the P&L on the internal CA trade: It must be named RECLAIM.



There is another fee for the Tax Authority to generate a transfer on the Agent CA trade: It must be named RECLAIM_TAX.



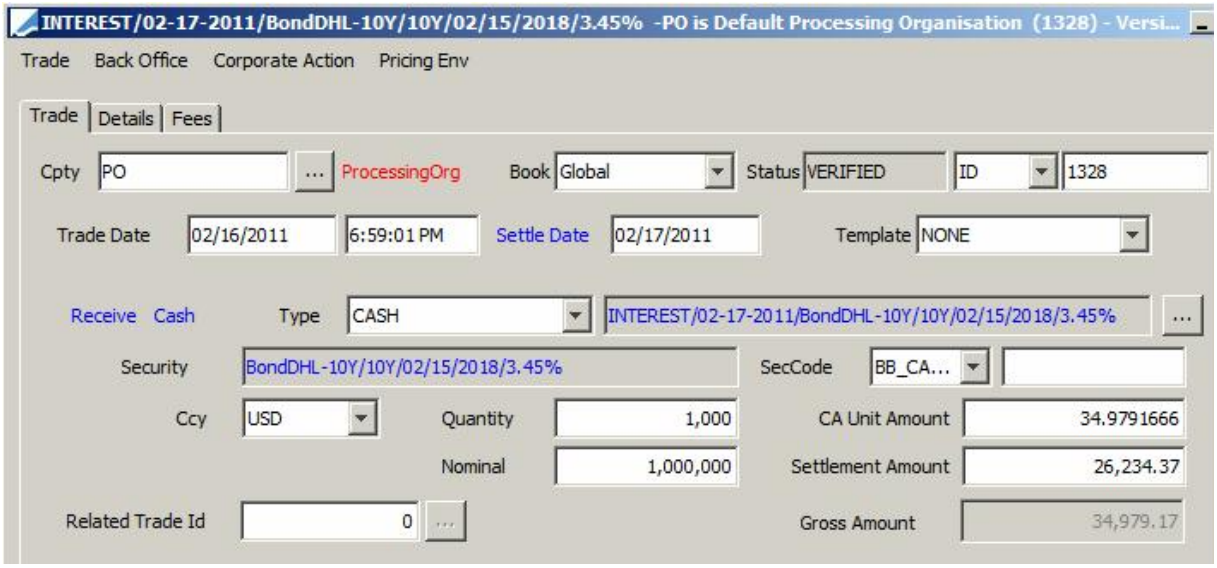
[NOTE: You don't need to actually define a fee grid; they will use the Withholding Tax Rates Config]

6.6 Corporate Action Generation

From the Calypso Navigator, navigate to **Trade Lifecycle > Corporate Action > Corporate Action**.

Generate a coupon on the bond.

Internal Trade (for P&L impact purposes)

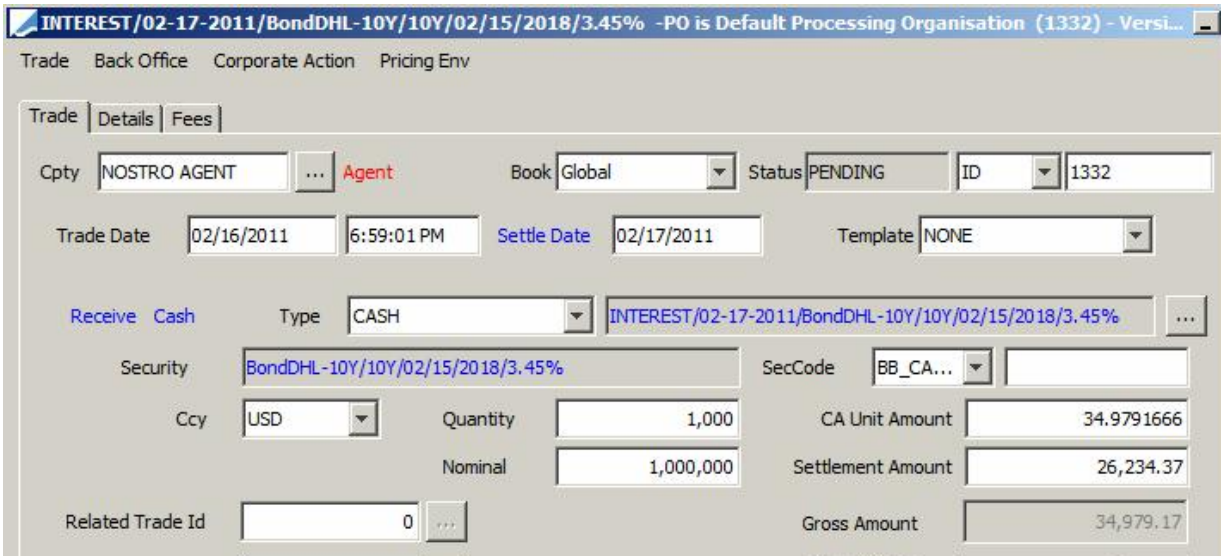


The Gross Amount shows the full coupon, and the Settlement Amount shows the coupon reduced by the withholding tax.

In the Fees panel, you can see the reclaim fee.

Type	Date	Start Date	End Date	Currency	Amount	Legal Entity
RECLAIM	02/28/2011	02/17/2011	02/28/2011	USD	3,497.92	Default Processing Organisation

Agent Trade



Similarly, the Gross Amount shows the full coupon, and the Settlement Amount shows the full coupon reduced by the withholding tax.

In the Fees panel, you can see the reclaim fee paid to the tax authority.

Type	Date	Start Date	End Date	Currency	Amount	Legal Entity
RECLAIM_TAX	02/28/2011	02/17/2011	02/28/2011	USD	3,497.92	French Gov

If the settlement of the agent trade fails, a CA claim trade is generated with the Counterparty instead of the Agent trade.

You can use the domain *applyWHTClaimSameCountry* to manage the application of Withholding Tax in case of CA claim trade generated by a failed transfer:

- If the domain is not configured, WHT is applied on CA trade with Counterparty.
- If the domain contains Value = true, WHT is applied on CA trade with Counterparty only if issuer's country = holder's country.
- If the domain contains Value = false, no WHT is applied on CA trade with Counterparty.

6.7 Accounting Setup

The following accounting events allow generating postings for the WHT:

- WHT Amount = Quantity * CA Unit Amount * WHT Rate
- Net WHT Amount = Quantity * CA Unit Amount * (WHT Rate - Reclaim Rate)
- Full Coupon = Quantity * CA Unit Amount
- Refund Amount = Quantity * CA Unit Amount * Reclaim Rate

Accounting Events	Dates	Amount	Triggering Events	Properties
FULL_COUPON To book the amount of the full coupon in case of WHT (coupon corporate action). If there is no WHT, FULL_COUPON = INTEREST.	**Booking Date** - Today or coupon payment date, whichever is later **Effective Date** - Coupon end date	Full Coupon amount to be paid by agent	LIQUIDATED_POSITION UNLIQUIDATED_POSITION	**Retroactivity** - FULL **Booking Type** - N/A **Event Class** - BALANCE **Event Property** - NONE
NET_WITHHOLDINGTAX To book the amount of the withholding tax amount less	**Booking Date** - Today or coupon payment date, whichever is later	Full coupon amount * (WHT rate – Reclaim	LIQUIDATED_POSITION UNLIQUIDATED_	**Retroactivity** - FULL **Booking Type** -

Accounting Events	Dates	Amount	Triggering Events	Properties
the reclaim amount.	**Effective Date** - CA trade settle date	rate)	POSITION	N/A **Event Class** - REALIZED **Event Property** - NONE
WITHHOLDINGTAX To book the WHT tax amount to be deducted.	**Booking Date** - Today or coupon payment date, whichever is later **Effective Date** - Coupon end date	WHT amount = Full coupon * WHT rate	LIQUIDATED_POSITION UNLIQUIDATED_POSITION	**Retroactivity** - FULL **Booking Type** - N/A **Event Class** - BALANCE **Event Property** - NONE
RECLAIM_TAX To book the tax amount to be reclaimed.	**Booking Date** - Today or coupon payment date, whichever is later **Effective Date** - CA trade settle date	Full coupon amount * Reclaim rate	LIQUIDATED_POSITION UNLIQUIDATED_POSITION	**Retroactivity** - FULL **Booking Type** - N/A **Event Class** - REALIZED **Event Property** - NONE

6.8 Prepaid Withholding Tax and Tax Allowance

Withholding tax can also be prepaid on the trades by the counterparty.

This requires the following setup.

6.8.1 Counterparty Setup

The withholding tax rate is based on counterparty and the bond's country.

You need to define the following legal entity attributes:

LegalEntityTaxRate_<COUNTRY> where <COUNTRY> is the bond's country.

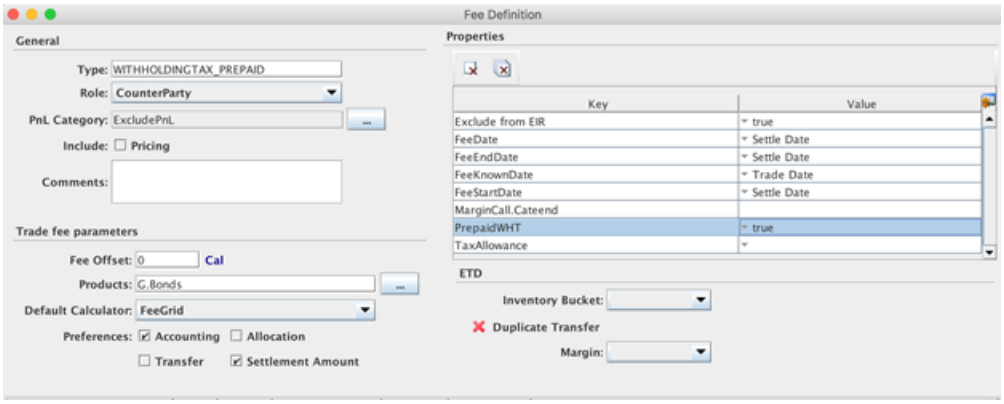
They contain the withholding tax rate in percentage.

Example:

Id	Processing Org	Legal Entity	Role	Attribute Group	Attribute Type	Attribute Value
89257	ALL	CP	ALL		LegalEntityTaxRate_TAIWAN	10

6.8.2 Fee Definitions

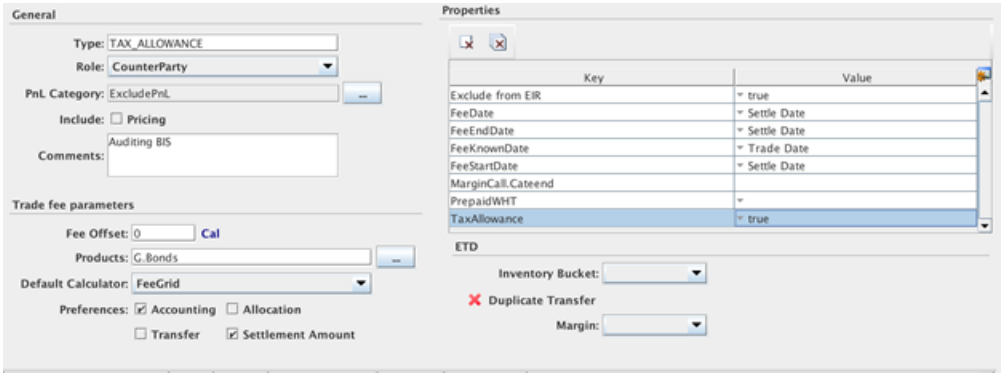
WITHHOLDINGTAX_PREPAID



You need to set:

- Role = CounterParty
- Default Calculator = FeeGrid
- Settlement Amount = Checked
- Property PrepaidWHT = true

TAX_ALLOWANCE



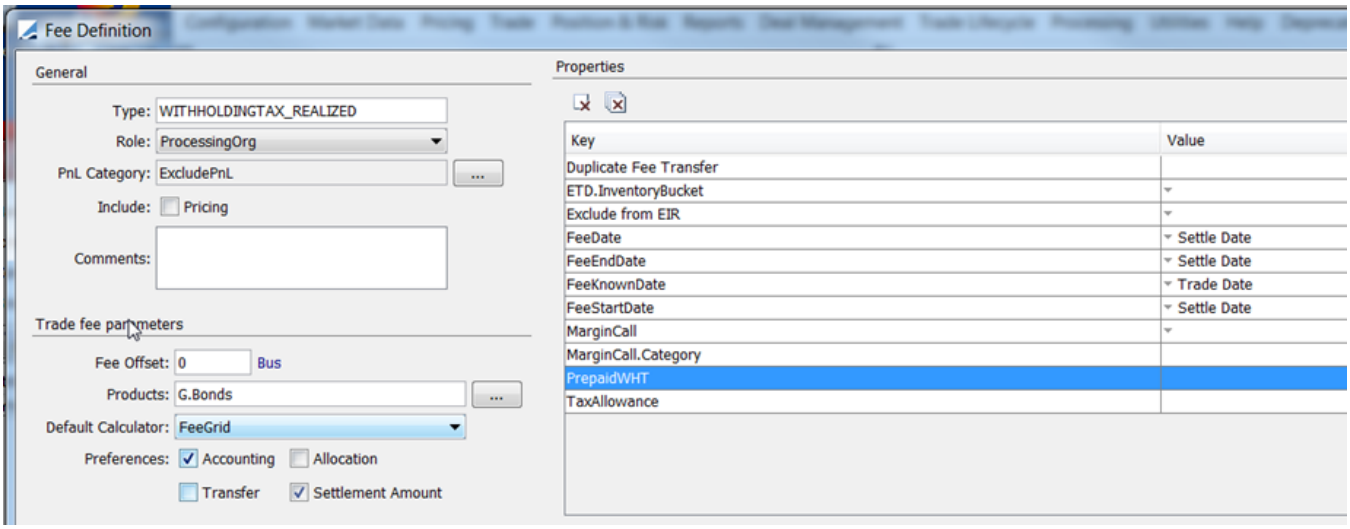
You need to set:

- Role = CounterParty
- Default Calculator = FeeGrid

- Settlement Amount = Checked
- Property TaxAllowance = true

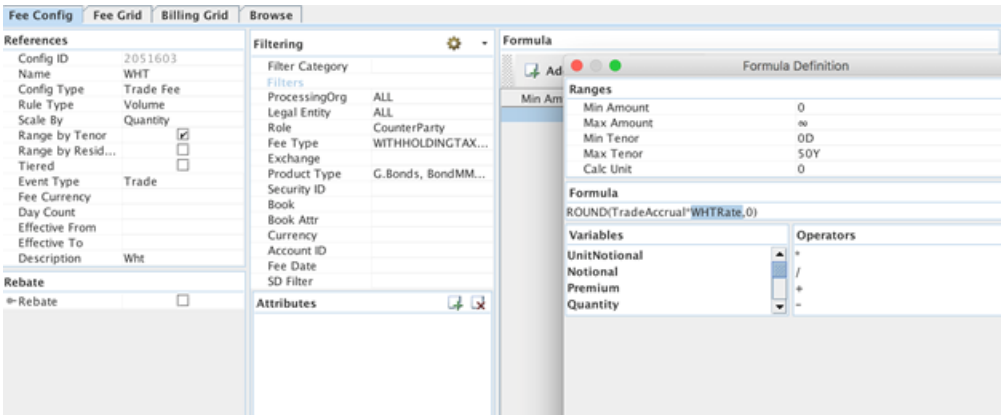
WITHHOLDINGTAX_REALIZED

Used for redemptions.



6.8.3 Fee Grid Configurations

WITHHOLDINGTAX_PREPAID

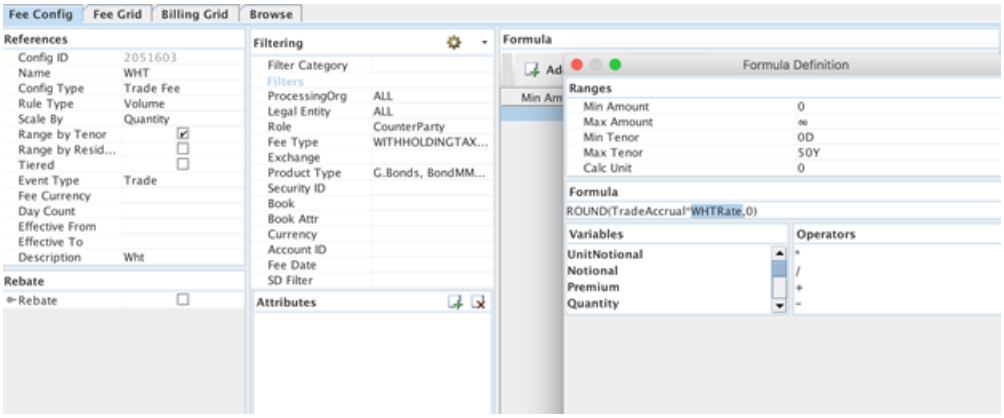


You can use the following variables:

TradeAccrual correspond to the Accrual field of the trade.

LegalEntityWHT gets the WHT rate from legal entity attribute LegalEntityTaxRate_<COUNTRY>.

TAX_ALLOWANCE



WITHHOLDINGTAX_REALIZED

You can use the following variable:

WHTRate gets the WHT rate from the withholding tax configuration.

6.8.4 Pricer Measures

You can add the following pricer measures:

WITHHOLDINGTAX_PREPAID (fee pricer measure)

Class Name = `tk.pricer.PricerMeasureGenericFee`

TAX_ALLOWANCE (fee pricer measure)

Class Name = `tk.pricer.PricerMeasureGenericFee`

WITHHOLDINGTAX_REALIZED (fee pricer measure)

Class Name = `tk.pricer.PricerMeasureGenericFee`

ACCRUAL_WHT returns the amount of WHT for the ACCRUAL pricer measure (based on Withholding Tax Configuration rate)

ID = 918

Class Name = `tk.pricer.calculators.PricerMeasureBond`

ACCRUAL_SETTLE_DATE_WHT returns the amount of WHT for the ACCRUAL_SETTLE_DATE pricer measure (based on Withholding Tax Configuration rate)

ID = 919

Class Name = `tk.pricer.calculators.PricerMeasureBond`

Accounting Events

You can add the following accounting events:

WITHHOLDINGTAX_PREPAID

TAX_ALLOWANCE

WITHHOLDINGTAX_REALIZED

ACCRUAL_WHT

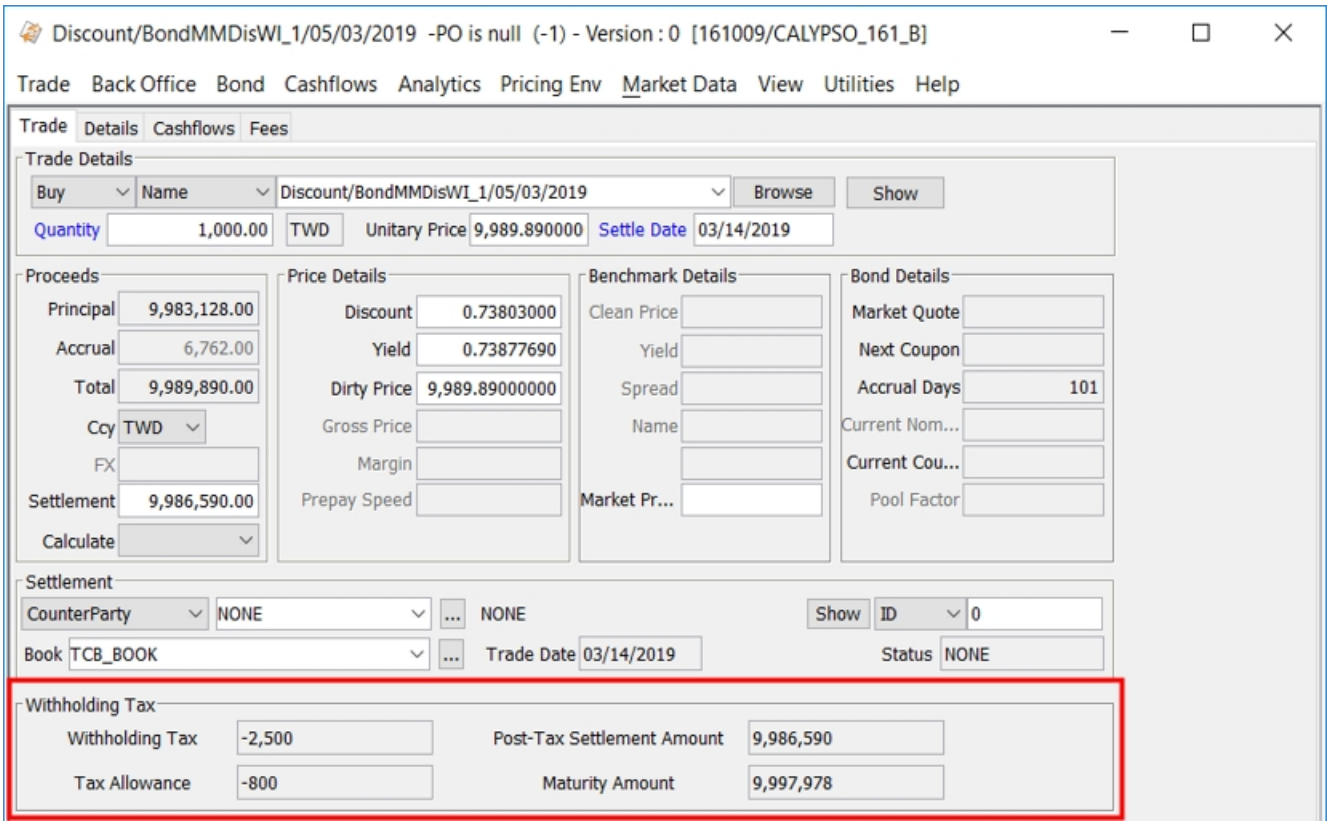
ACCRUAL_SETTLE_DATE_WHT

ACCRUAL_REAL_WHT returns the amount of WHT for the ACCRUAL_REAL accounting event (based on Withholding Tax Configuration rate)

6.9 Withholding Tax Trade Window Panel

In the Bond Trade window and the Money Market Trade window, an optional Withholding Tax panel is available for displaying the withholding tax amounts.

From the trade window, choose **View > Withholding Tax** to add the Withholding Tax panel.



Withholding Tax Details

Fields	Description
Withholding Tax	Sum of fees with fee definition property PrepaidWHT = true.
Tax Allowance	Sum of fees with fee definition property TaxAllowance = true.
Post-Tax Settlement Amount	Post-Tax Settlement Amount = Settlement Amount + Withholding Tax + Tax Allowance

Fields	Description
Maturity Amount	Only displayed for BondMMInterest and BondMMDiscountWithAI. Whether or not the "Apply Withholding Tax" checkbox is selected on the bond definition Market panel determines if the tax amount is removed or not. When "Apply Withholding Tax" is selected, Maturity Amount is calculated as: • For BondMMInterest: Maturity Amount = Notional + Total Accrual - RoundDown(Total Accrual * WHT Rate) Where Total Accrual = Round(Notional * Coupon Rate * Days/365, 0) (this is the interest cashflow) • For BondMMDiscountWithAI: Maturity Amount = Notional - RoundDown(Total Accrual * WHT Rate) Where Total Accrual = (100 - Issue Price) /100 * Notional When "Apply Withholding Tax" is not selected, Maturity Amount is calculated as: • For BondMMInterest: Maturity Amount = Notional + Total Accrual • For BondMMDiscountWithAI: Maturity Amount = Notional The amount is saved in the trade keyword MaturityAmount.

7. Defining Bond Spreads

Bond spreads are used as underlying instruments for generating interest rate curves. A bond spread is basically a swap on a bond.

To define a bond spread product, navigate to **Configuration > Fixed Income > Spread** (menu action `product.BondSpreadWindow`) from the Calypso Navigator.

You can also manually change a spread on a bond when pricing.

▶ See Bond Discount Spread for more details.

Contents

Bond Spread Window

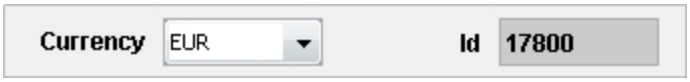
- Click **Load** to load the existing bond spreads.

  Select a bond spread and modify the fields described below as applicable.
- Click **New** and enter the fields described below to create a new bond spread.
- Click **Delete** to delete a spread.
- Click **Save** to save your changes.

  You can also click **Save As New** to save the bond spread as a new bond spread.

7.1 Fields Details

Enter a currency for the spread. Loading a saved spread will populate the currency and Id fields.

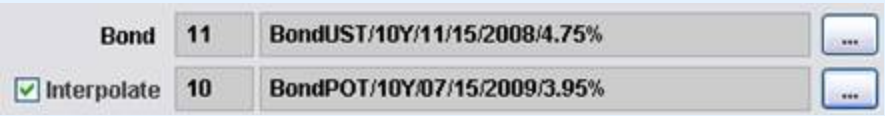


(Fixed Side)

Fields	Description
Maturity	Select the maturity of the swap. The first field corresponds to the number of years, and the second to the number of months. For example, a 2.5 years maturity will be defined as: 
Date Roll	Select the date roll convention to apply when the maturity date falls on non business days.
Frq	Select the payment frequency of the swap.
Holidays	Click ... to select the payment holiday calendar.
Day Count	Select the daycount convention for calculating the interest rate.

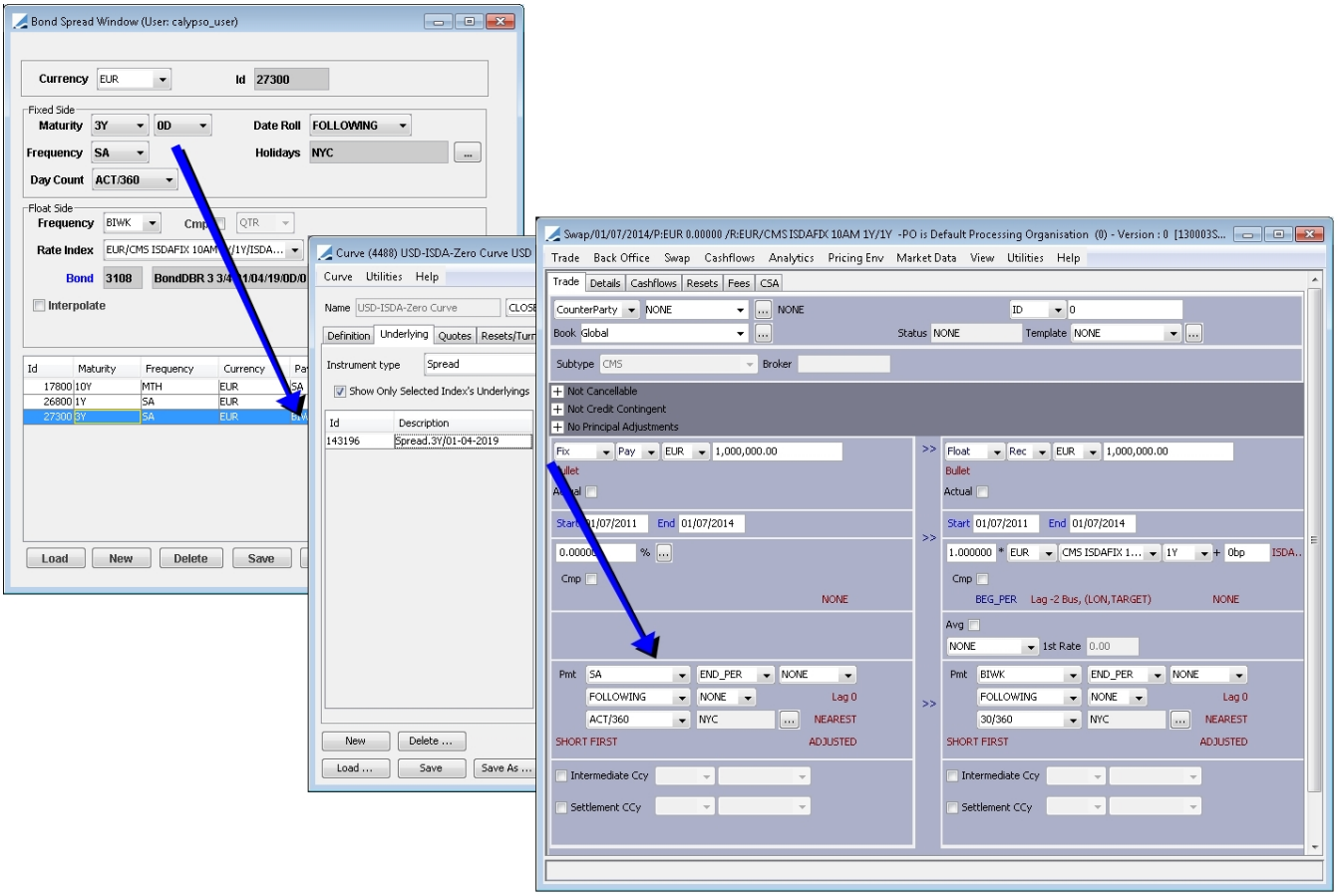
(Float Side)

Fields	Description
Maturity	Select the maturity of the swap. The first field corresponds to the number of years, and the second to the number of months. For example, a 2.5 years maturity will be defined as: 
Date Roll	Select the date roll convention to apply when the maturity date falls on non business days.
Frq	Select the payment frequency of the swap.
Cmp	Compounding frequency schedule. Click the checkbox and choose an interval from the drop down menu.
Holidays	Click ... to select the payment holiday calendar.
Day Count	Select the daycount convention for calculating the interest rate.
Id	Unique id given by the system when the bond spread is saved.

Fields	Description
Rate Index	Select the reference index of the swap.
Bond	Click ... to select the bond underlying the bond spread.
Interpolate	Check the Interpolate checkbox to specify a second bond and interpolate the interest rate between the two maturities. You will be prompted to select a second bond as shown below.  » Click ... next to the Interpolate field to select a second bond.

7.2 Adding a spread to an Underlying

You can open the swap the spread is on by double-clicking and holding ctrl in the curve window. The swap used to generate the spread will open.



- Define a bond spread in the Bond Spread Window. Add fixed/float details.
- Open a curve in a Curve Window. In the underlying tab, add instrument type "Spread" from the drop down.
- Select the defined spread with Id and double-click while holding the ctrl button. A swap window with the fixed/float details will open.

8. Bond Spread Adjustment

You can view issuer, issue spread and funding cost on bond products. Spreads are stored in the bond product definition and are used to discount cashflows. Issue spread is stored in the legal entity attribute table. You must first define a spread on a bond to use **Configuration > Fixed Income > Spread** from the Calypso Navigator, in order to manipulate a spread to a bond for pricing.

Adjusting issue spreads expresses credit risk on a bond issue as well as an issuer. In order to price a trade or position, base points can be adjusted for the notes. Issuer and issue adjustment spreads are summed for the total spread. Spreads can be manually overwritten for pricing.

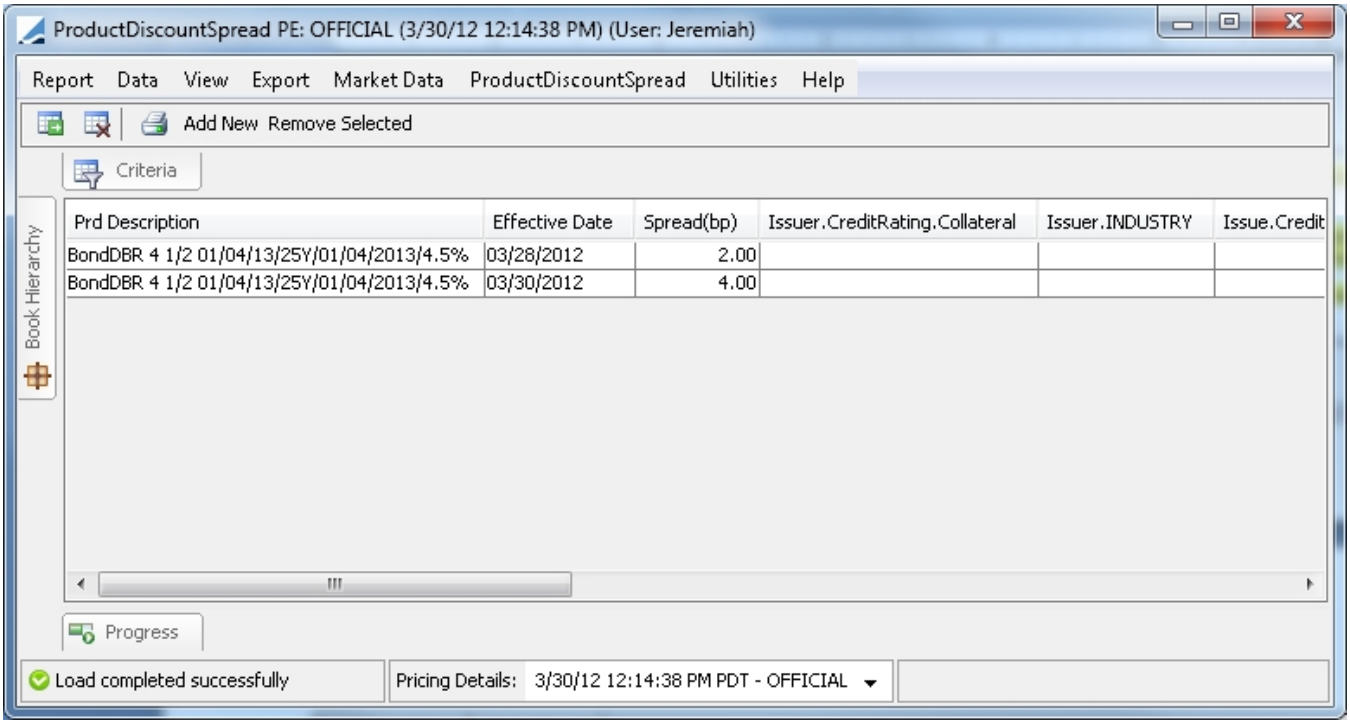
From the Calypso Navigator, navigate to **Reports > Securities Reports > Bond Discount Spread** (menu action `reporting.ReportWindow$ProductDiscountSpread`) to navigate to the window.

Contents

▶ See Defining Bond Products for more details.

▶ See Bond Spread for more details.

8.1 Defining an Issuer Spread



Bond Discount Spread window

8.1.1 Add a Product

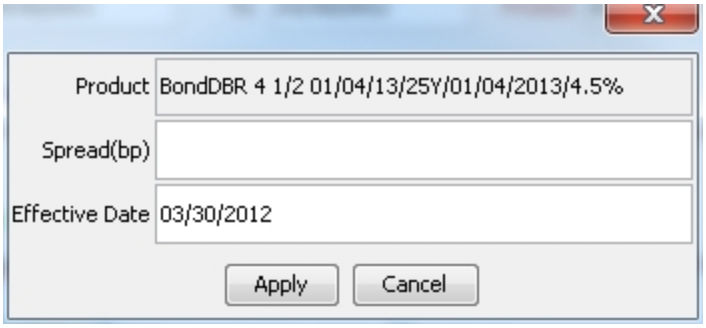
You can define a spread by loading a bond product and adding base points. Hover over **Criteria** to enable the search panel.

Product Search panel

From here you can search by date and product. Click **...** to bring up the product chooser panel.

8.1.2 Add a Spread

You can select ProductDiscountSpread from the menu or click **Add New** in the tool bar.



Add Spread window

Add a spread or modify the effective date for the product.

8.2 Configuring the Window

You can configure the report in the viewer.

- You can click **Data** and select configure data columns.
- You can click **View** and select a table view, frame and layout. You can save a layout as a template. Click **Save as Default Layout**.
- You can save your configuration as a template. Click **Save as Template** and choose a name.
- You can export your report to .xls, .csv, etc.

Hover over the Progress tab to view job progress running in the engines.

8.3 Calculations

Spreads are adjusted according to the following calculations:

$$DirtyPrice = \sum_{i=n}^{N-1} C_i df_i + F df_n$$

- *N* is the total number of cashflows generated
- *N* - 1 ≥ n ≥ 0 is the index of the last coupon payment time
- C_i is the coupon payment for the time index 'i'
- *F* is the face value (redemption principal)

$$1/(1 + y/n)^{w+1}$$

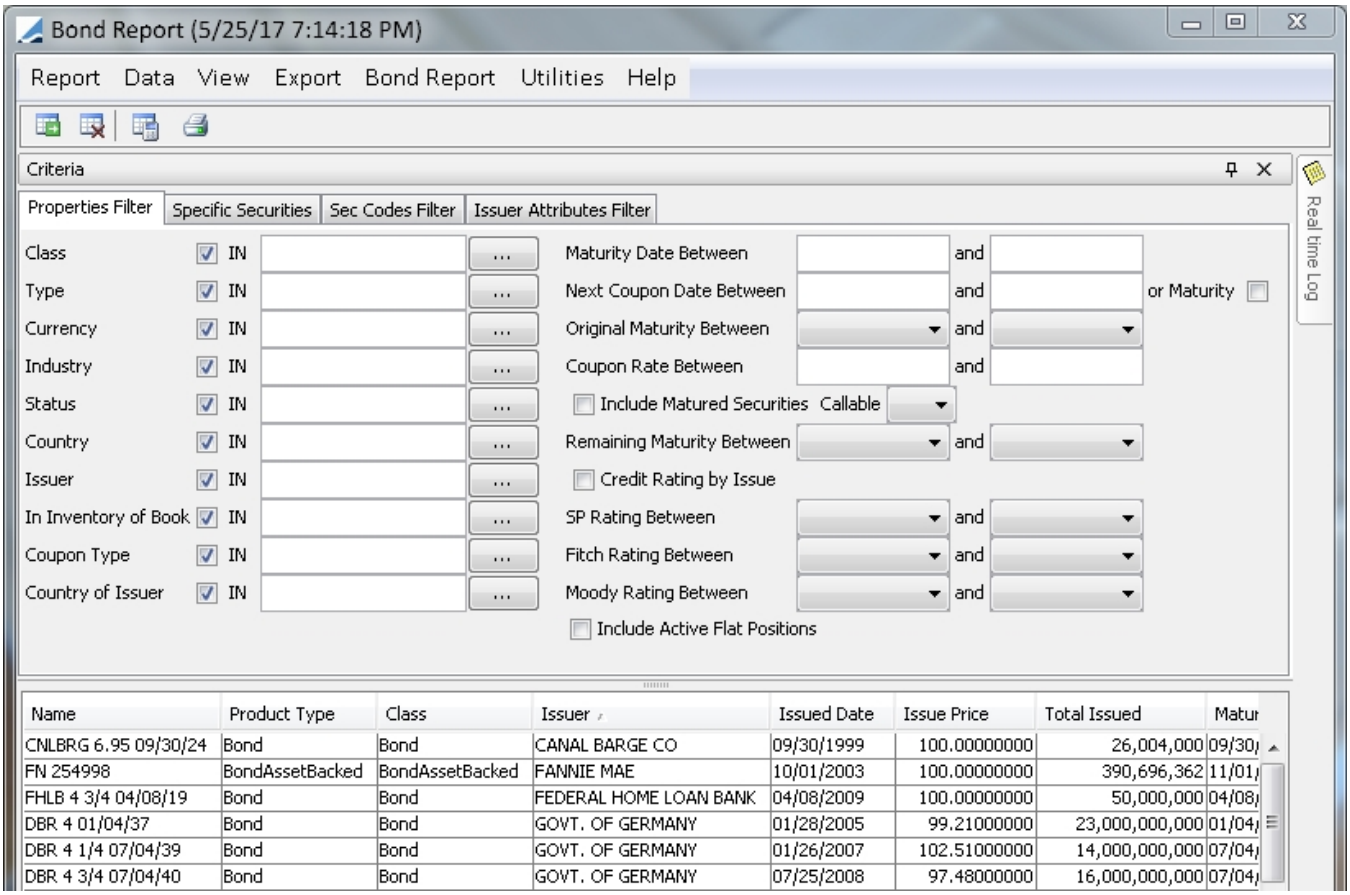
- *dfi* is the discount factor for the time index 'i', which discounts a cashflow from the time 'i' to the given settle date. It is in the form of- 'i', whole payment period in the time interval between the valuation date to the cashflow payment date, and 'w'- remaining fractional period not covered by the whole periods for odd coupons.

9. Bond Report

This document describes how to use the Bond report.

The bond report allows loading bonds that share common criteria, and saving the selection as a template to be used in trade windows. Bonds are created using **Configuration > Fixed Income > Bond Product Definition**.

From the Calypso Navigator, navigate to **Reports > Securities Reports > Bond Report** (menu action `reporting.ReportWindow$Bond`) to bring up the Bond report.



Bond Report Window

9.1 Loading Bonds

» Enter search criteria using the panels described below, and click to load the corresponding bond products.

A star (*) next to the panel title indicates what search panel is used to load data.

» Choose **Report > Save As Template** to save the search criteria as a template. You will be prompted to enter a template name and specify whether the template is public or private.

Bond report templates are available for selection in the Bond Trade window, Repo Trade window, and Margin Call Configuration window.

» You can select a template, and click to display the number of objects that will be loaded from the database, before loading the report.

» Click to print the report results.

NOTE: For the Pivot view and the Aggregation view, the print icon is disabled.

You can use [Ctrl+P] or [Ctrl+L] to print the report, or you can export the report to Excel and print it from there.

9.1.1 Properties Filter Panel

The Properties Filter panel is selected by default. It allows selecting criteria from bond static data — bond class, bond sub-type, bond currency, bond status (for bonds imported from Bloomberg), bond country, bond issuer, bond maturity date.

It also allows:

- Selecting bonds based on the INDUSTRY attribute of the issuer.
- Setting a range of ratings for the rating agencies to select bonds from the corresponding issuers.
- Setting a range of tenors for the remaining maturity as of the current date, and for the original maturity.
- Including or excluding matured bonds using the “Include Matured Securities” checkbox.
- Selecting a book to filter bonds that have a position in the selected book. Note that the selection is checked against the economic position (calculated by the Liquidation engine).
- Including or excluding bonds with active flat positions using the "Include Active Flat Positions" checkbox. Select this checkbox to show active flat positions. This is dependent on the "In Inventory of Book" attribute and requires a book to be specified there before the report can generate these positions.

9.1.2 Specific Securities Panel

Select the Specific Securities panel to choose specific securities to add to a bond template.

» Select a product code and type in a few characters of the code value in the adjacent field, then hit Enter. Note that the Name product code searches the bond short names.

The system searches all the bonds defined in the system, unless a quick entry template has been specified, in which case the system only searches the bonds filtered by the quick entry template.

▶ See Bond Report Menu for information on setting up a quick entry template.

Also, if the environment property USE_SUBSTRING_IN_BOND_NAME_QUERY=true is set, the system searches all the letters in the product code values. Otherwise, it only searches from the start.

The bonds that satisfy the request are displayed in a list.

» You can also enter a bond product id in the Product Id field and hit Enter.

» Check the "Specific Bonds Exclusively" to load in the report results only the bonds selected in this panel. Criteria specified in other panels will not be taken into account. This allows setting a static list of bonds.

» Then click  to load the bonds selected in this panel in the report results.

9.1.3 Sec Codes Filter Panel

Select the Sec Codes Filter panel to select bonds based on the values of security codes. Security codes are created using **Configuration > Product Configuration > Product Code**.

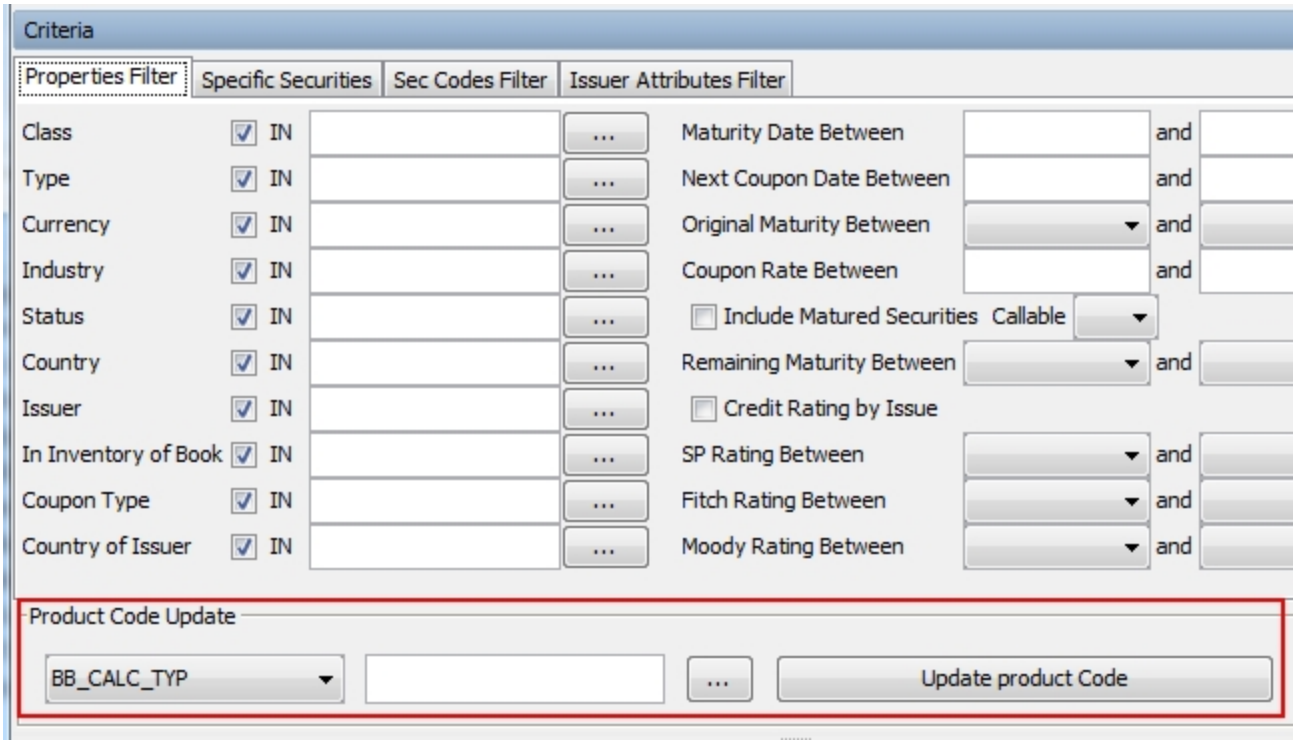
9.1.4 Issuer Attributes Filter

Select the Issuer Attributes Filter panel to select bonds based on the values of issuer attributes. Issuer attributes are specified in the Issuer static data under **Configuration > Legal Data > Legal Entities**, Attributes button.

9.2 Updating Product Codes in Bulk

You can use the Bond Report to update product codes in bulk.

Load the bonds for which you want to update a product code from any panel, and choose **Bond Report > Toggle Product code update panel** to display the Product Code update panel as shown below.



» Select a product code and set its value as needed. Then click **Update product Code**.

The product code will be updated for ALL the bonds currently loaded.

9.3 Bond Report Menu

The menu items of the Bond Report menu are described below.

Menu Items	Description
Apply to Specific Securities (Alt+DblClick)	In the bond report results, you can select a row and choose **Bond Report > Apply to Specific Securities (Alt+DblClick)** to add the corresponding bond to the Specific Securities panel. You can also hit Alt and double-click a row to add the corresponding bond to the Specific Securities panel.
Set Quick Entry Template	To select a bond report template for quick entry. When a quick entry template is set, the product code search will only apply to the bonds filtered by the quick entry template. Otherwise the product code search applies to all the bonds defined in the system. You will be prompted to select a template name. Note that only one bond report template can be set for quick entry.
Disable Quick Entry Template	To disable quick entry from a bond report template.

Menu Items	Description
Load Quick Entry Template	To load the quick entry template, if any.
Toggle Product code update panel	To update product codes in bulk. ▶ See Updating Product Codes in Bulk for details.

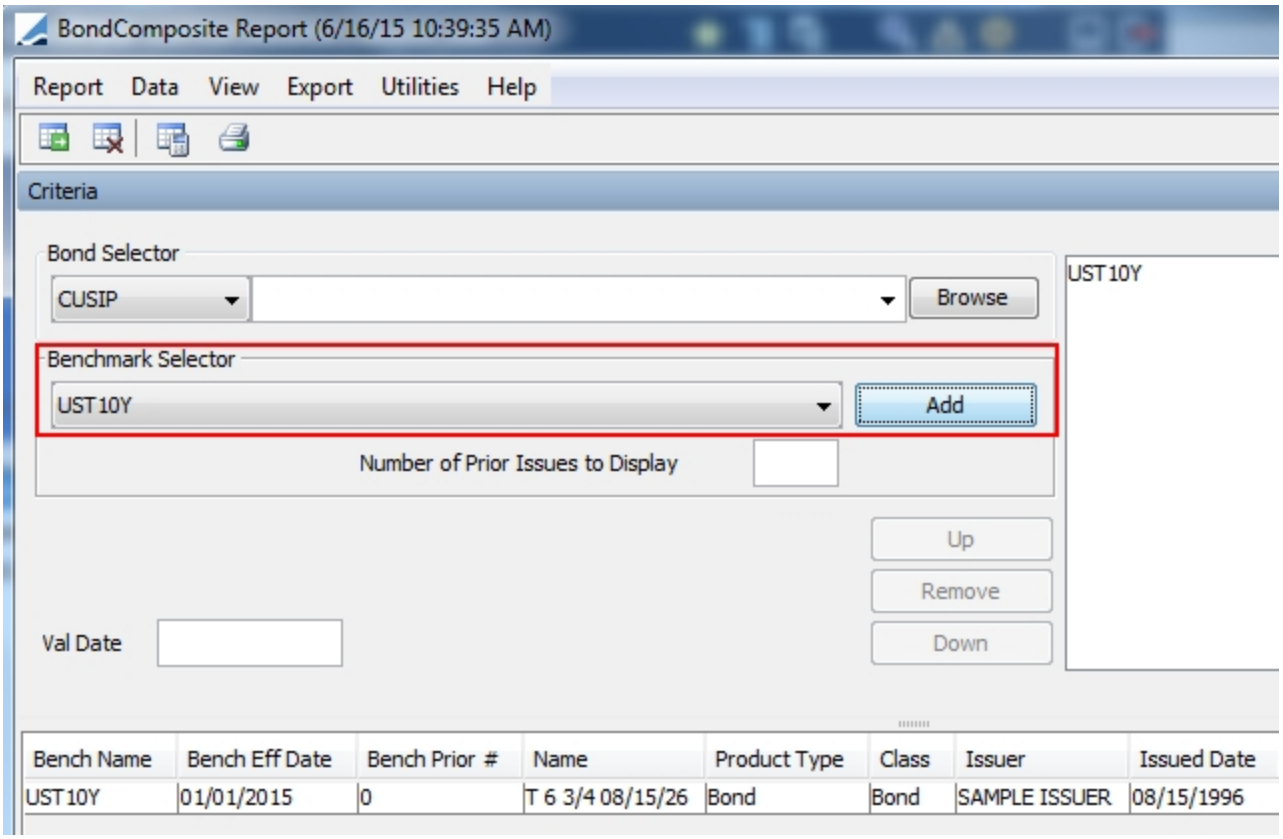
9.4 Bond Composite Report

The Bond Composite report allows displaying the underlying bonds that compose a bond benchmark. Bond benchmarks are created using **Configuration > Fixed Income > Bond Benchmarks**.

▶ See Specifying Benchmarks for details.

Add the Bond Composite Report menu item using Main Entry Customizer, the action is `reporting.ReportWindow$BondComposite`.

Then choose the Bond Composite Report menu item.



» Select a bond benchmark from the Benchmark Selector and click **Add**. Then click to load the corresponding products.

You can also load individual bonds using the Bond Selector area.

You can enter a value date to only load the benchmarks effective after that date.

» Choose **Report > Save As Template** to save the search criteria as a template. You will be prompted to enter a template name and specify whether the template is public or private. Bond Composite report templates are available for selection in the Bond Front Trade window, and Repo Front Trade window.

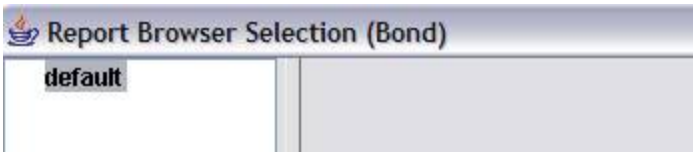
10. Defining a Bond Browser

The Bond Front and Repo Front trade windows allow using a special product browser for selecting products.

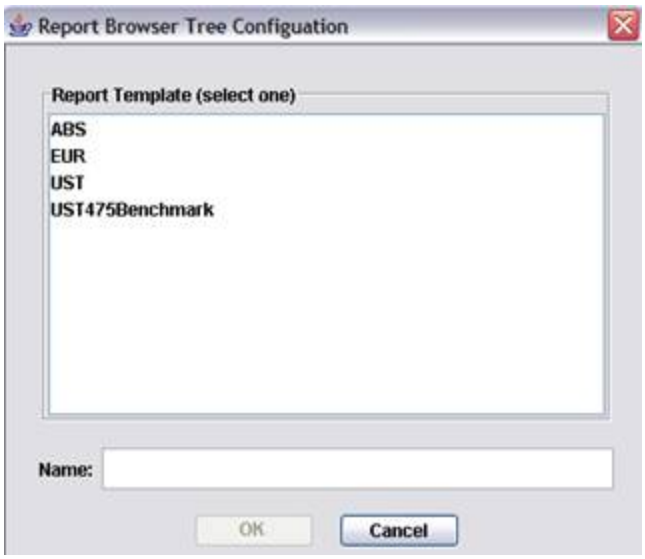
Prior to specifying a product browser, you need to specify bond report templates.

▶ See Bond Report for details.

When you click **Browse** from the Bond Front window or the Repo Front window, the product browser window will appear as shown below.



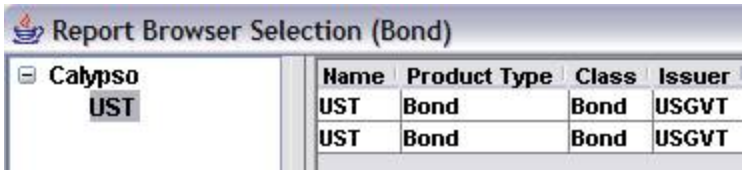
» Right-click the “default” label and choose “Add Report”. You will be prompted to select a bond report template or a bond composite report template as shown below.



Select a template, enter a display name for the template in the Name field, and click **OK**.

» You can also group the report templates. Right-click the “default” label and choose “Add Report Grouping”. You will be prompted to enter a group name. You can then add report templates under a given group.

» Then right-click the “default” label and choose “Save Tree” to save the product browser. You will be prompted to enter a name. The selected name will replace the “default” label.



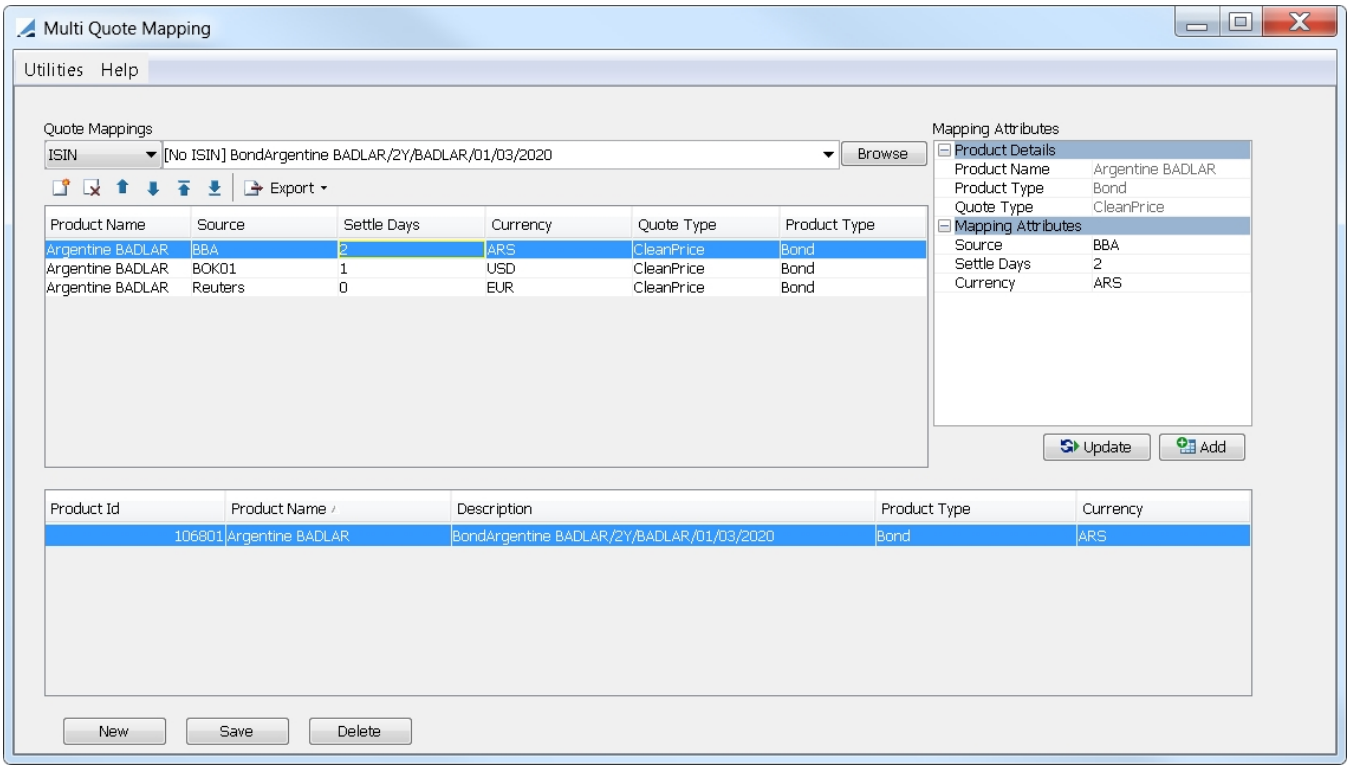
- You can right-click a report and choose “Set As Default” to have the report selected by default when you open the product browser.
- You can click **Search** to open the Bond Report.

11. Multi Quote Mapping

In some countries such as Argentina, a bond can be trade in multiple markets, generating different quotes for the same bond. The quotes can vary by source (market), settle days, and currency. The quotes for a bond may also have different quote types (clean price, yield, etc). The valuation of the bond position must be done by only one quote, which is determined by regulators and may change over time.

The Multi Quote Mapping window (menu action `marketdata.MultiQuoteMappingWindow`) allows mapping multiple quote sources to the same bond and prioritizing in which order these quotes, if available, should be used.

11.1 Defining a Bond Quote Mapping Set



- Click **New** to being defining a new quote mapping set.
- Select a bond.
- Specify the quote attributes.

  Specify the Source, Settle Days, and Currency in the Mapping Attributes area as needed, then click **Add**. A row for that quote's attributes is added.

  Repeat for each different quote as needed to add a row for each.

  You can highlight a row and modify attributes as needed in the Mapping Attributes area, then click **Update** to apply the changes to the row.

You can highlight a row and click to delete the row.

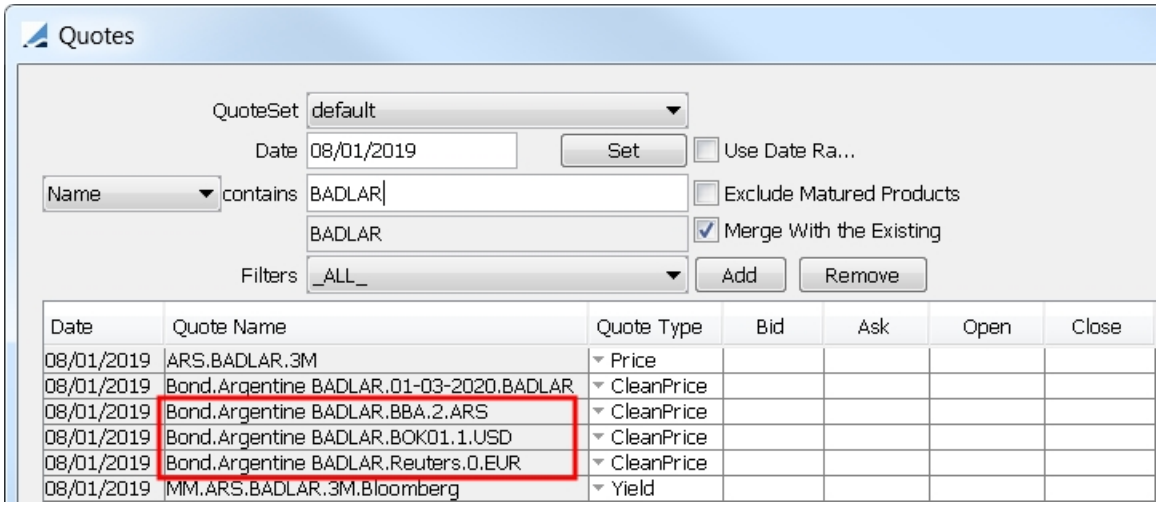
You can click to begin a new set and delete all rows.

» Prioritize the quotes.

Highlight a row and use to arrange the rows into order of priority in which the quotes should be used. If the first quote is not available, it will look for the second priority quote, and so on.

» Click **Save** when you are done. The bond quote mapping set is saved and populated in the lower half of the window.

It also creates a quote name for each row of the quote mapping set in the format "Bond.<Bond Name>.<Source>.<Settle Days>.<Currency>".



» You can double-click a quote mapping row to open the individual quote in the Quotes window.

» You can double-click a bond quote mapping set row in the lower half of the window to open the bond in the Bond Product Definition window.

» You can import or export bond quote mapping sets as xml or csv using **Utilities > Import** or **Utilities > Export**. You can also export using **Export** in the Quote Mappings area.

To import, it is recommended for first export a set in order to get the correct format.

11.2 Populating Values from Quote Mapping Sets via Scheduled Task

The scheduled task APPLY_BOND_QUOTE_MAPPING allows populating values for standard bond quotes and some bond definition fields based on the quotes defined in the Multi Quote Mapping window.

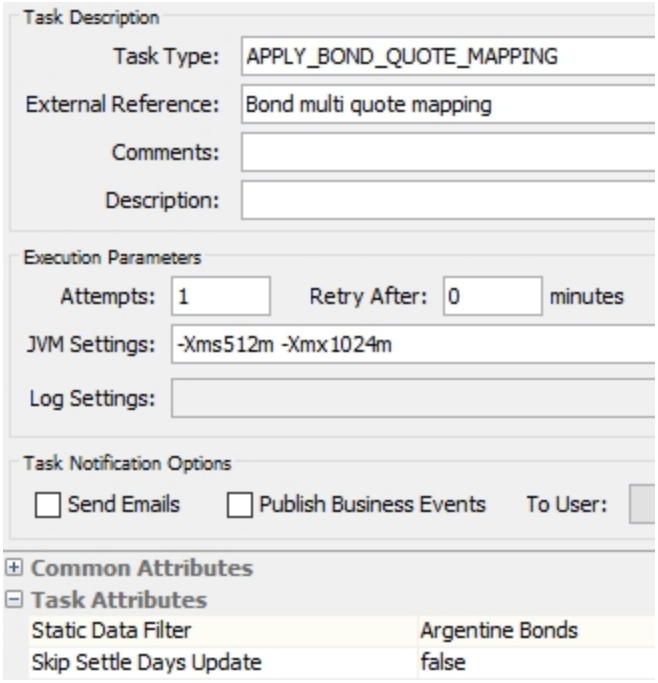
If a targeted bond has a quote mapping set defined, the system will look for quotes in the order listed in the set. When a quote is found, that value is populated into the standard bond quote. The bond definition "Quoting Ccy" and "Settle Days" fields are also updated with the corresponding values from the quote mapping set.

APPLY_BOND_QUOTE_MAPPING first checks the current bond definition and if the "Quoting Ccy" and "Settle Days" fields will not be updated, then no updates will be made to the bond definition. The standard bond quotes will still be updated as applicable.

The scheduled task must be run on the quote date of the quotes from which you want to populate values.

If no quotes are found in the entire mapping set, a message will be logged that no quote was found for the bond, and processing will continue onto the next bond.

Scheduled tasks are added in the *scheduledTask* domain.



Common Attributes

Select a pricing environment.

Task Attributes

- Static Data Filter – Select a static data filter to define the scope of bonds to be processed.
- Skip Settle Days Update – If set to false, the bond definition 'Settle Days' field is updated based on the bond's multi quote mapping attribute 'Settle Days'. If set to true, 'Settle Days' is not updated, and all other attributes will continue to be updated. Default is true.

12. Fixed Income Products

This section describes the various types of Fixed Income products supported by Calypso. Help is available from all trade worksheets - Choose **Help > Trade Help** in any trade worksheet for complete details.

Functions common to all trade worksheets are described under Calypso Front Office Tools documentation: trade functions, trade menus, Details panel, Cashflows Panel, Fees panel, etc.

Trades can be captured from the **Trade > Fixed Income** menu in the Calypso Navigator or in a Trade Blotter.

Bonds

Product Name	Definition	Trade Worksheet
Bond	All types of bond products and interest money markets.	**Trade > Fixed Income > Bond**
Bond Forward	An OTC forward contract on a bond product.	**Trade > Fixed Income > Bond Forward**
Bond Future	A future on a bond product.	**Trade > Fixed Income > Bond Future**
Bond Future Option	A future option on a bond product.	**Trade > Fixed Income > Listed Future Options**
Issuance	A bond issue from the perspective of the processing organization.	**Trade > Fixed Income > Issuance**
OTC Bond Option	An OTC option on a bond product.	**Trade > Fixed Income > OTC Bond Options**

Deal Capture Only

For the following products, support includes capture of trade properties and cashflow generation - No native pricing is available - There is no risk computation.

Product Name	Definition	Trade Worksheet
Bond	Cap/Floor/Collar on bond payout. Multi-currency bond (quanto).	**Trade > Fixed Income > Bond**
Asset/Mortgage Backed Securities	US Government Agency (15 and 30 year) pass through securities only.	**Trade > Fixed Income > Bond**

13. Capturing Bond Trades

This document describes how to capture basic bond trades using the Bond worksheet.

Navigate to **Trade > Fixed Income > Bond** (menu action `trading.TradeWindow$BondFront`) to open the Bond Trade window, from the Calypso Navigator or from the Trade Blotter.

Bond Quick Reference

Entering Trade Details

- Hit F10 to load a template to populate the worksheet with default values. Then modify the fields as applicable.

  Or you can enter the trade fields directly. They are described below.

  Note that the Trade Date is entered in the Details panel.
- Proceed to the other panels as applicable.

Saving a Trade

- Hit F5 to save the trade, or choose **Trade > Save**.

  You can also hit F3 to save the current trade as a new trade, or choose **Trade > Save As New**.

  You can also hit F12 to save the trade using any action available in the workflow, or choose **Trade > Save Action**. You will be prompted to select an action.

  A description will appear in the title bar of the trade worksheet, a trade id will be assigned to the trade, and the status of the trade will be modified according to the workflow configuration.

Pricing a Trade

- You can choose **Pricing Env > Check** to check if all required pricing data are available in the Pricing Environment.
- Click **Price** to price the trade.

Financing a Trade

- Once a bond trade has been saved, you can choose **Bond > Finance Trade** to enter a related repo trade. If the bond belongs to a bundle, the repo trade will be added to the bundle as well.

  Or you can click **Finance** in the Bundle Entry area.

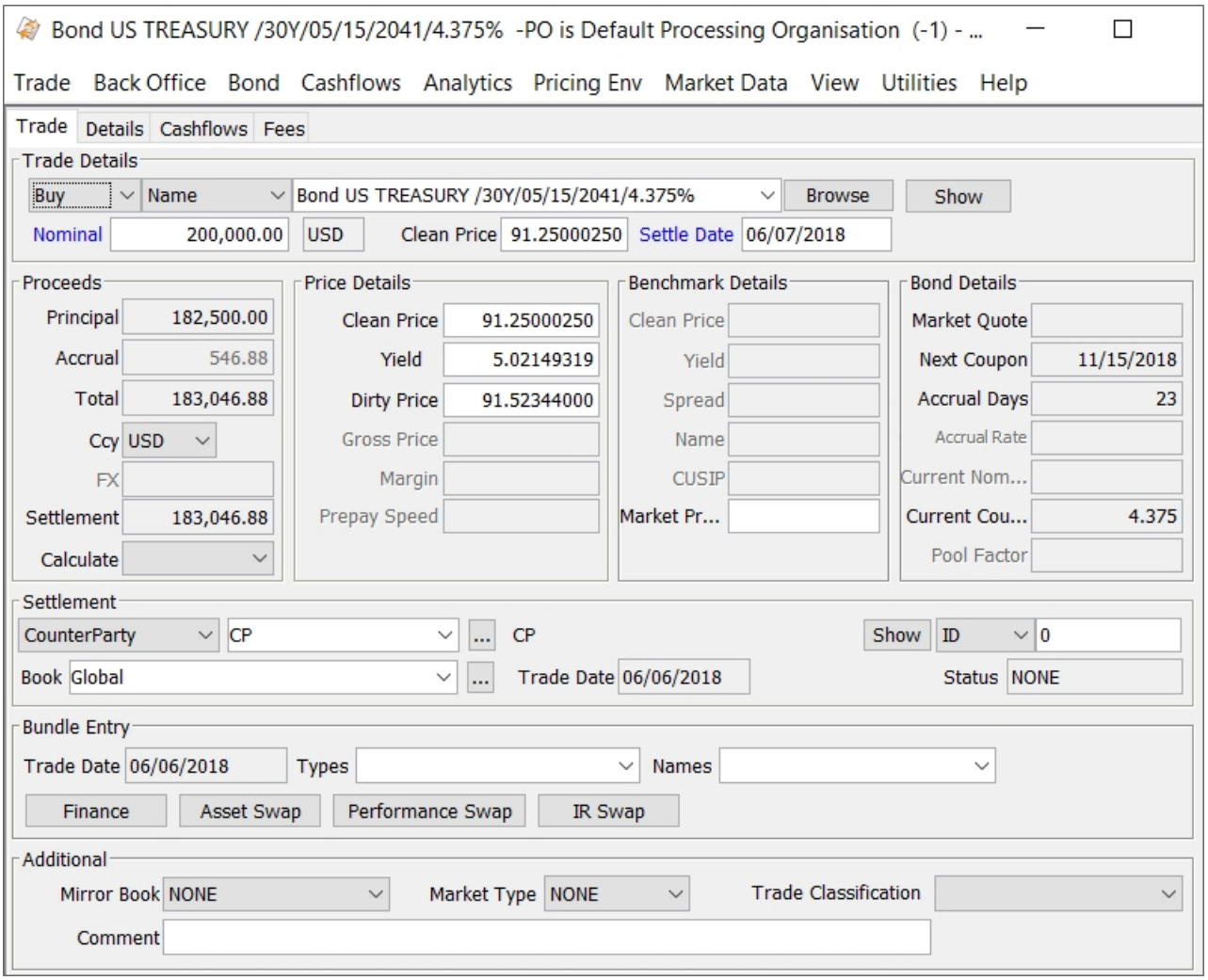
In the Bundle Entry area, you can also enter an asset swap by clicking **Asset Swap**, a performance swap by clicking **Performance Swap**, or an interest rate swap by clicking **IR Swap** – Help is available from these windows.

Trade Lifecycle

- You can allocate the trade to multiple books and legal entities using **Back Office > Allocate**.
- You can terminate the trade using **Back Office > Terminate**.
- You can apply corporate actions using **Trade Lifecycle > Corporate Action > Corporate Action**, or using the CORPORATE_ACTION scheduled task.
- You can assimilate issuance trades.

▶ See Assimilating Issuance Trades for details.

13.1 Bond Trade

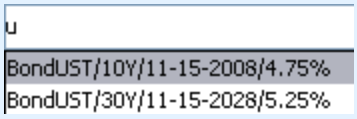


Bond Trade Window

You can click the links below for information on capturing specific types of bonds:

- Asset Backed Bonds
- Danish Mortgage Bonds
- Floating Rate Notes
- Inflation Bonds
- Money Market Bonds
- Taiwanese Bonds
- When Issue / Re-Issue Bonds

Trade Details

Fields	Description
Buy / Sell / Issue / Upsize / Re-Open / Close	Select Buy or Sell as applicable to indicate the direction of the trade from the book's perspective. You can switch between the trade directions using the space bar (note that the space bar is not active in the Speed Entry Panel). You can also select Issue / Upsize / Re-Open / Close for activity related to bond issues from the processing org. ▶ See Issuance Activity for details. You can also select Cover / Short instead of Buy / Sell. It allows identifying trades with trade keyword LongShort = Short whereas Buy / Sell allows identifying trades with trade keyword LongShort = Long. This can be used in the context of Asset Management for filtering and reporting purposes.
Product code Product description	You can select a bond using one of the following methods: Product Code Selection or Browser Selection, they are described below. Once you have selected a bond, the value of the alternative product code is displayed in the field adjacent to the Browse button. The alternative product code is specified in the User Defaults. You can click **Show** to view the details of the selected bond, or to create a bond - Save the bond and click **Apply** in the Bond Product window if you have made any modification - Help is available from that window. ***Product Code Selection*** The product code defaults to the security code specified in the User Defaults. You can select another product code as applicable. Note that the Name product code searches the bond short names. » Type in a few characters of the code value in the adjacent field. The system searches all the bonds defined in the system, unless a quick entry template has been specified, in which case the system only searches the bonds filtered by the quick entry template. ▶ See Specifying a Bond Browser for information on setting up a quick entry template. Also, if the environment property **USE_SUBSTRING_IN_BOND_NAME_QUERY=true** is set, the system searches all the letters in the product code values. Otherwise, it only searches from the start. The bonds that satisfy the request are displayed in a list. 

Fields	Description
	» Select a bond from the list. ***Browser Selection*** Click **Browse** to select a product from a user-defined bond browser. ▶ See Specifying a Bond Browser for information on setting up a bond browser.  » Select a report template to display the corresponding bonds, and double-click a bond from the list to select it. If you do not have report templates, simply click **Search** to browse all existing bonds. » You can right-click any column and choose Configure Columns to customize the display.
Nominal/Quantity	Enter the amount of nominal that is traded. This is the original nominal. Double-clicking the label will change it to Quantity (nominal/face value). You can enter the quantity if the quote type on the bond is set to "Price", "UnitaryPrice", or "GrossUnitaryPrice".  The adjacent field displays the product's currency.
Clean Price	The label actually displays the quote type of the bond product. Defaults to the market quote as of the trade date if any. Modify as applicable. See Clean Price, Yield and Dirty Price below for details. If there is no market quote and BOND_FROM_QUOTE is false, we price the bond from curve to produce an initial price for trading. For BondMMDiscount and BondMMInterest, the pricing parameter MMKT_FROM_QUOTE is used instead of BOND_FROM_QUOTE.
Settle Date	The settlement date defaults to the trade date + the number of settle days specified in the bond product. The settlement date uses the holiday calendar of the bond product to identify business days. If you change the trade date in the Details panel, double-click the Settle Date label to update the settlement date accordingly.
Cash Date	In order to display the cash settlement date in the bond trade window, you need to set the environment property **BOND_CASH_DATE=true**. It is false by default. The field Cash Date will be added next to the Settle Date field, and stored in the field "Alternate Date". To force the transfers to DAP, you need to set the trade keyword SWIFTDAP = true.

Fields	Description
	The static data filter element “Has Cash Date (true/false)” allows selecting bond trades with a cash settlement date, for messaging purposes.

Proceeds Details

Fields	Description
Principal	The principal amount is calculated as Nominal * Clean Price.
Accrual	The amount of accrued interest is calculated based on the Accrual Days. You can double-click the Accrual label to make the Accrual field editable.
Settlement	The settlement amount is calculated as Principal + Accrual. ▶ To enter a settlement amount instead of calculating it, see “Calculate” below. Bonds issued in one currency and settled in another will have the settlement amount rounded using the settlement currency. Note that for Mexican cross currency bonds, the settlement amount is calculated as Nominal * Dirty Price * FX Rate.

Fields	Description
Calculate	Allows capturing trades based on settlement amount. ***Trade Capture by Settlement Amount*** To capture a trade based on settlement amount, enter the following fields: • Settle Date • Settlement • Calculate • If Calculate = “Quantity or Nominal”, enter one of the following: Clean Price, Dirty Price, Yield, Discount • If Calculate = “Price”, enter the Nominal / Quantity Dual currency is supported in 'Calculate = Price', for the case where there is cross currency settlement (bond currency and trade settlement currency are different). • If Calculate = Settlement and Nominal, Principal and Price will be editable whereas Settlement and Nominal will be greyed out and will be calculated once the user enters values in the fields (Quote type i.e. CP or Yield or DP, Settle Date, Principal). To note that, "Calculate = Settlement and Nominal" is limited only to the Australian Market. This implementation is done for bonds where a price/yield formula applies for calculating a price from an interest rate (yield or margin): Fixed Rate Bonds, Floating Rate Notes, Capital Indexed Bonds, Callable Bonds, and RFR Bonds, and pricers: PricerBondAUSCPI, PricerBondFRNAUD, PricerBondCGS, PricerBondGeneric, and PricerBondFRN. In certain cases, users may see Principal and / or Nominal rounding up or down by 1 cent due to the already existing round trip calculation logic. In such cases, users are requested to set Nominal rounding to 3 decimals in the Bond definition > Market Tab. The Nominal / Quantity, or the Price, depending on your “Calculate” selection, and accrued interest if any, will be calculated. The entered Settlement amount may be modified to adjust for having rounded down the Nominal / Quantity to a whole number as needed. • If Calculate = Fractional Quantity, the settlement amount is the user entered value and the price details section is editable. To note that, "Calculate = Fractional Quantity" is limited only to the Australian Market. With the new calculation type, in certain cases, the users may see a 1 cent difference and they are requested to change the nominal decimal to a higher number. This support is provided only to the classic bond trade window. ***BondMMDiscount and BondMMInterest*** For BondMMDiscount and BondMMInterest products, if Calculate = Price or is left blank, and

Fields	Description
	you enter a settlement amount, the dirty / clean price and yield will be calculated accordingly. The settlement amount is stored in the trade keyword "ManualSettlementAmount". The bond pricer will return this amount as settlement amount for settlement calculation. If Calculate = "Quantity or Nominal", then this keyword is not stored and the Nominal / Quantity and Settlement amounts behave as described above.
Ccy	The settlement currency defaults to the bond's currency. When settling a cross currency bond trade, the settlement currency specified in the bond trade window will be used to round the settlement amount, not the currency specified in the bond product definition. Modify as applicable.
FX	The FX field is enabled when the settlement currency is different from the bond's currency.  The FX field defaults to the FX quote on Trade Date. For UDI/MXN bonds, the FX Rate defaults to the FX quote on Settle Date (This is only done for Mexican Bonds). » Enter the FX rate between the settlement currency and the bond's currency. The settlement amount is recalculated accordingly.

Price Details

Fields	Description
Clean Price Yield Dirty Price	Enter the clean price, yield, or dirty price, and the other fields will be calculated accordingly. When a bond is not quoted in Yield, and you manually enter the yield, the manual yield is stored in the trade keyword "Entered Yield". This is used for PREM_DISC_YIELD calculations. The dirty price is clean price + unit accrual. For bonds quoted using Price32, you can enter the trade's price with two, three, or four digits after the dash. The first two digits represent the number of thirty-seconds (between 1 and 31). If the price contains 3 digits, the third digit represents the number of eighths of a thirty second (or 1/256, between 1 and 7). A bond price entered as "99-022" will be read as [99 + 2/32 + 2/8(1/32)], or 99.0703125. The third digit can also be +, indicating 4/8 of a thirty second. If the price contains 4 digits, the last two digits represent the number of sixteenths of a thirty second (or 1/512, between 1 and 15). Note that the four-digit logic only applies to bonds with the tick size 512. For convertible bonds quoted in Price, the Clean Price label switches to Unit, and you can

Fields	Description
	enter the monetary units. For non-callable bonds with MM_ACT30 yield method, the Yield label switches to Monthly Yield. For callable bonds, select the effective call method from the drop down next to the Yield field: Worst, Best, Next, Maturity, or Custom. The trade prices and settlement amount will reflect the effective call. Note that to use Custom, you must have Effective Call = Custom, and a Call Date set in the Call Schedule panel. ▶ Refer to Calypso Zero Curve documentation for complete details on Agency Option Adjusted Spread (AOAS) pricing for bonds.
Gross Price	Only used for Gilt RPI indexed bonds.
Margin	Only appears for floating rate bonds. It displays the DISC_MARGIN pricer measure, which calculates the spread added to current rates to equal the bond yield. Ref: Stigum and Robinson, "Money Market and Bond Calculations" (1996), Ch. 17. For the average rate needed for that formula, the Calypso implementation uses the index rate as of the valuation date. You can enter a discounted margin to solve for the clean price.
Prepay Speed	Only used for BondAssetBacked.
<Secondary Ccy> Clean Price <Secondary Ccy> Dirty Price	They allow entering a bond trade in any currency, and only appear if the *BondEnableSecondaryCcy* domain is set to true. When the trade currency is different from the bond currency, you can enter either one and the other will be calculated. • <Secondary Ccy> Clean Price = Clean Price * FX Rate * Pool Factor • <Secondary Ccy> Dirty Price = Dirty Price * FX Rate * Pool Factor For PIK bonds: • <Secondary Ccy> Clean Price = [Clean Price + (PIK Accrual * Clean Price)] * Pool Factor * FX Rate • <Secondary Ccy> Dirty Price = [Dirty Price + (PIK Accrual * Clean Price)] * Pool Factor * FX Rate They are rounded according to the "Price Dec." field.

Benchmark Details

These fields only appear if the selected bond is associated with a benchmark.

Fields	Description
Clean Price	Displays the price and yield of the Benchmark associated with the selected bond if any.

Fields	Description
Yield	If you modify those values, the Clean Price, Yield and Dirty Price of the trade will be calculated accordingly. When saving a bond trade that has an underlying benchmark bond, the benchmark yield is saved in the keyword "Benchmark Yield". When loading a trade that has the "Benchmark Yield" keyword, the original benchmark clean price and yield are displayed as read-only. Note that you will only see the keyword if you add the value “Benchmark Yield” to the *tradeKeyword* domain.
Spread	Enter the spread over the benchmark. The Clean Price, Yield and Dirty Price of the trade will be calculated accordingly.
Name	Displays the name of the benchmark selected in the bond product. You can choose **Bond > Show Benchmark** to display the benchmark details.
Security Code	The label actually displays the security code selected in the User Defaults. Displays the security code value of the Benchmark associated with the selected bond if any.
ISIN	Displays the security code of the product.
Market Price	Displays the quote of the Benchmark associated with the selected bond if any.

Bond Details

Fields	Description
Market Quote	Displays the latest quote as of the trade date, if any. If there is no quote, and BOND_FROM_QUOTE is false, we do not try to calculate a quote from curve. For BondMMDiscount and BondMMInterest, the pricing parameter MMKT_FROM_QUOTE is used instead of BOND_FROM_QUOTE. **[NOTE: The locale used for quote type generation is set in the domain *LocaleForBondQuotes*. If no value exists in this domain, the locale set in the user environment properties will be used]**
Next Coupon	Displays the next coupon date.
Accrual Days	Displays the number of days between the last coupon date and the settlement date.
Accrual Rate	Displays the current period calculated accrual rate based on observations until the settlement date for calculation of the current accrual. Only available when using a Daily Compounded RFR Reset Index (using bond types BondFRN, UST FRN and BondAssetBacked). Not available when the settlement date is earlier than the value date.
Current Nominal	Displays the current nominal and pool factor for bonds with variable notional.

Fields	Description
Pool Factor	
Current Coupon	Displays the current coupon rate.
Pool Factor	Displays the pool factor when the bond issuer defaults (for ABS and MBS type of Bonds).

Settlement Details

Fields	Description
Legal entity	The first field identifies the legal entity role. The default role is specified using **Utilities > Set Default Role**. However, you can change it as applicable. You can select a legal entity of specified role from the second field provided you have set up favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character. Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Otherwise, click **...** to select a legal entity of specified role from the Legal Entity Chooser. You can also type Ctrl-F to invoke the Legal Entity Chooser, or directly enter a Legal Entity short name. Click **Show** to display the details of the selected legal entity. You can also choose **Utilities > Selected Counterparty Info**. If the trade counterparty is a processing organization that owns the trade's book, and if trade keyword BondNoXferRule=true, the trade does not generate any transfer rules.
Id Ext Ref Int Ref	Unique identification number of the trade. The trade id is automatically assigned by the system when the trade is saved. You can load an existing trade by typing the trade id into this field, and pressing [Enter]. You can also display the internal reference or external reference. The default trade reference to be displayed can be selected in the User Defaults. The internal reference and external reference can be set in the Details panel of the trade worksheet.
Book	Trading book to which the trade belongs. Defaults to the book selected in the User Defaults. You can modify as applicable. You can select a book provided you have set up favorite books. You can also type in a character to display the favorite books that start with that character. Click **...** to specify favorite books or **Utilities > Configure Favorite Books**. The processing org of the book identifies the processing org of the trade.
Trade Date	Displays the trade date specified in the Details panel.
Status	Current status of the trade. The status is automatically assigned by the system based on the workflow configuration.

Fields	Description
	The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.

Bundle Entry Details

You can associate the trade with a bundle. Bundles are created under **Configuration > Books & Bundles > Trade Bundle**.

Opening and existing trade, adding a trade bundle name and selecting 'Save as New' will not save the trade bundle name to the new trade.

You can also finance the trade, capture an asset swap, or capture a performance swap.

Fields	Description
Types	Select a bundle type.
Names	Select a bundle.

Additional Details

Fields	Description
Mirror Book	Select a mirror book if you want to mirror the current trade. You can select the mirror trader from the Details panel. A mirror trade will be saved with the current trade to the selected book, and you can view the mirror trade id from the Details panel.
Market Type	Defaults to the market type selected in the User Defaults. For when-issued and re-issue trades, the system automatically sets the corresponding market type to “When-Issued” and “Re-Issue” respectively. You can modify as applicable. Market types are created in the *marketType* domain.
Trade Classification	The values for that field come from the domain *keyword.TradeClassification*, and this field is stored in the trade keyword “TradeClassification”. The “Trade Classification” column can be configured in the following reports: Trade Browser, Pair Off Manager, Transfer Report, Message Report and Postings Report. This column can also be configured in the BO Browser, task station, and netting manager. “KEYWORD.TradeClassification” can be used in Calypso filters.
Comment	Enter a free comment as applicable.

13.2 Issuance Activity

13.2.1 Issuing a Bond

The issue corresponds to the sale of a bond from the perspective of the processing org. You can click **Show** to create the bond on-the-fly.

For an issue, the bond should have the following characteristics:

- The Issuer should be the processing org of the selected book.
- The Issue Paying Agent (legal entity or role IPA) should be populated on the bond. The IPA handles the coupon payments for the issuer, and will be used in the corporate action process. SDIs should be defined for the bond's IPA for the IPA role.

13.2.2 Upsizing a Bond

Once a bond has been issued but not yet settled, you can use that action to modify the total issued on the bond.

Select the bond that has been issued, and enter a nominal amount to increase the total issued.

13.2.3 Re-Opening a Bond

After the settlement date of the issue, you can still increase the total issued of the bond using that action. You can enter a different price and accrued interest will be computed.

13.2.4 Closing a Bond

This action allows buying back the bond.

13.3 Assimilating Issuance Trades

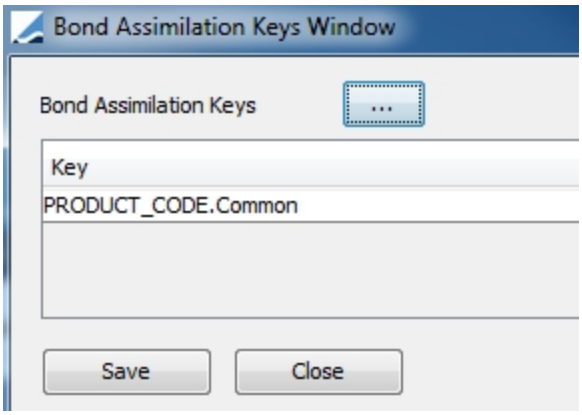
You can assimilate issuance trades on multiple bonds into one bond using the scheduled task ISSUANCE_CONSOLIDATION based on assimilation keys.

13.3.1 Defining Assimilation Keys

The following assimilation keys are used by default: Bond Class, Bond Type, Issue Date, Dated Date, Maturity Date, Issuer, Country, Issue Price, Issue Yield, Currency, Redem Price, Redem Currency, Face Value, Min. Purchase Amount, Coupon details, Market Details, Special details.

However, you can add more assimilation keys for bond legal entities and product codes as needed.

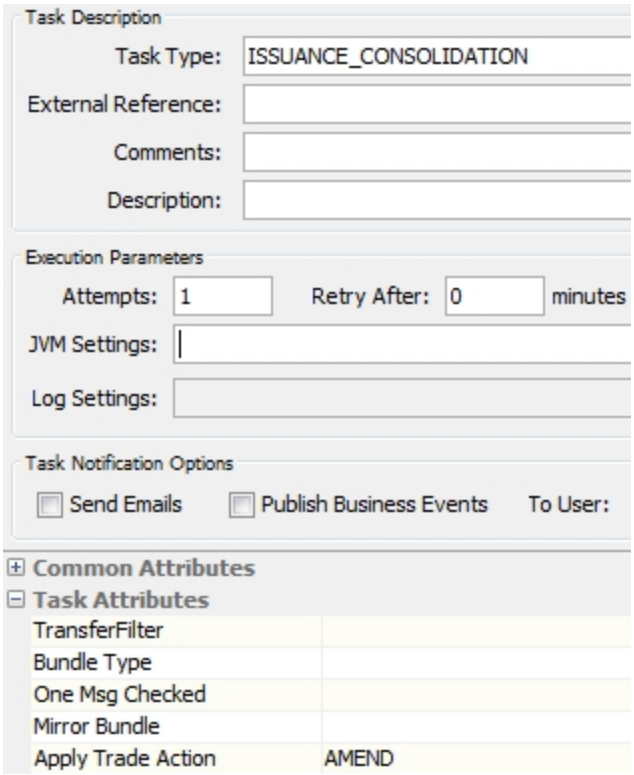
Add a menu item for menu action `util.BondAssimilationKeysWindow` to bring up the Assimilation Keys window.



Click ... to select additional keys, then click **Save**.

13.3.2 Running the Scheduled Task ISSUANCE_CONSOLIDATION

Configure the scheduled task ISSUANCE_CONSOLIDATION.



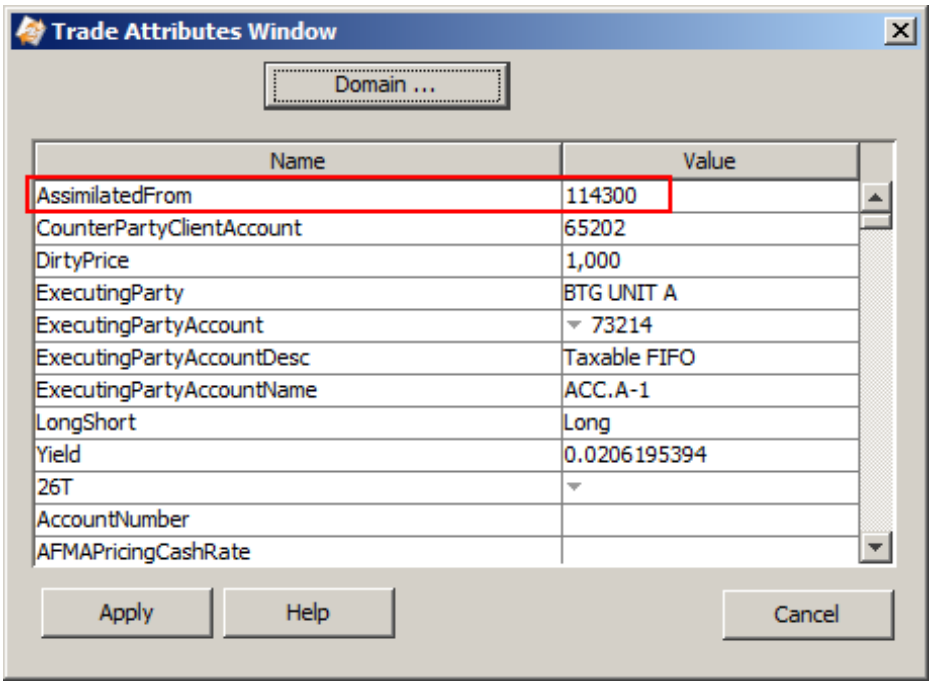
The trade filter should contain Product Type = Issuance.

Task Attributes

- TransferFilter - You can select a static data filter based on transfer criteria.

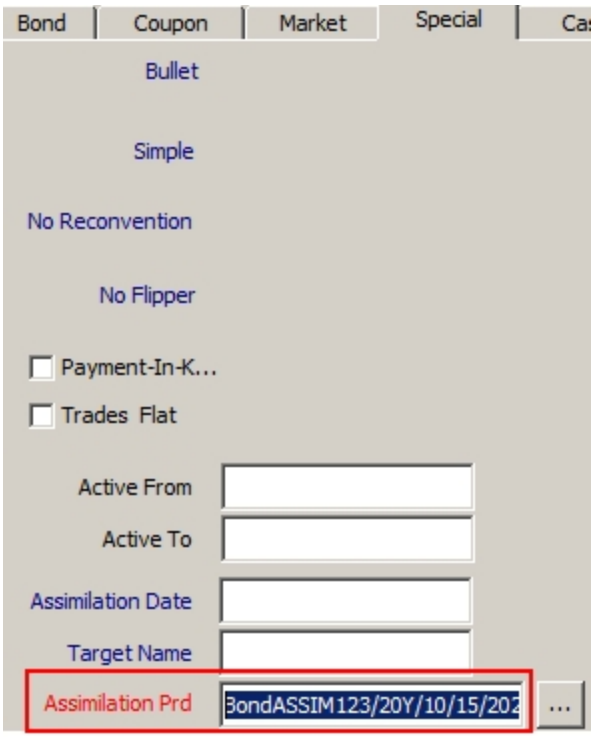
- Bundle Type - You can select a bundle type to set the bundle type on the assimilated trades. The bundle name will be set to the product ID of the target product.
- One Msg Checked - Only applies if a bundle type has been selected. Set to true if you want the bundle to generate one confirmation, or set to false otherwise (default).
- Mirror Bundle - Only applies if a bundle type has been selected. Set to true to save a mirror bundle, or set to false otherwise (default).
- Apply Trade Action - Select the action to be applied on the assimilated trades.

The scheduled task must be run on the Issue date of the bond products that you want to assimilate. The system loads all the trades that match the assimilation keys and selects one of the products as the target product. It updates the trades with the target product, and sets the trade keyword "AssimilatedFrom" to the product ID of the original bond product.



It also updates the trade type to Upsize if the bond total issue is less than the quantity of the trades, and sets a trade bundle if specified.

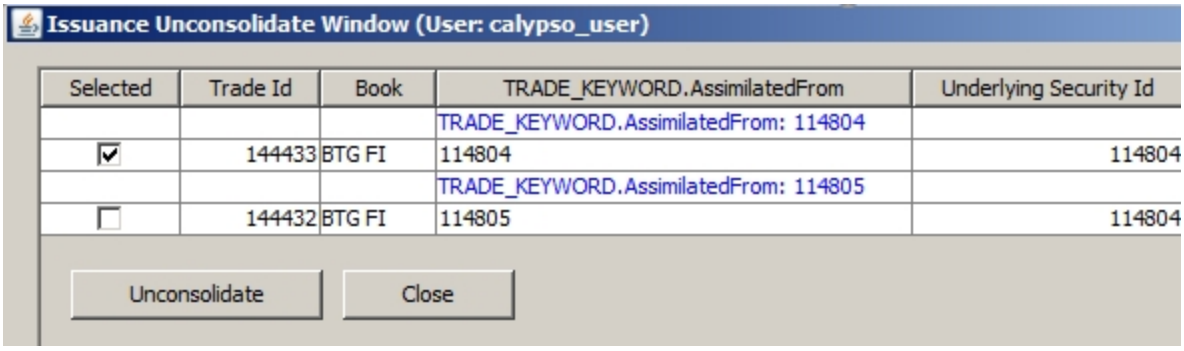
On the assimilated bond products, the system shows the product into which they have been assimilated in the Special panel.



13.3.3 Undoing an Issuance

From the Trade Browser, you can right-click an Issuance trade, and choose **Process > Unconsolidate**. from the popup menu.

The system brings up all the trades that have been assimilated into a target product.



Check "Selected" for the trades you want to remove from the assimilation, and click **Unconsolidate**.

14. Capturing Asset Backed Bond Trades

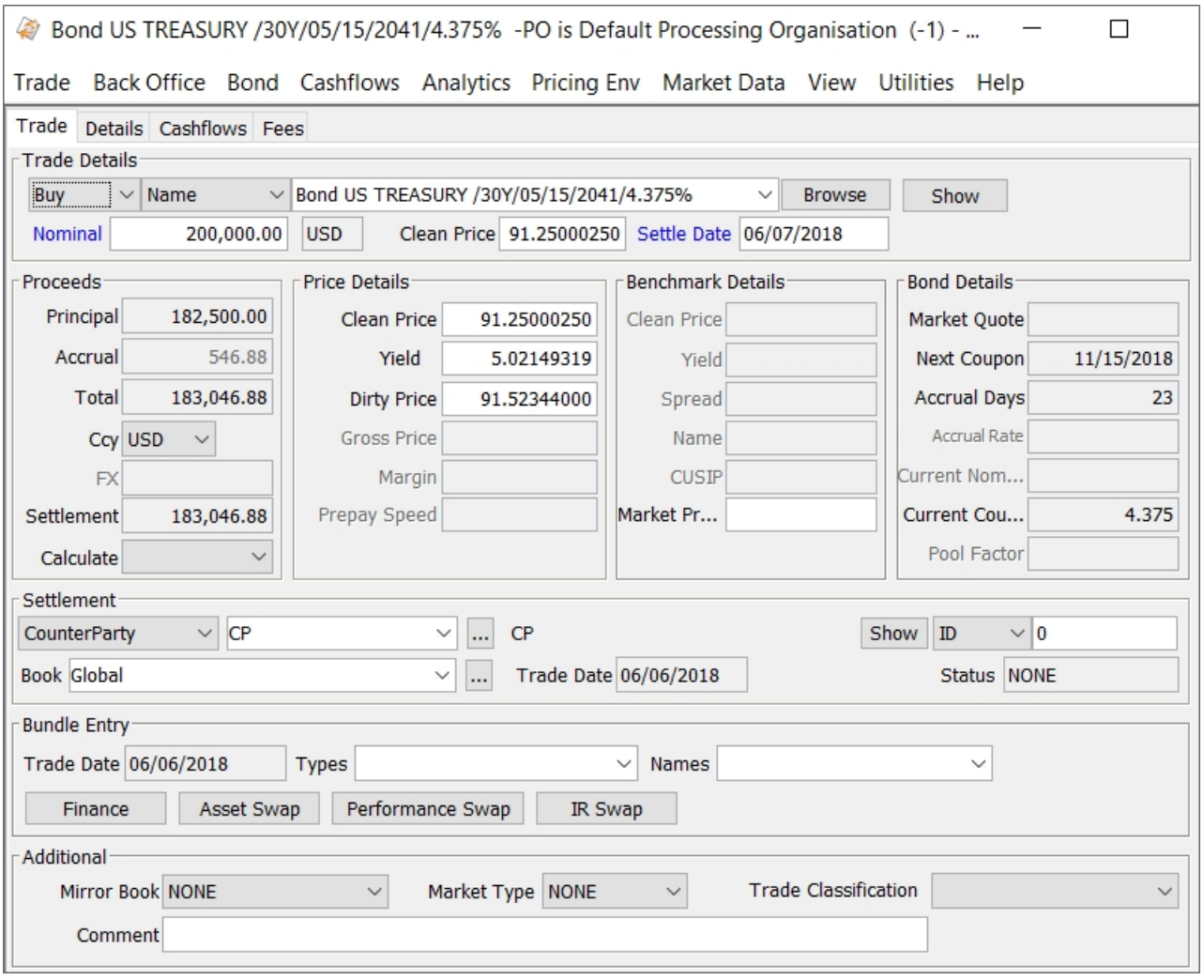
Navigate to **Trade > Fixed Income > Bond** to open the Bond Trade window, from the Calypso Navigator or from the Trade Blotter.

Prior to capturing an ABS bond trade, you need to define an ABS bond product.

▶ See Defining Bond Products for details.

14.1 Sample Asset Backed Bond Trade

When trading an asset backed bond (ABS bond), the pool factor on the settlement date will appear on the window after pricing as shown below.



Bond Trade Window

▶ See Capturing Bond Trades for complete details on capturing trades.

For an ABS bond trade:

- The trade amount is the quantity multiplied by the pool factor on the settle date.
- The Accrual (%) is expressed as a 100 basis. It represents the accrual value/pool factor.
- The pricer measures are computed as follows:
  - NPV_NET: It computes the NPV without taking the accrual into account. (This can be considered as a “clean” NPV whereas the NPV is a “dirty” one.)

    The NPV calculation takes into account: the accrual with pool factor impact, the factored cost, and the market cost with current factor application.

    NPV_NET = (Market Price * Quantity * Pool Factor) - Factored Cost

    Where Factored Cost = Quantity * Trade Clean Price * Pool Factor
  - NPV: The NPV calculation takes into account: the accrual with pool factor impact, the factored cost, and the market cost with current factor application.

    NPV = [(Market Price + Accrual) * Quantity * Pool Factor)] - Dirty Factored Cost

    Where Dirty Factored Cost = Quantity * Trade Dirty Price * Pool Factor
  - PREM_DISC: The Premium Discount calculation takes the Pool Factor into account.

    Premium/Discount = Trade Quantity * (Trade Price - Redemption Price) * Pool Factor

    The accrual/amortization of the premium takes into account: the WAL date or the early redemption date, and the pool factor.

    Amortization = Premium/Discount * (Val Date - Trade Settle Date) / (Maturity Date - Trade Settle Date)

    Where the Maturity Date is calculated using either the WAL Date or the Early Redemption Date.
  - ACCRUAL: The coupon amount is calculated with using the pool factor. However, if the pool factor is changing during the coupon period, the coupon is calculated by adding the different pool factor periods. All the accrual pricer measures are following the same rules.
  - WAL: Average time to receive the principal cashflows of the bond weighted by the individual principal payments.

14.2 Book Attributes

By default, accretion (PREM_DISC_YIELD) is calculated using the Retrospective Method, where the original trade yield is retroactively recalculated due to prepayments. This behavior can be modified using book attributes (**Calypso Navigator > Configuration > Books & Bundles > Trading Book** > Attributes ...):

- FixedBondAccretion – Allows specifying how to calculate the yield and cashflows used for accretion for fixed rate BondAssetBacked products. If set to ContractualToMaturity, the original accretion trade yield is calculated based on the original trade price and trade settle date, and this original yield will not change over time. The projected accretion cashflows are calculated using the standard mortgage constant payment formula based on the original contractual maturity date and the coupon rate, ignoring all prepayment assumptions and external cashflows.

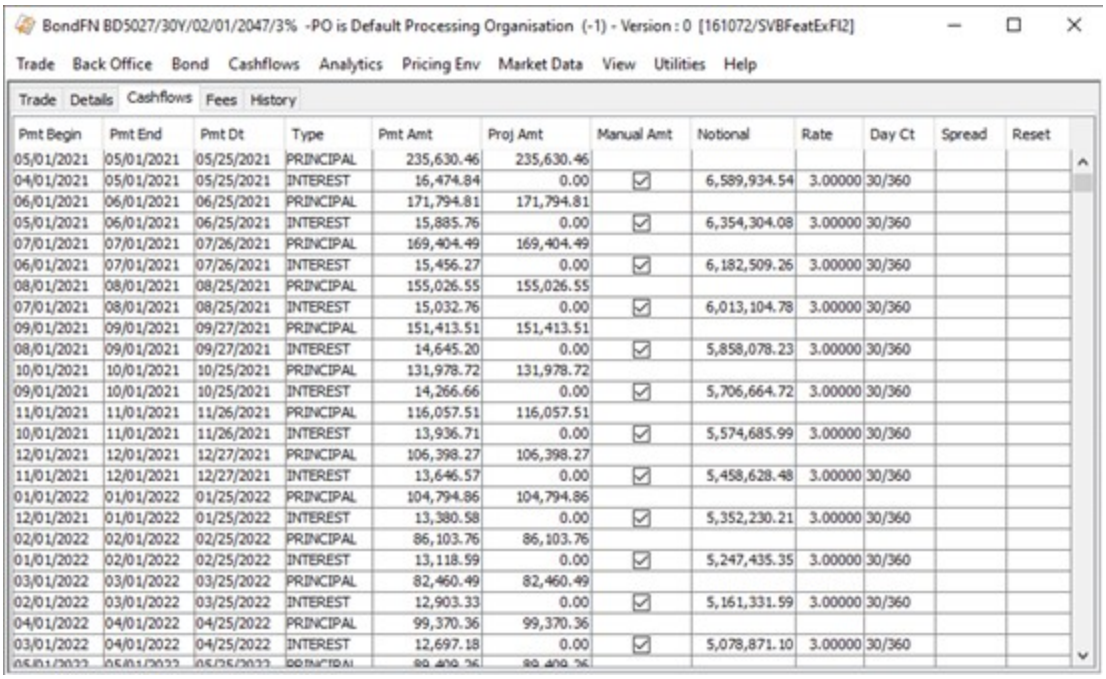
If set to Default or not set, the default Calypso behavior is used. Note that pricing behavior is not affected by this book attribute.

- FloatingBondAccretion – Allows specifying how to calculate the yield and cashflows used for accretion for floating rate BondAssetBacked products. If set to ProspectiveToMaturity, the current accretion yield is calculated by setting the present values to match between the previous accretion yield and the new index rates. The projected accretion cashflows are calculated using the standard mortgage constant payment formula based on the original contractual maturity date and the index rate, ignoring all prepayment assumptions and external cashflows.

  If FloatingBondAccretion is set to Default or not set, the default Calypso behavior is used. Note that pricing behavior is not affected by this book attribute.

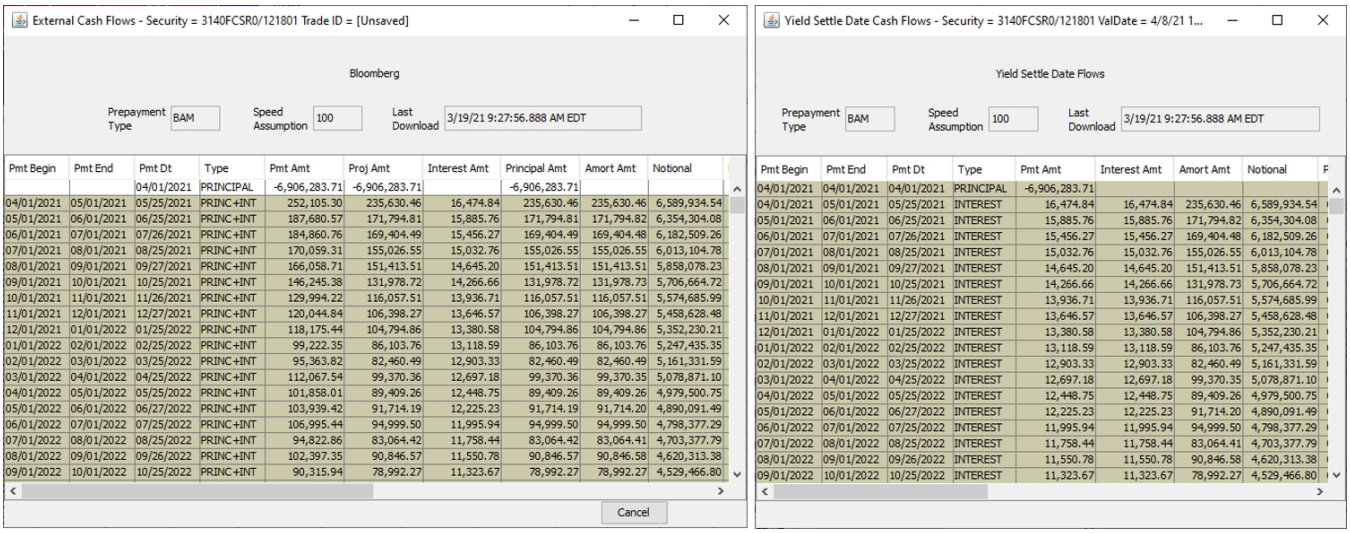
14.3 External Cashflows

When using external cashflows, the full forecasted Bloomberg cashflow schedule is integrated into Calypso. This includes future principal and interest payments based on the requested prepayment type and speed.



Pmt Begin	Pmt End	Pmt Dt	Type	Pmt Amt	Proj Amt	Manual Amt	Notional	Rate	Day Ct	Spread	Reset
05/01/2021	05/01/2021	05/25/2021	PRINCIPAL	235,630.46	235,630.46						
04/01/2021	05/01/2021	05/25/2021	INTEREST	16,474.84	0.00	☑	6,589,934.54	3.00000	30/360		
06/01/2021	06/01/2021	06/25/2021	PRINCIPAL	171,794.81	171,794.81						
05/01/2021	06/01/2021	06/25/2021	INTEREST	15,885.76	0.00	☑	6,354,304.08	3.00000	30/360		
07/01/2021	07/01/2021	07/26/2021	PRINCIPAL	169,404.49	169,404.49						
06/01/2021	07/01/2021	07/26/2021	INTEREST	15,456.27	0.00	☑	6,182,509.26	3.00000	30/360		
08/01/2021	08/01/2021	08/25/2021	PRINCIPAL	155,026.55	155,026.55						
07/01/2021	08/01/2021	08/25/2021	INTEREST	15,032.76	0.00	☑	6,013,104.78	3.00000	30/360		
09/01/2021	09/01/2021	09/27/2021	PRINCIPAL	151,413.51	151,413.51						
08/01/2021	09/01/2021	09/27/2021	INTEREST	14,645.20	0.00	☑	5,858,078.23	3.00000	30/360		
10/01/2021	10/01/2021	10/25/2021	PRINCIPAL	131,978.72	131,978.72						
09/01/2021	10/01/2021	10/25/2021	INTEREST	14,266.66	0.00	☑	5,706,664.72	3.00000	30/360		
11/01/2021	11/01/2021	11/26/2021	PRINCIPAL	116,057.51	116,057.51						
10/01/2021	11/01/2021	11/26/2021	INTEREST	13,936.71	0.00	☑	5,574,685.99	3.00000	30/360		
12/01/2021	12/01/2021	12/27/2021	PRINCIPAL	106,398.27	106,398.27						
11/01/2021	12/01/2021	12/27/2021	INTEREST	13,646.57	0.00	☑	5,458,628.48	3.00000	30/360		
01/01/2022	01/01/2022	01/25/2022	PRINCIPAL	104,794.86	104,794.86						
12/01/2021	01/01/2022	01/25/2022	INTEREST	13,380.58	0.00	☑	5,352,230.21	3.00000	30/360		
02/01/2022	02/01/2022	02/25/2022	PRINCIPAL	86,103.76	86,103.76						
01/01/2022	02/01/2022	02/25/2022	INTEREST	13,118.59	0.00	☑	5,247,435.35	3.00000	30/360		
03/01/2022	03/01/2022	03/25/2022	PRINCIPAL	82,460.49	82,460.49						
02/01/2022	03/01/2022	03/25/2022	INTEREST	12,903.33	0.00	☑	5,161,331.59	3.00000	30/360		
04/01/2022	04/01/2022	04/25/2022	PRINCIPAL	99,370.36	99,370.36						
03/01/2022	04/01/2022	04/25/2022	INTEREST	12,697.18	0.00	☑	5,078,871.10	3.00000	30/360		

The trade cashflows, external flows and yield settle date flows will now display the same consistent cashflows (BAM 100 prepayments).



Additional updates based on later requests will update the cashflows to either the known (historical) cashflows and/or update the forecasted cashflows based on new prepay assumptions.

14.3.1 Analytics and Positions

When using external cashflows, analytics and downstream processes will use the external cashflows.

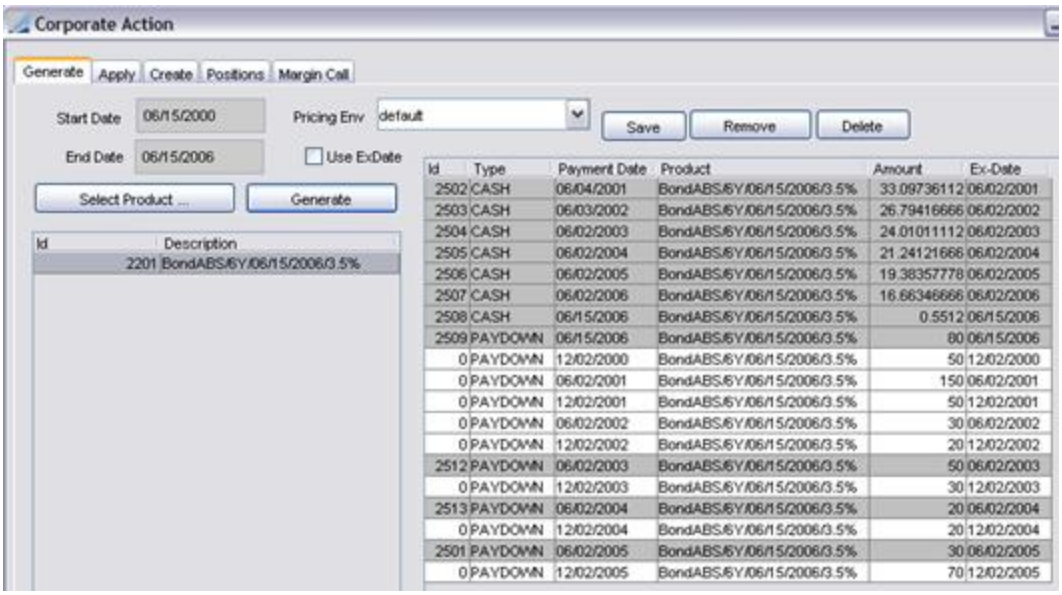
Pricer measures are calculated based on the forecasted external cashflows. This includes, but is not limited to, WAL, PV, NPV, BOOK_VALUE, MARKET_VALUE and PREM_DISC_YIELD.

Position based analyses and reports use forecasted external cashflows.

14.4 Paydown Corporate Actions

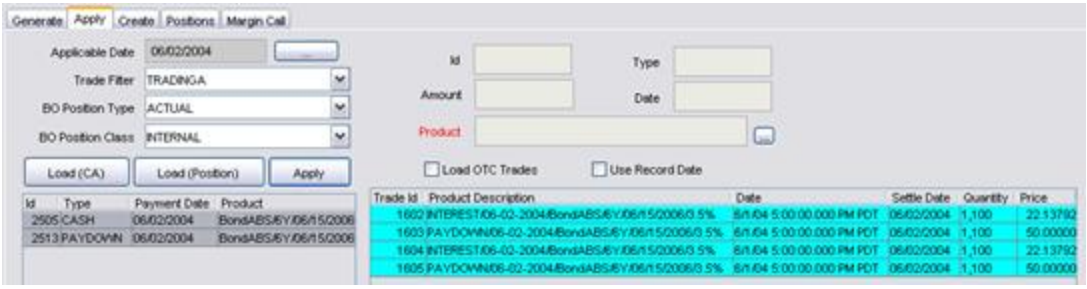
The Corporate Action type PAYDOWN renders the pool factor change. It is generated through the standard Corporate Action process. It impacts the position and generates realized P&L.

To generate the Corporate Actions, navigate to **Trade Lifecycle > Corporate Action > Corporate Action**.



- Enter a start date and end date.
- Click **Select Product** to select a product.
- Click **Generate** to generate the corporate actions for the selected dates and product.

  PAYDOWN corporate actions are generated for the notional and CASH corporate actions are generated for the coupons.
- Then select the Apply panel to apply the corporate actions to the product position.



The generated CA trades have an impact on both the realized P&L (see the Position report) and the cashflows (see the Back Office Position report, Cash panel).

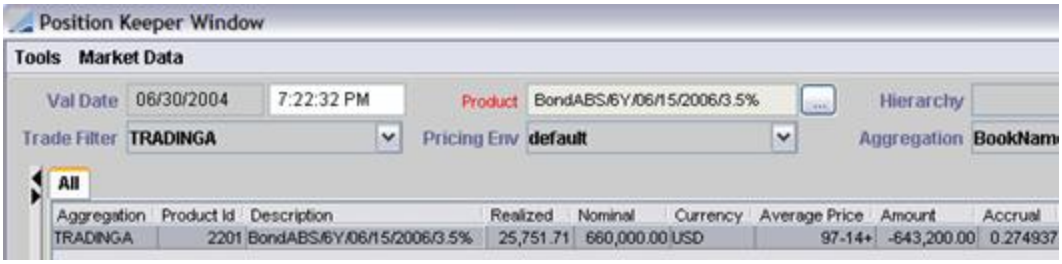
When the position of an ABS bond is sold after the CA has been run for paydown and coupon, the paydown is incorrectly reversed. In order to consider the CA paydown record date as inclusive, you need to add the following value to the domain *CA_PAYDOWN_RECORD_DATE_INC*:

Value = recordDateInclusive

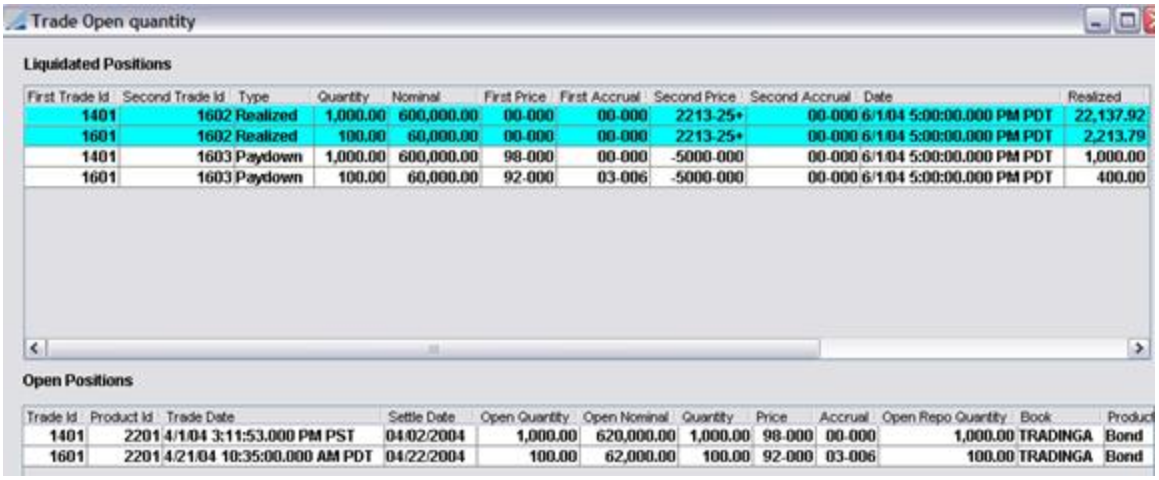
Comment = true

In this case, the CA paydown is not reversed as the record date is inclusive. The domain is empty by default (CA paydown record date is not inclusive).

14.4.1 Position Report

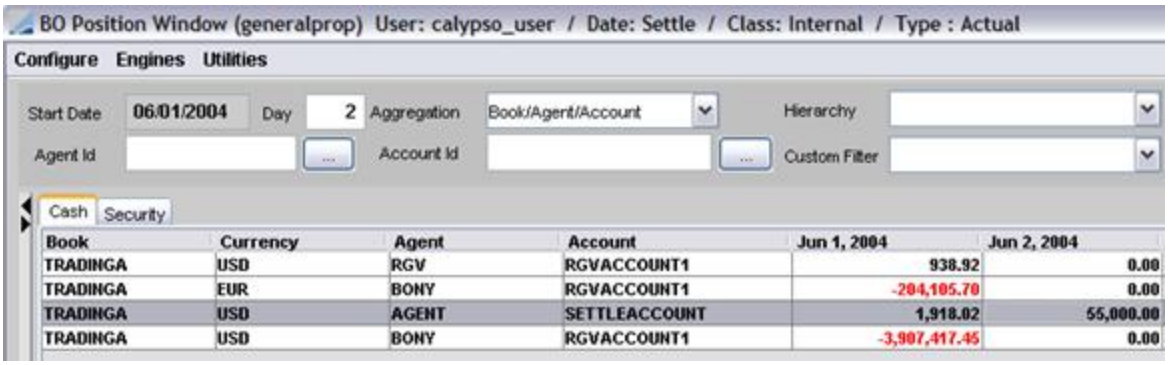


If you double-click a row, you can see the details of the realized P&L as shown below.



You can see that the paydowns actually impact the realized P&L.

14.4.2 Back Office Position Report

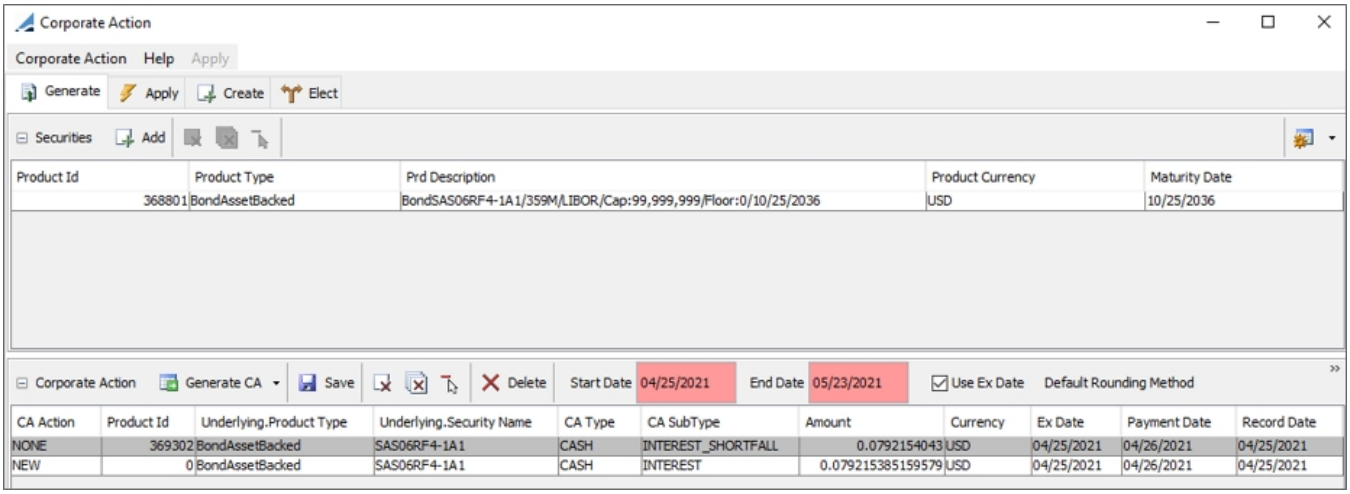


» Double-click a cell to see the details.

14.5 Shortfall Reimbursement Corporate Actions

The Corporate Action types PRINCIPAL_REIMBURSE, PRINCIPAL_SHORTFALL, INTEREST_REIMBURSE, and INTEREST_SHORTFALL are generated through the standard Corporate Action process.

To generate the Corporate Actions, navigate to **Trade Lifecycle > Corporate Action > Corporate Action**.



- Enter a start date and end date.
- Click **Add** to select a product.
- Click **Generate CA** to generate the corporate actions for the selected dates and product.

  The corporate actions produced by the Shortfalls and Reimbursements are as follows:

  INTEREST_SHORTFAL: MODEL=CASH | SUBTYPE=INTEREST_SHORTFALL

  INTEREST_REIMBURSE: MODEL=CASH | SUBTYPE=INTEREST_REIMBURSE

  PRINCIPAL_SHORTFAL: MODEL=CASH | SUBTYPE=PRINCIPAL _SHORTFALL

  PRINCIPAL_REIMBURSE: MODEL=CASH | SUBTYPE=PRINCIPAL _REIMBURSE
- Then select the Apply panel to apply the corporate actions to the product position.

14.6 Accounting Events

The accounting event PAYDOWN_PL renders the realized P&L on paydowns.

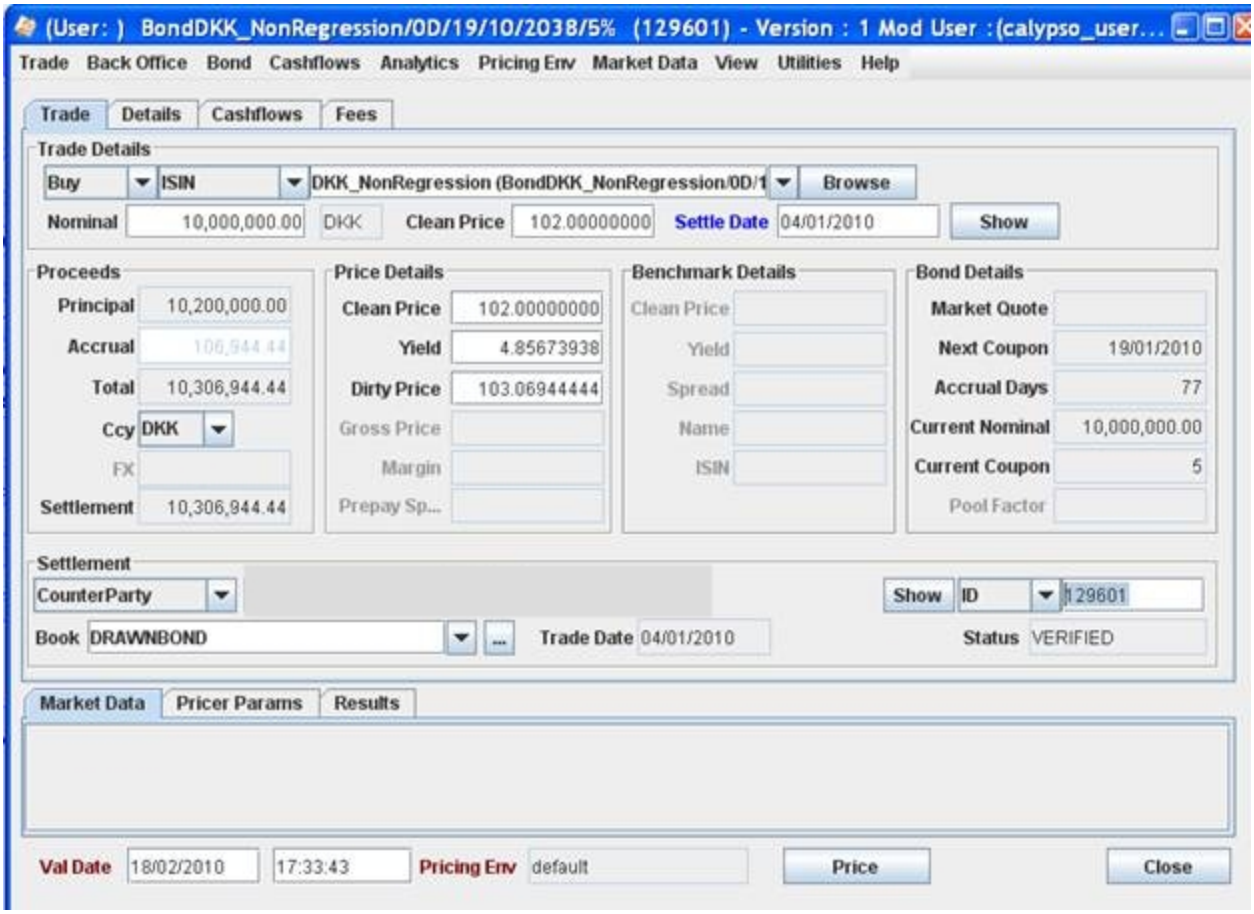
15. Capturing Danish Mortgage Bond Trades

Navigate to **Trade > Fixed Income > Bond** to open the Bond Trade window, from the Calypso Navigator or from the Trade Blotter.

Prior to capturing a Danish Mortgage bond trade, you need to define a Danish Mortgage bond product.

▶ See Defining Bond Products for details.

15.1 Sample Danish Mortgage Bond Trade



▶ See Capturing Bond Trades for complete details on capturing trades.

15.2 Drawing Corporate Action

If domain "DMBS_DrawsOnRepos" contains Value = True, include Repos in CA Trades against Processing Org (built from PL Position) on events with model/subtype REDEMPTION/DRAWING - If Value = false or empty, exclude Repos in CA Trades against Processing Org.

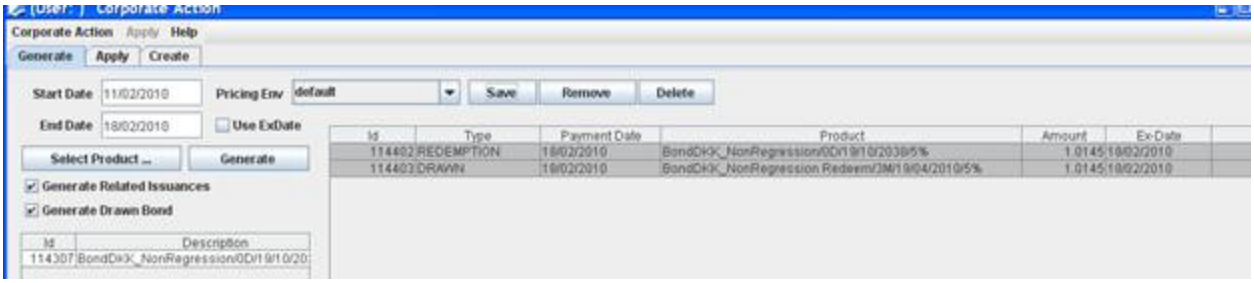
15.2.1 Legacy Drawing Corporate Action

To generate the Corporate Actions, navigate to **Trade Lifecycle > Corporate Action > Corporate Action**.

At drawing date, the position on the master bond is amortized by the drawn amount, and a drawn position is generated on the drawn bond. Both bonds can be traded.

Generating the Corporate Action

Select the Generate panel, and generate the corporate action at drawing date on the master bond.



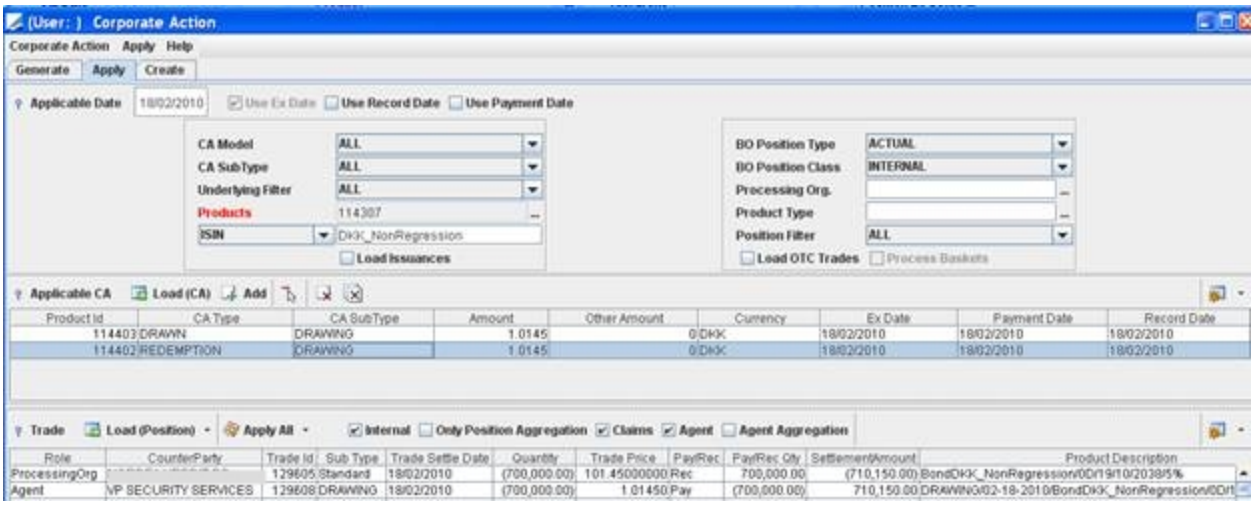
If "Generate Drawn Bond" is checked, the system will automatically create the drawn bond (in case it has not been created in the bond product definition).

If "Generate Drawn Bond" is clear, the system will not create the drawn bond but will stop the CA process in case the drawn bond does not exist.

Applying the Corporate Action

Select the Apply panel.

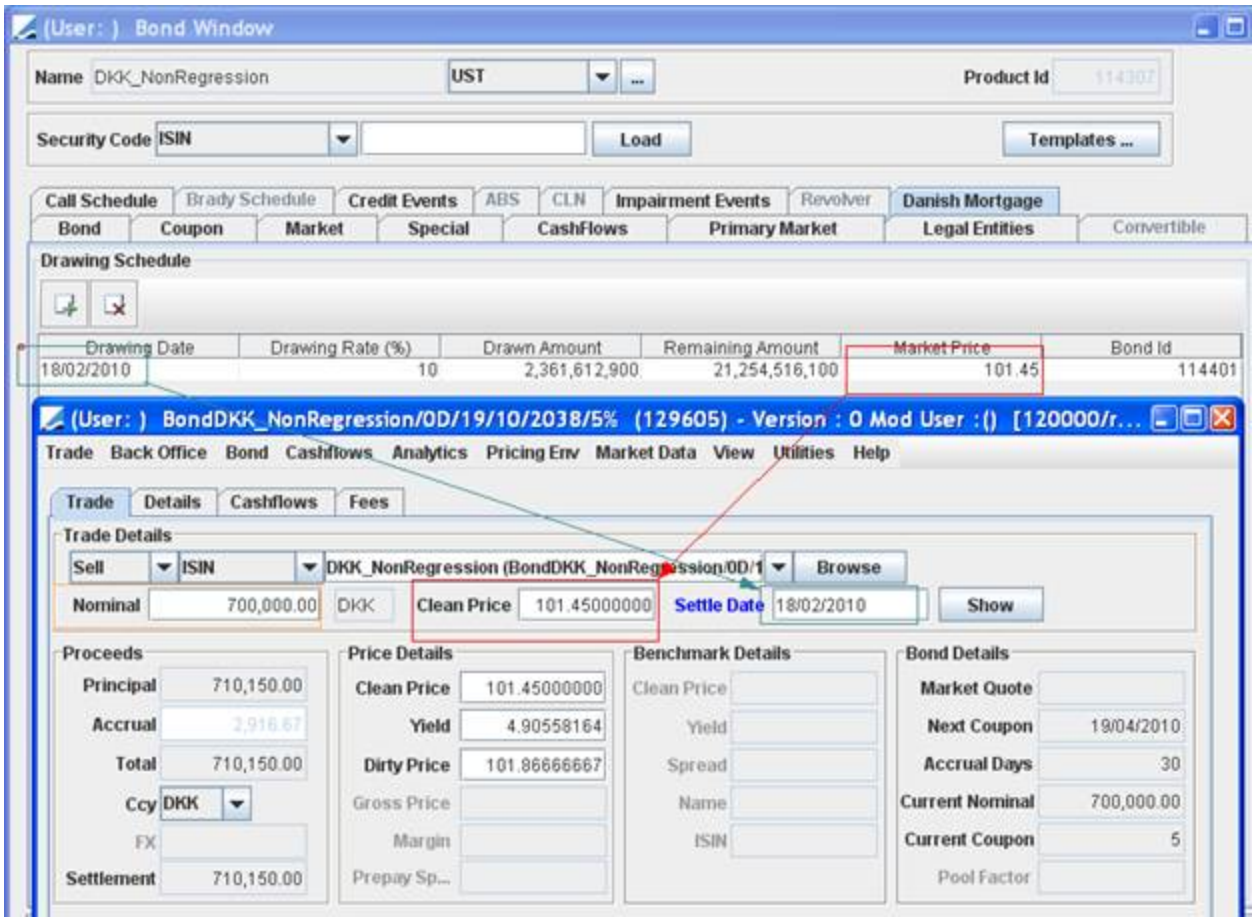
The master bond is amortized by the amount of the drawing (drawing rate applied to the open position) using a REDEMPTION corporate action.



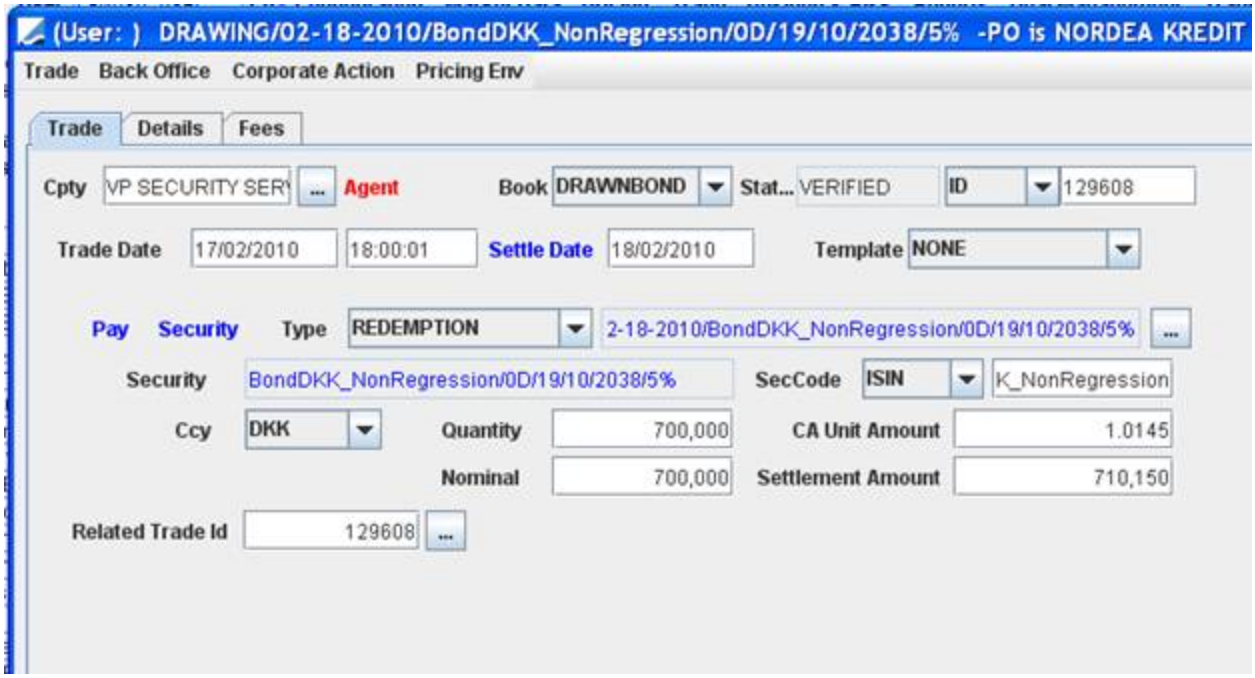
It creates two CA trades:

- One CA trade type REDEMPTION / DRAWING between the book and the PO in order to update the P&L. Setting the environment property **BOND_REDEMPTION_TRADE=true** will generate a Sell trade instead.

  The clean price is computed using the market price of the drawing schedule.



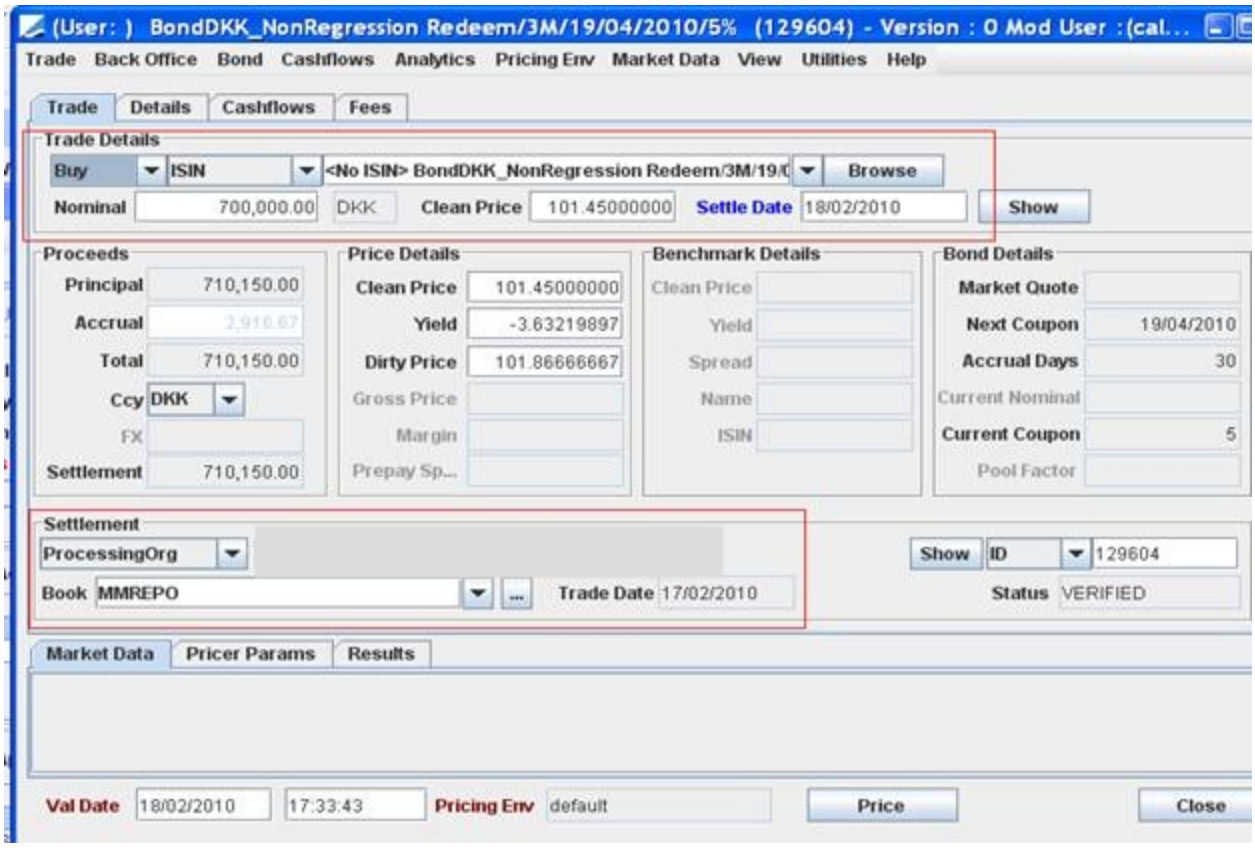
- The other trade type REDEMPTION / DRAWING between the book and the Agent will carry out the SECURITY transfer to the agent as well as the message and accounting entries.



A position is created on the drawn bond through the DRAWING corporate action. Two CA trades are created:

- One CA trade type DRAWING / DRAWING between the book and the PO in order to update the P&L. Setting the environment property BOND_REDEMPTION_TRADE=true will generate a Buy trade.

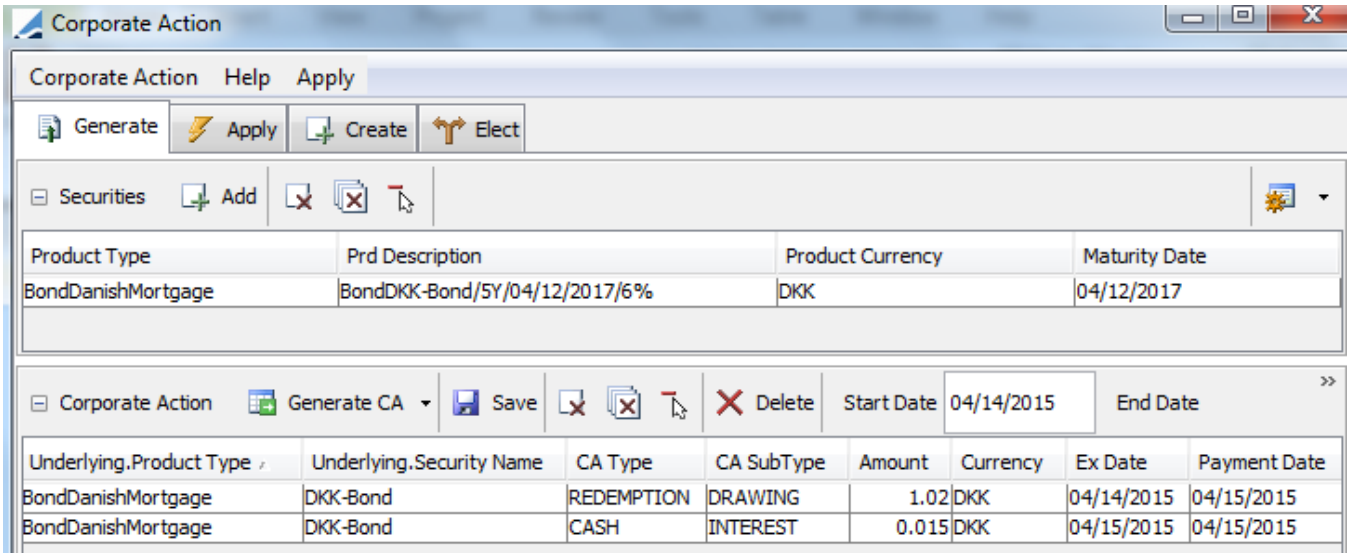
  The trade is created on the same book as the "master" book by default, or on the book specified in book attribute "Drawn MM Book" on the "master" book.



- The other CA trade type DRAWING / DRAWING between the book and the Agent will carry out the SECURITY transfer from the agent as well as the message and accounting entries.

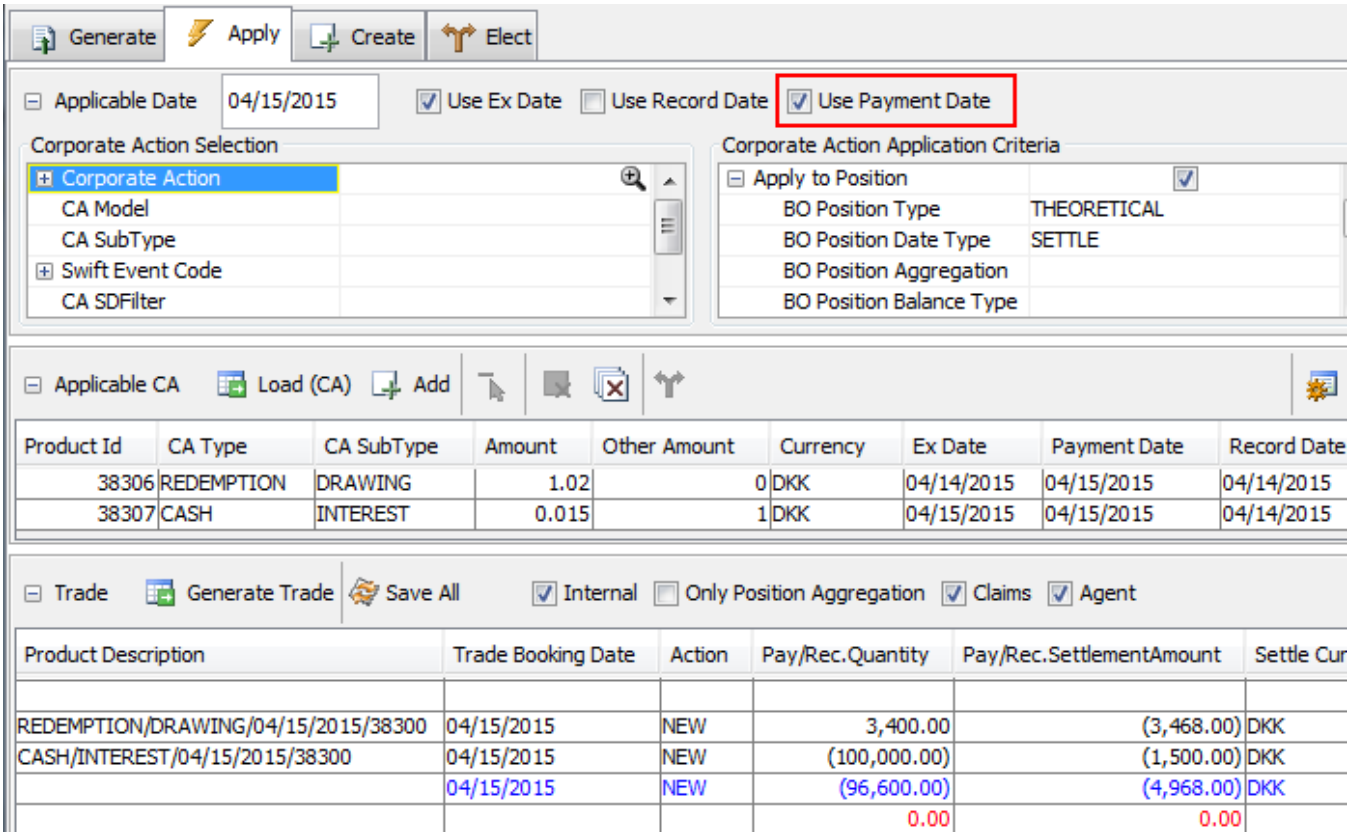
15.2.2 TARGET2 Compliant Corporate Actions

To generate the Corporate Actions, navigate to **Trade Lifecycle > Corporate Action > Corporate Action**.



The system creates two corporate actions for Danish Mortgage Bonds on the same payment date: REDEMPTION/DRAWING in order to amortize the bond by the drawn amount, and CASH/INTEREST in order to generate the coupon amount.

The corporate actions should be applied by payment date so that they can be created together.



16. Capturing Floating Rate Notes Trades

Navigate to **Trade > Fixed Income > Bond** to open the Bond Trade window, from the Calypso Navigator or from the Trade Blotter.

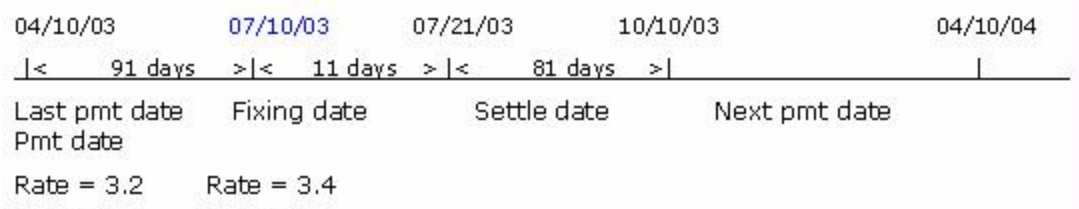
Prior to capturing an FRN bond trade, you need to define an FRN bond product.

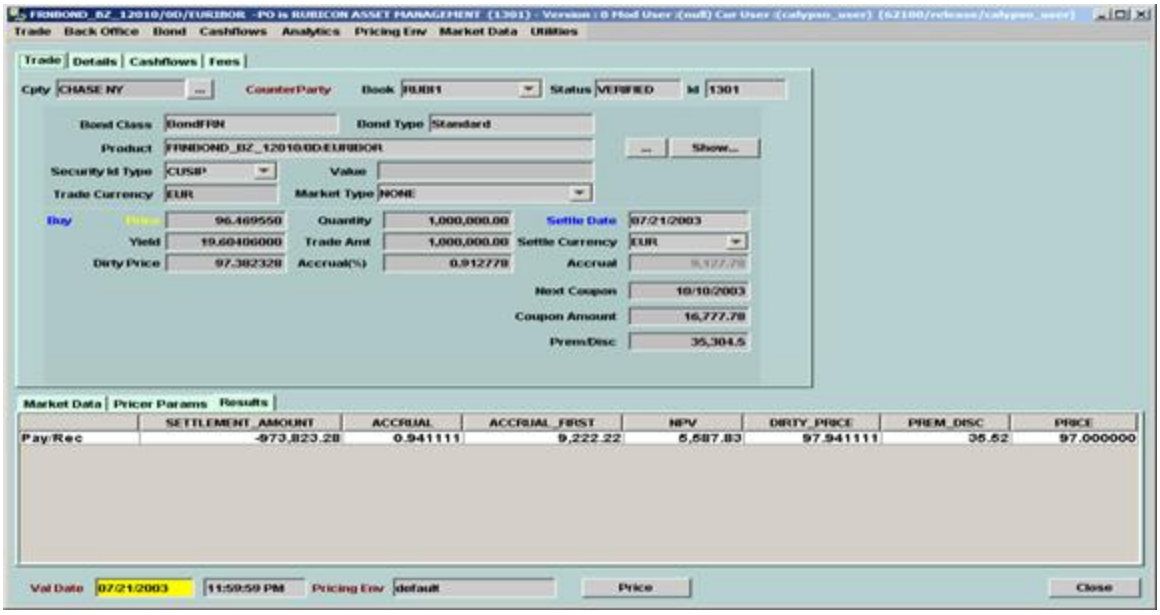
▶ See Defining Bond Products for details.

16.1 Sample FRN Bond Trade

When trading the bond in between two coupon payment dates, the system calculates the accruals and coupon payment at settlement date based on the past fixing rates since last coupon payment.

Based on the bond definition, BOND_12010 (no compounding method), Selling 1,000,000 shares traded at a settlement date = 07/21/03.





▶ See Capturing Bond Trades for complete details on capturing trades.

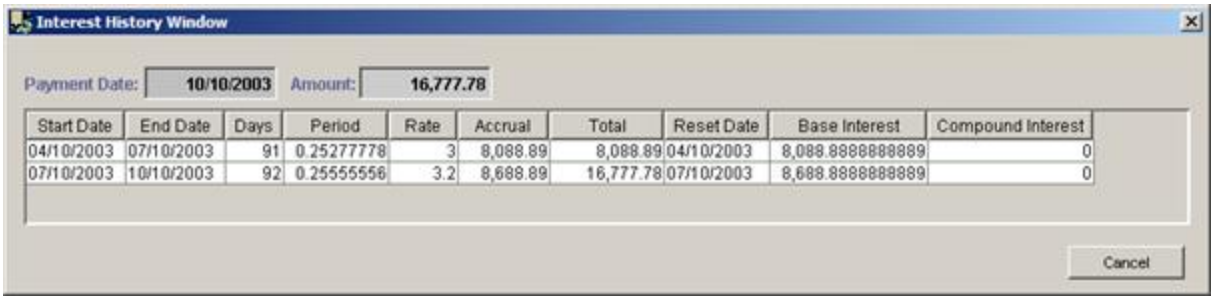
At Settlement date:

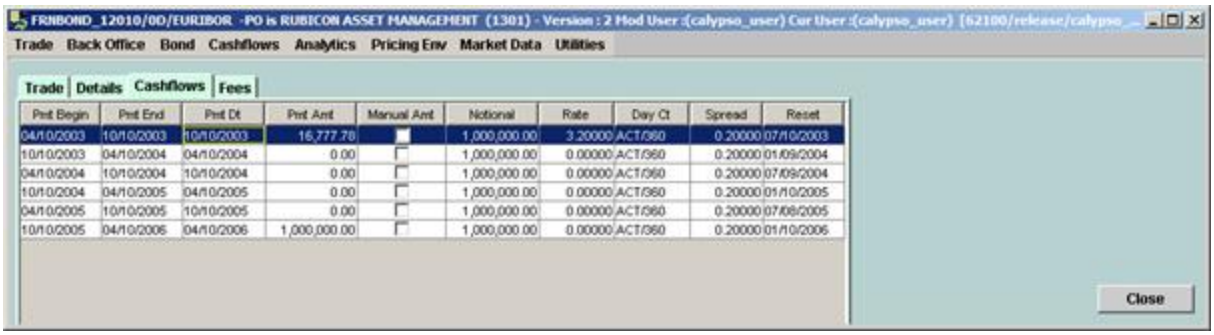
- Coupon Amount: **16,777.89**
  = ((91 * 3.2 * 1,000,000.00)/ 36000) + ((92 * 3.4 * 1,000,000.00)/36000)
- Accrual: **9,127.78**
  = ((91 * 3.2)/360 + (11 * 3.4)/360) * 1,000,000.00
- Accrual (%): **0.912778**
  = ((91 * 3.2%)/ 36000) + ((11 * 3.4%)/36000)
- Dirty Price: **97.382328**
  = Clean Price + accrual (%) = 96.46955 + 0.912778
- Prem/Disc: **35,304.5**
  = (Redemption Price - Clean Price) / 100 * Quantity
  = ((100 - 96.46955)/100) * 1,000,000

At Value date:

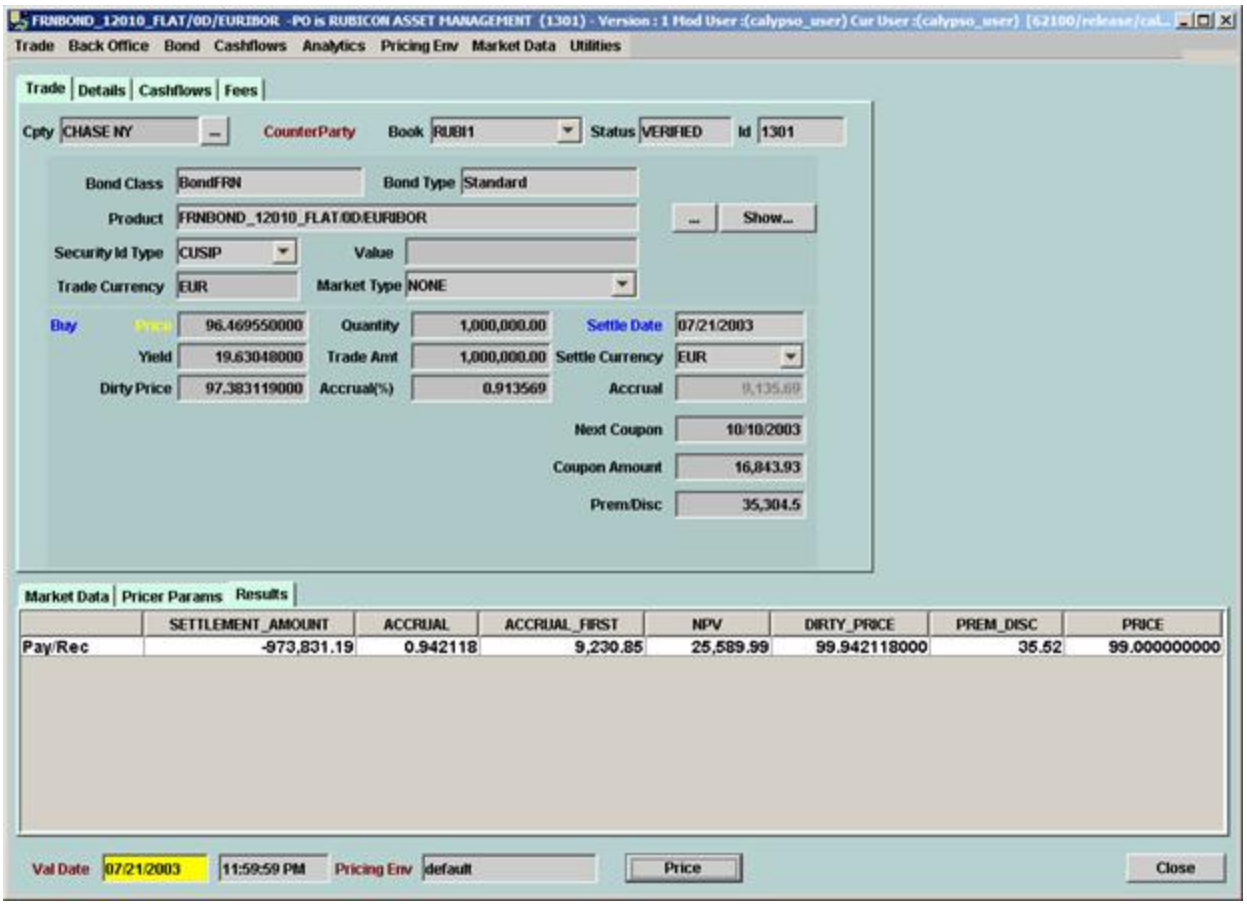
- NPV: 5,587.83
  Discounting the coupon amount calculated previously at value date (07/21/03)
  = (Dirty Price at Settle Date * Quantity) – (Dirty Price at Value Date * Quantity)
  = ((99.382328 – 97.941111) / 100) * 1,000,000
- PREM_DISC = **35.52**
  = (((96.46955 – 100) / 100) / 994) * 1,000,000
- ACCRUAL_FIRST = **9,222.22**
  = ((91 * 3.2)/360 + (12 * 3.4)/360) * 1,000,000.00
- DIRTY_PRICE = **97.941111**
  = 97 + 0.941111

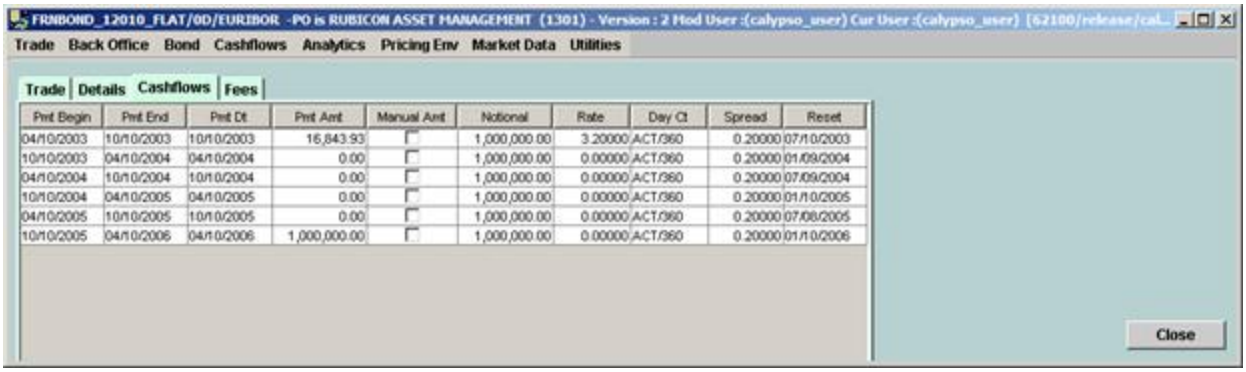
By looking at the cashflows of the trade, you have the option to see the internal flows from which the coupon is composed of.



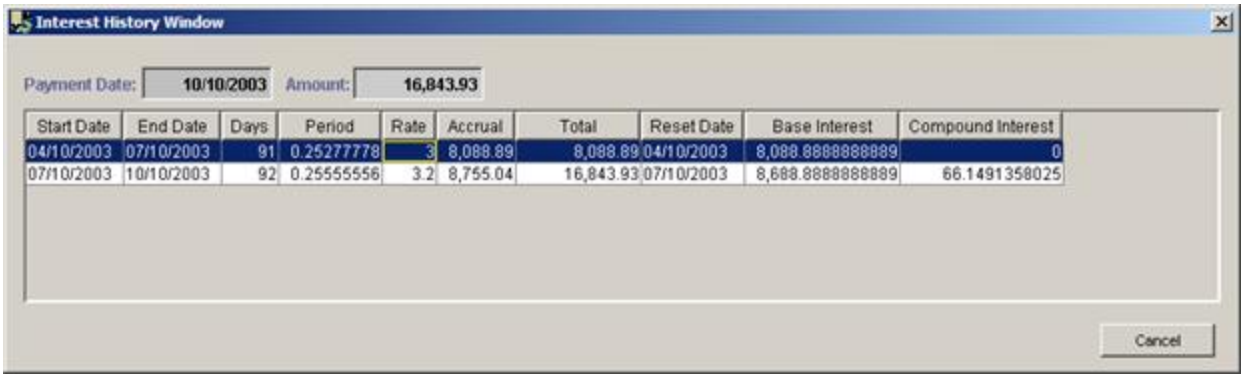


On the same bond, if the compounding method = flat, the results become:





Pmt Begin	Pmt End	Pmt Dt	Pmt Amt	Manual Amt	Notional	Rate	Day Ct	Spread	Reset
04/10/2003	10/10/2003	10/10/2003	16,843.93		1,000,000.00	3.20000	ACT/360	0.20000	07/10/2003
10/10/2003	04/10/2004	04/10/2004	0.00		1,000,000.00	0.00000	ACT/360	0.20000	01/09/2004
04/10/2004	10/10/2004	10/10/2004	0.00		1,000,000.00	0.00000	ACT/360	0.20000	07/09/2004
10/10/2004	04/10/2005	04/10/2005	0.00		1,000,000.00	0.00000	ACT/360	0.20000	01/10/2005
04/10/2005	10/10/2005	10/10/2005	0.00		1,000,000.00	0.00000	ACT/360	0.20000	07/08/2005
10/10/2005	04/10/2006	04/10/2006	1,000,000.00		1,000,000.00	0.00000	ACT/360	0.20000	01/10/2006



Start Date	End Date	Days	Period	Rate	Accrual	Total	Reset Date	Base Interest	Compound Interest
04/10/2003	07/10/2003	91	0.25277778	3	8,088.89	8,088.89	04/10/2003	8,088.8888888889	0
07/10/2003	10/10/2003	92	0.25555556	3.2	8,755.04	16,843.93	07/10/2003	8,688.8888888889	66.1491358025

17. Capturing Inflation Bond Trades

Navigate to **Trade > Fixed Income > Bond** to open the Bond Trade window, from the Calypso Navigator or from the Trade Blotter.

Prior to capturing an Inflation bond trade, you need to define an Inflation bond product.

▶ See Defining Bond Products for details.

17.1 Quotes Specification

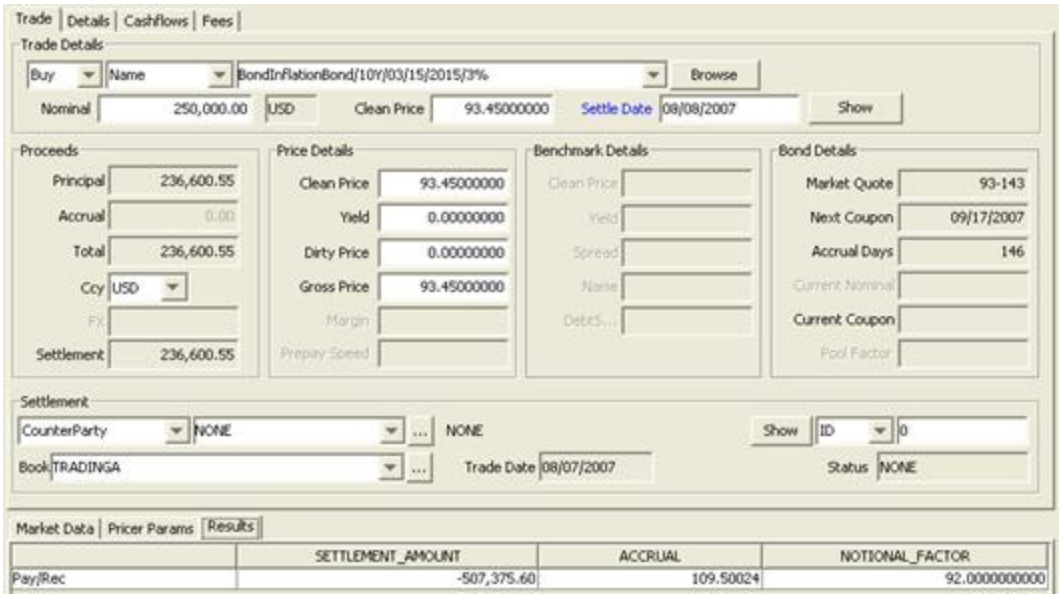
Prior to trading this type of bond, you need to check the quotes. Choose **Pricing Env > Check** to check the quotes. The Check Pricing Env window will appear as shown below.

Missing Quotes

Quote Name	Quote Date
Inflation.USD.CPI	03/01/2007
Inflation.USD.CPI	08/01/2007
Bond.InflationBond.03-15-2015.3.00000	08/07/2007
Bond.InflationBond.03-15-2015.3.00000.IndexFactor	08/08/2007

You need quotes for the index “Inflation.Currency.Index” 3 months before and 2 months before, a quote for the bond, and a quote for the index factor.

17.2 Sample Inflation Bond Trade

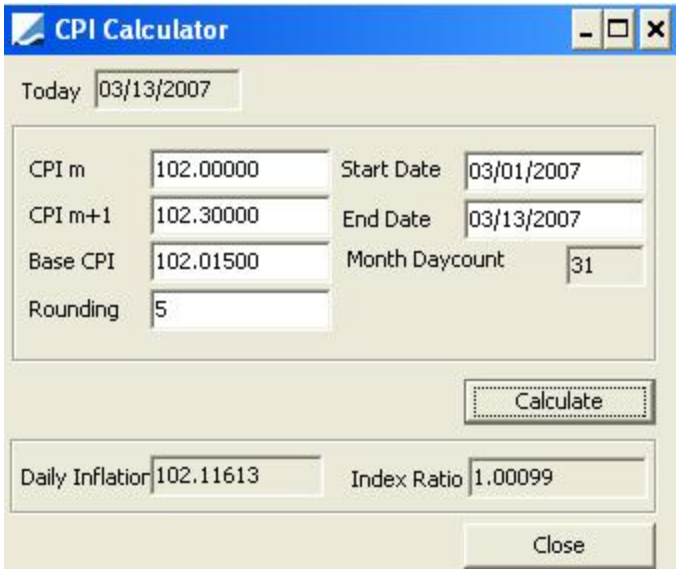


▶ See Capturing Bond Trades for complete details on capturing trades.

» Enter a gross price and a quantity. We consider that the gross price already takes the index factor into account.

The yield, dirty price and clean price will be computed. The Clean Price in the Market Price (quote entered on the bond). The Accrual (%) is the accrual amount multiplied by the index factor on the settlement date.

» Choose **Market Data > Utilities > CPI Calculator** to simulate the notional factor calculation as shown below.



– Enter the CPI value 3 months ago (CPI_m), the CPI value 2 months ago (CPI_{m+1}), and the base CPI value (specified in the Special panel of the bond). Enter a number of decimal places in the Rounding field as applicable. Then click **Calculate**.

17.2.1 CPI Pricer Measures

NPV = (Dirty Price on Val Date - Dirty Price of Buy Trade) * Nominal Amount

Notional Factor = Index Factor on Val Date (interpolation of the index values from 3 months and 2 months)

Price = Market Price on Val date * Index Factor on the settlement date

Dirty Price = Price + (Accruals * Index Factor on the settlement date)

17.2.2 RPI Pricer Measures

Index Ratio = (RPI figure 8 months prior to last coupon date) / (RPI figure 8 months before issuing date (base RPI))

English Market rounding rules:

- Interest and redemption payments for the 2% Index-linked Treasury Stock 2006 (ISIN GB0009061317) and 2.5% Index-linked Treasury Stock 2011 (ISIN GB0009063578) are rounded DOWN to 2 decimal places per £100 nominal.
- For all other index-linked gilts with first issue dates before 2002 the Interest and redemption payments are rounded DOWN to 4 decimal places per £100 nominal.

- For index-linked gilts with first issue dates of 2002 onwards, the Interest and redemption payments are rounded TO THE NEAREST 6 decimal places per £100 nominal.

Interest Rate for each payment = Coupon rate (usually fixed rate) adjusted to the RPI movement = (Coupon rate / n)*(RPI 8cp / Base RPI)

where n = number of annuities /year (usually 2), Base RPI = RPI figure 8 months before issuing date (figure to be used for the calculations of interest payments during the bond life), and RPI 8cp = RPI figure 8 months prior to last coupon date.

Coupon = adjusted Coupon rate (rounded down to 4 decimals) * nominal

Accrued interests = Adjusted coupon rate * (number of days since last coupon date / number of days in coupon period) * nominal

Redemption Payment = Nominal holding * (RPI 8cp / Base RPI)

UK Gilt already has the indexation built into the quoted price. As a result, the indexation calculation applies only to accrued interests.

RPI values are published monthly, around the 17th of each month. It is entered into Calypso under the quote name: "Inflation.GBP.RPI.Tenor" every first of each month.

17.2.3 ABS Inflation Bonds

Inflated coupon = (RPI/CPI index relative to coupon end date) / Index value specified on bond * coupon rate / # periods per year (e.g. 2 for SA)

Accrual = Inflated coupon * [(accrued # of days / # of days in the period) * Trade Quantity] / 100 * Face Value (accrual date).

17.2.4 Valuation of Inflation Bonds

Note that TIPS should use PricerBondUST.

Example of valuation on 04/25/04, settlement date 04/26/2004.

» When pricing using index values, you only need the market price of the bond on 04/25/2004.
  – PRICE = Market Price of the bond on val date * Index Factor on settle date

- ACCRUAL = Accrual as of settle date * Index Factor on settle date
- NPV = (Dirty Price * Open Position) – Initial settlement amount
- ACCRUAL_BO = Accrual as of the 05/29/02 * Index Factor 05/29/02

18. Capturing BondMMInterest and BondMMDiscount Trades

Navigate to **Trade > Money Market > CD/CP/DN** (menu action `trading.TradeMoneyMarketFrontWindow`) to open the Money Market Trade window, from the Calypso Navigator or from the Trade Blotter.

These bonds can also be traded using the standard Bond Trade window.

Prior to capturing bond MM trades, you need to specify bond product templates using **Configuration > Fixed Income > Bond Product Definition** for bond products BondMMInterest, BondMMDiscount, and BondMMDiscountWithAI. The bond products will be created on-the-fly from the Money Market window. You can also create the bond MM products directly.

For certain MM Discount products (Chinese bonds), you can use the bond selector window to choose a product.

▶ See Defining Bond Products for details.

Bond MM Quick Reference

Entering Trade Details

» By default, the window is configured in "Quick Entry" mode. In that mode, you can select a bond product template and the actual bond product will be created on-the-fly. Then enter the fields as needed, they are described below.

» Or you can disable the "Quick Entry" mode, and hit F10 to load a trade template to populate the worksheet with default values. Then modify the fields as applicable.

Or you can enter the trade fields directly. They are described below.

Note that the Trade Date is entered in the Details panel.

» Proceed to the other panels as applicable.

Saving a Trade

» Hit F5 to save the trade, or choose **Trade > Save**.

You can also hit F3 to save the current trade as a new trade, or choose **Trade > Save As New**.

You can also hit F12 to save the trade using any action available in the workflow, or choose **Trade > Save Action**. You will be prompted to select an action.

A description will appear in the title bar of the trade worksheet, a trade id will be assigned to the trade, and the status of the trade will be modified according to the workflow configuration.

Pricing a Trade

» You can choose **Pricing Env > Check** to check if all required pricing data are available in the Pricing Environment.

» Click **Price** to price the trade.

Financing a Trade

» Once a bond trade has been saved, you can choose **Bond > Finance Trade** to enter a related repo trade. If the bond belongs to a bundle, the repo trade will be added to the bundle as well.

Or you can click **Finance Trade** in the Bundle Entry area.

In the Bundle Entry area, you can also enter an asset swap by clicking **Asset Swap**, a performance swap by clicking **Performance Swap**, or an interest rate swap by clicking **IR Swap** – Help is available from these windows.

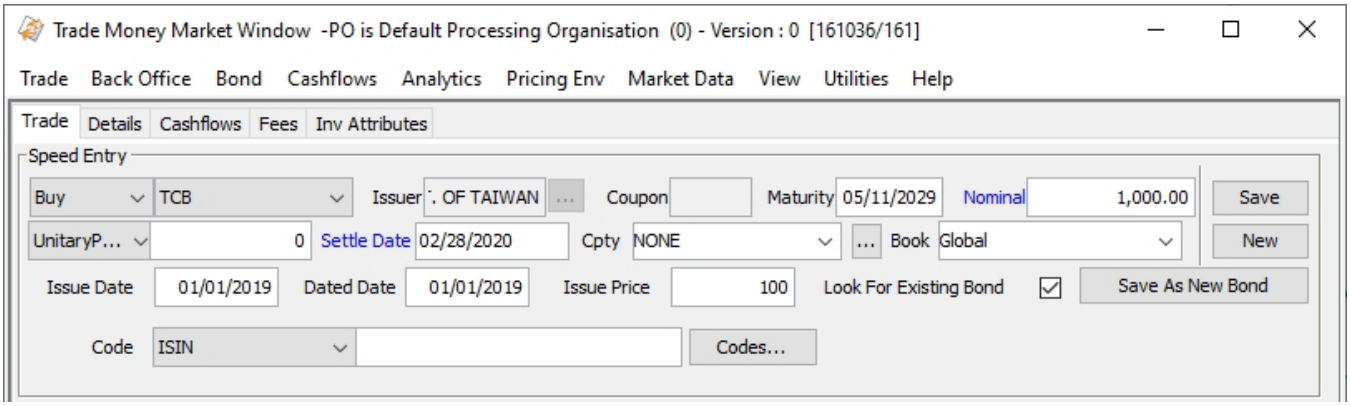
Trade Lifecycle

» You can allocate the trade to multiple books and legal entities using **Back Office > Allocate**.

» You can terminate the trade using **Back Office > Terminate**.

» You can apply corporate actions using **Trade Lifecycle > Corporate Action > Corporate Action**, or using the CORPORATE_ACTION scheduled task.

18.1 Quick Entry Mode



» Select the direction of the trade and select a bond product template from the adjacent field. The actual bond product will be created on-the-fly. Then enter the other fields as needed.

» You can enable the other areas of the trade using the View menu.

▶ See Capturing Bond Trades for complete details on the other areas.

» Since those trades do not use the standard Bond Trade window, you need to specify their trade window so that when you open the trade from any report or blotter in the system, it will know which window to display.

▶ See Trade Window Setup for details.

» You can click **Save** to save the trade and create the bond product. Then if you modify any fields, choose the desired outcome:

- Create a new bond product and amend the previously saved trade: Click **Save** again.
- Create a new bond product and save a new trade: Click **Save As New Bond**.
- Save a new trade and do not modify the previously created bond product: Hit F3 or choose **Trade > Save As New**.

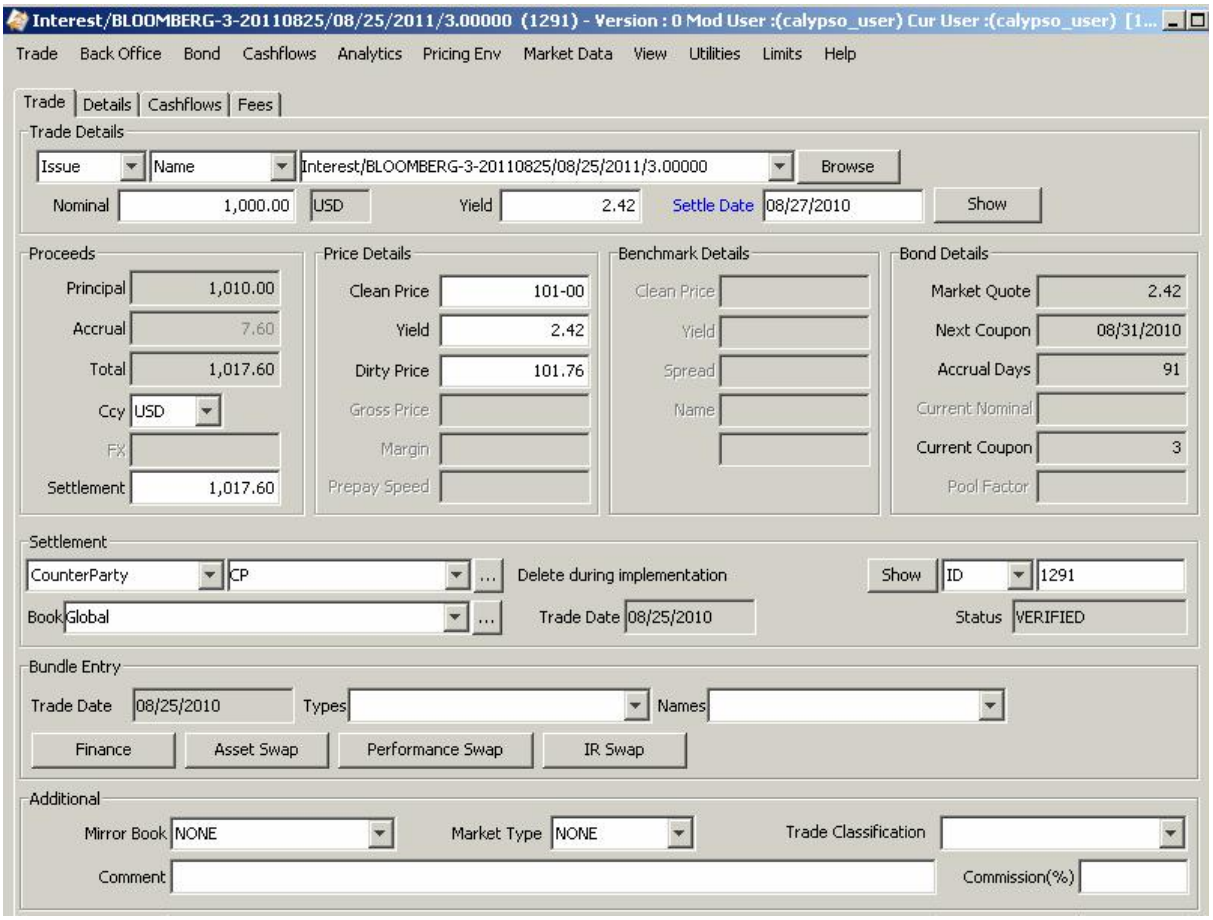
Speed Entry - Fields Details

Fields	Description
Buy / Sell / Issue	Select Buy or Sell as applicable to indicate the direction of the trade from the book's perspective. You can also select Issue to issue a bond from the processing org. You can switch between buy, sell, and issue using the space bar. For an issue, the bond should have the following characteristics: • The Issuer should be the processing org of the selected book. • The Issue Paying Agent (IPA) should be populated on the bond. The IPA handles the coupon payments for the issuer, and will be used in the corporate action process. SDIs should be defined for the bond's IPA for the IPA role.
Bond Product Template	Select a bond product template for a "BondMMInterest", "BondMMDiscount" or "BondMMDiscountWithAI" bond product. Bond product templates are created using the **Templates** button in the Bond Definition window using **Configuration > Fixed Income > Bond Product Definition**. The Calypso Navigator must be restarted in order to load the template into the drop down menu.
Issuer	Displayed from the bond product template.
Coupon	Coupon rate displayed from the bond product template.
Maturity	Displayed from the bond product template, but you can enter a different maturity if desired.
Nominal/Quantiity	Enter the amount of nominal that is traded. This is the original nominal. Double-clicking the label will change it to Quantity (nominal/face value). You can enter the quantity if the quote type on the bond is set to "Price", "UnitaryPrice", or "GrossUnitaryPrice".
Quote Type	Defaults to the quote type of the bond product, but you can select a different quote type if desired.

Fields	Description
	Defaults to the market quote as of the trade date if any. Modify as applicable. If there is no market quote and MMKT_FROM_QUOTE is false, we price the bond from curve to produce an initial price for trading. For bonds quoted using Price32, you can enter the trade's price with two, three, or four digits after the dash. The first two digits represent the number of thirty-seconds (between 1 and 31). If the price contains 3 digits, the third digit represents the number of eighths of a thirty second (or 1/256, between 1 and 7). A bond price entered as "99-022" will be read as [99 + 2/32 + 2/8(1/32)], or 99.0703125. The third digit can also be +, indicating 4/8 of a thirty second. If the price contains 4 digits, the last two digits represent the number of sixteenths of a thirty second (or 1/512, between 1 and 15). Note that the four-digit logic only applies to bonds with the tick size 512.
Settle Date	The settlement date defaults to the trade date + the number of settle days specified in the bond template. The settlement date uses the holiday calendar of the bond template to identify business days. If you change the trade date in the Details panel, double-click the Settle Date label to update the settlement date accordingly.
Cpty	You can select a counterparty provided you have set up favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character. Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Otherwise, click ... to select a counterparty from the Legal Entity Chooser. You can also type Ctrl-F to invoke the Legal Entity Chooser, or directly enter a Legal Entity short name.
Book	Trading book to which the trade belongs. Defaults to the book selected in the User Defaults. You can modify as applicable. You can select a book provided you have set up favorite books. You can also type in a character to display the favorite books that start with that character. Click ... to specify favorite books or **Utilities > Configure Favorite Books**. The processing org of the book identifies the processing org of the trade.
Issue Date	Displayed from the bond product template, but you can enter a different issue date if desired.
Dated Date	Displayed from the bond product template, but you can enter a different dated date if desired.
Issue Price	Displayed from the bond product template, but you can enter a different issue price if desired. ***Issue Price Base***

Fields	Description
	You can specify a different base to use for Issue Price and Redemption Price using the product code "Issue Price Base". If left blank, the default is base 100. Example: Taiwanese bills are entered in base 10,000. 
Look For Existing Bond	If checked, when you enter a template and maturity, the system attempts to find an existing bond. If none are found, a temporary dummy bond is created. When a bond (not a dummy bond) is loaded, that bond definition is used rather than the template. If un-checked, the system always creates a dummy bond, rather than looking for an existing one. You can control the defaulting behavior of this checkbox using the domain *BondSpeedEntryNewBond*. If set to true, "Look For Existing Bond" defaults to un-checked. If set to false or not set, it is checked by default.
Code	Displays the default code selected in **Configuration > User Access Control > User Defaults**, and its associated value in the adjacent field. Click **Codes** to enter the actual code values. » Double-click the Value field corresponding to a code and enter its value. » Then click **Apply**. You can create product codes using **Configuration > Product > Code**. You can add security codes to the domain *securityCode.ReprocessTrades* that require checking if trades need to be reprocessed if the security codes are modified. You can update security codes in bulk using the Bond report. ▶ See Bond Report for details.

18.2 Sample Bond MM Trade



▶ See Capturing Bond Trades for complete details.

18.3 Trade Window Setup

By default, all bond trades are captured using the standard bond window.

Since those trades do not use the standard Bond trade window, you need to specify their trade window so that when you open the trade from any report or blotter in the system, it will know which window to display.

From the Calypso Navigator, navigate to **Configuration > User Access Control > Trade Window**.

- Enter a configuration name and click **Add**.

  Select the product type BondMMDiscount, the sub-type "Discount" or ALL, and enter the complete class name `trading.TradeMoneyMarketFrontWindow`.
- Then click **Add**, and repeat for the product type BondMMInterest and sub-type "Interest" or ALL.
- Click **Save**.

Now you need to associate this window configuration with every user who needs it.

From the Calypso Navigator, navigate to **Configuration > User Access Control > User Defaults**.

- Select a user and select the window configuration from the field "Trade Window Config".
- Click **Save**.

[NOTE: You need to restart the Calypso Navigator in order for this change to take effect]

19. Capturing Taiwanese Money Market Bond Trades

Navigate to **Trade > Fixed Income > Bond (Custom)** (menu action `trading.TradeBondCustomFrontWindow`) to open the Bond (Custom) Trade window, from the Calypso Navigator or from the Trade Blotter.

These bonds can also be traded using the standard Bond Trade window.

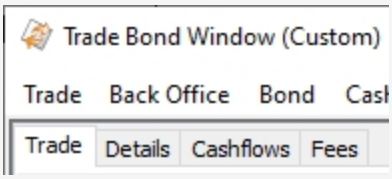
Prior to capturing Taiwanese money market bond trades, you need to specify bond product templates using **Configuration > Fixed Income > Bond Product Definition** for bond products BondMMInterest, BondMMDiscount, and BondMMDiscountWithAI. The bond products will be created on-the-fly from the Bond (Custom) Trade window. You can also create the bond MM products directly.

▶ See Defining Bond Products for details.

There is specific functionality for Taiwanese bonds that can be configured.

▶ See Specifying Taiwanese Bonds for details.

Taiwanese Bond Quick Reference



Entering Trade Details

- The first time you open the Bond (Custom) Trade window, you need to select the panels to be displayed from the **View** menu.
- In "Quick Entry" mode you can select a bond product template and the actual bond product will be created on-the-fly. Then enter the fields as needed, they are described below.
- Or you can disable the "Quick Entry" mode, and hit F10 to load a trade template to populate the worksheet with default values. Then modify the fields as applicable.

  Or you can enter the trade fields directly. They are described below.

  Note that the Trade Date is entered in the Details panel.
- Proceed to the other panels as applicable.

Saving a Trade

- Hit F5 to save the trade, or choose **Trade > Save**.

You can also hit F3 to save the current trade as a new trade, or choose **Trade > Save As New**.

You can also hit F12 to save the trade using any action available in the workflow, or choose **Trade > Save Action**. You will be prompted to select an action.

A description will appear in the title bar of the trade worksheet, a trade id will be assigned to the trade, and the status of the trade will be modified according to the workflow configuration.

Pricing a Trade

- You can choose **Pricing Env > Check** to check if all required pricing data are available in the Pricing Environment.
- Click **Price** to price the trade.

Financing a Trade

- Once a bond trade has been saved, you can choose **Bond > Finance Trade** to enter a related repo trade. If the bond belongs to a bundle, the repo trade will be added to the bundle as well.

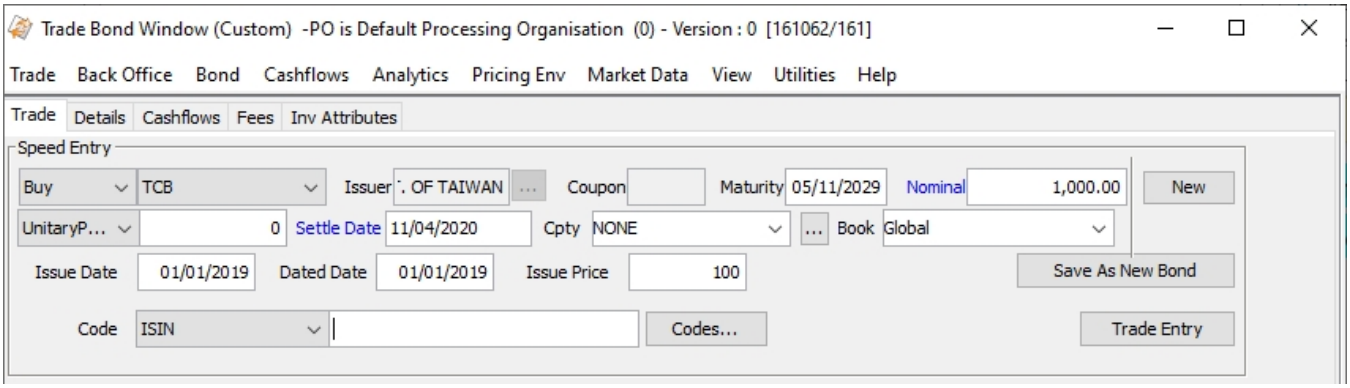
  Or you can click **Finance Trade** in the Bundle Entry area.

  In the Bundle Entry area, you can also enter an asset swap by clicking **Asset Swap**, a performance swap by clicking **Performance Swap**, or an interest rate swap by clicking **IR Swap** – Help is available from these windows.

Trade Lifecycle

- You can allocate the trade to multiple books and legal entities using **Back Office > Allocate**.
- You can terminate the trade using **Back Office > Terminate**.
- You can apply corporate actions using **Trade Lifecycle > Corporate Action > Corporate Action**, or using the CORPORATE_ACTION scheduled task.

19.1 Quick Entry Mode



- Select the direction of the trade and select a bond product template from the adjacent field. The actual bond product will be created on-the-fly. Then enter the other fields as needed.
- You can enable the other areas of the trade using the **View** menu.

  ▶ See Capturing Bond Trades for complete details on the other areas.
- Since those trades do not use the standard Bond Trade window, you need to specify their trade window so that when you open the trade from any report or blotter in the system, it will know which window to display.

  ▶ See Trade Window Setup for details.
- You can click **Save** to save the trade and create the bond product. Then if you modify any fields, choose the desired outcome:
  - Create a new bond product and amend the previously saved trade: Click **Save** again.
  - Create a new bond product and save a new trade: Click **Save As New Bond**.
  - Save a new trade and do not modify the previously created bond product: Hit F3 or choose **Trade > Save As New**.

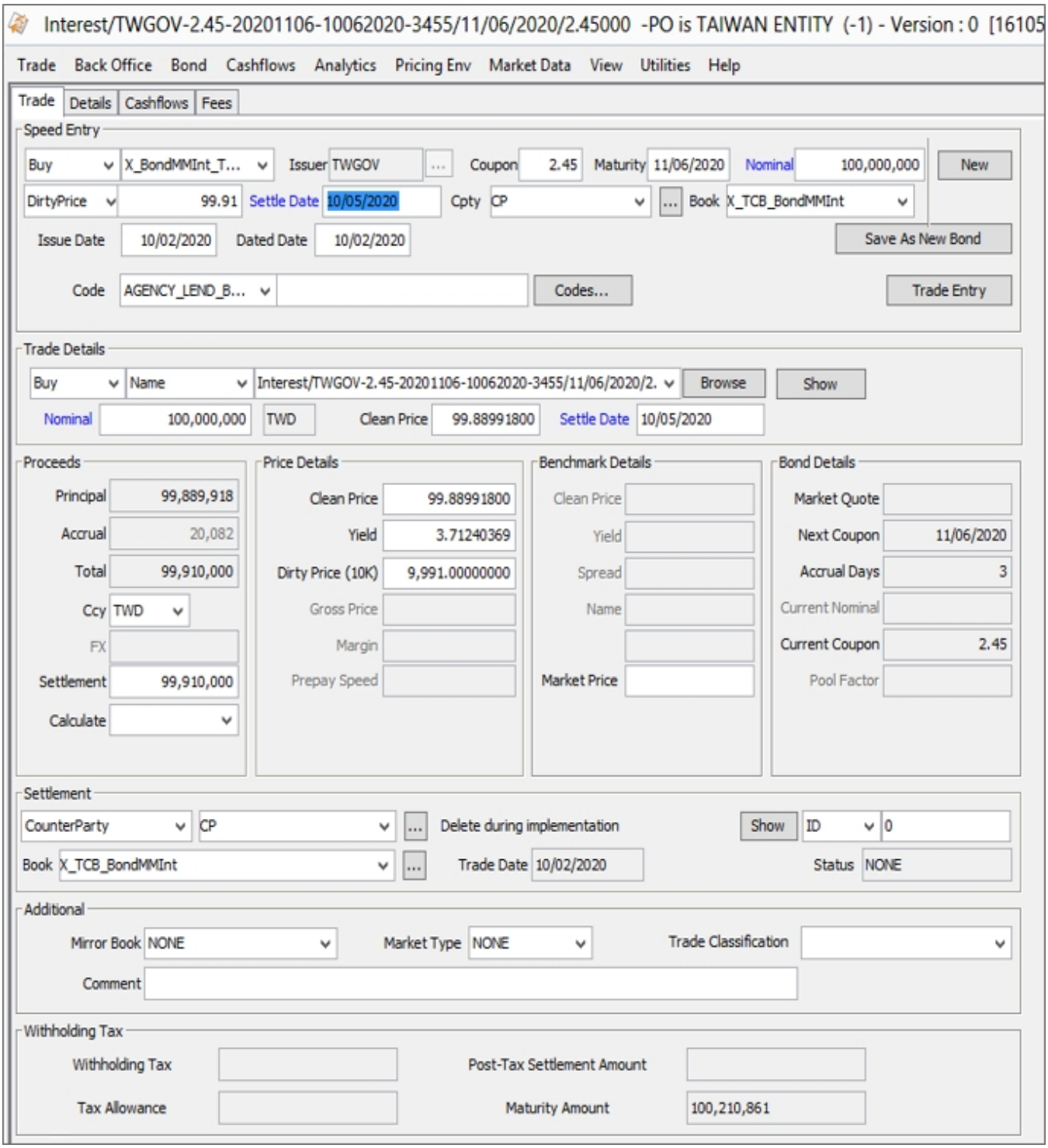
Speed Entry - Fields Details

Fields	Description
Buy / Sell / Issue	Select Buy or Sell as applicable to indicate the direction of the trade from the book's perspective. You can also select Issue to issue a bond from the processing org. You can switch between buy, sell, and issue using the space bar. For an issue, the bond should have the following characteristics: • The Issuer should be the processing org of the selected book. • The Issue Paying Agent (IPA) should be populated on the bond. The IPA handles the coupon payments for the issuer, and will be used in the corporate action process. SDIs should be defined for the bond's IPA for the IPA role.
Bond Product Template	Select a bond product template for a "BondMMInterest", "BondMMDiscount", or "BondMMDiscountWithAI" bond product. Bond product templates are created using the **Templates** button in the Bond Definition window using **Configuration > Fixed Income > Bond Product Definition**. The Calypso Navigator must be restarted in order to load the template into the drop down menu.
Issuer	Displayed from the bond product template.
Coupon	Coupon rate displayed from the bond product template.
Maturity	Displayed from the bond product template, but you can enter a different maturity if desired.
Nominal/Quantiity	Enter the amount of nominal that is traded. This is the original nominal. Double-clicking the

Fields	Description
	label will change it to Quantity (nominal/face value). You can enter the quantity if the quote type on the bond is set to "Price", "UnitaryPrice", or "GrossUnitaryPrice".
Quote Type	Defaults to the quote type of the bond product, but you can select a different quote type if desired. Defaults to the market quote as of the trade date if any. Modify as applicable. If there is no market quote and MMKT_FROM_QUOTE is false, we price the bond from curve to produce an initial price for trading. For bonds quoted using Price32, you can enter the trade's price with two, three, or four digits after the dash. The first two digits represent the number of thirty-seconds (between 1 and 31). If the price contains 3 digits, the third digit represents the number of eighths of a thirty second (or 1/256, between 1 and 7). A bond price entered as "99-022" will be read as [99 + 2/32 + 2/8(1/32)], or 99.0703125. The third digit can also be +, indicating 4/8 of a thirty second. If the price contains 4 digits, the last two digits represent the number of sixteenths of a thirty second (or 1/512, between 1 and 15). Note that the four-digit logic only applies to bonds with the tick size 512.
Settle Date	The settlement date defaults to the trade date + the number of settle days specified in the bond template. The settlement date uses the holiday calendar of the bond template to identify business days. If you change the trade date in the Details panel, double-click the Settle Date label to update the settlement date accordingly.
Cpty	You can select a counterparty provided you have set up favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character. Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Otherwise, click ... to select a counterparty from the Legal Entity Chooser. You can also type Ctrl-F to invoke the Legal Entity Chooser, or directly enter a Legal Entity short name.
Book	Trading book to which the trade belongs. Defaults to the book selected in the User Defaults. You can modify as applicable. You can select a book provided you have set up favorite books. You can also type in a character to display the favorite books that start with that character. Click ... to specify favorite books or **Utilities > Configure Favorite Books**. The processing org of the book identifies the processing org of the trade.
Issue Date	Displayed from the bond product template, but you can enter a different issue date if desired.
Dated Date	Displayed from the bond product template, but you can enter a different dated date if

Fields	Description
	desired.
Issue Price	Displayed from the bond product template, but you can enter a different issue price if desired. ***Issue Price Base*** You can specify a different base to use for Issue Price and Redemption Price using the product code "Issue Price Base". If left blank, the default is base 100. Example: Taiwanese bills are entered in base 10,000. 
Code	Displays the default code selected in **Configuration > User Access Control > User Defaults**, and its associated value in the adjacent field. Click **Codes** to enter the actual code values. » Double-click the Value field corresponding to a code and enter its value. » Then click **Apply**. You can create product codes using **Configuration > Product > Code**. You can add security codes to the domain *securityCode.ReprocessTrades* that require checking if trades need to be reprocessed if the security codes are modified. You can update security codes in bulk using the Bond report. ▶ See Bond Report for details.
Trade Entry	Changes the Speed Entry panel to the Bond Speed Entry panel.

19.2 Sample Taiwanese Bond Trade



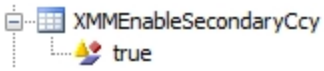
▶ See Capturing Bond Trades for complete details.

[NOTE: Trade Proceeds total is calculated as Dirty Price * Nominal for bonds with no pool factor. In the standard Bond Trade window, intermediate rounding may slightly change the value]

19.3 Secondary Currency Fields Setup

The optional secondary currency fields in the Bond (Custom) Trade window allow entering the trade in any currency.

To enable them, set the domain *XMMEnableSecondaryCcy* to true.



When the trade currency is different from the bond currency, you can enter either one and the other will be calculated.

- <Secondary Ccy> Clean Price = Clean Price * FX Rate * Pool Factor
- <Secondary Ccy> Dirty Price = Dirty Price * FX Rate * Pool Factor

They are rounded according to the "Price Dec." field.

19.4 Pricer Measures

The pricer measures DIRTY_PRICE_SCALED and TRADE_DIRTY_PRICE_SCALED allow displaying these prices in a different base as they are controlled by the Issue Price Base product code.

▶ See Specifying Taiwanese Bonds for details on Issue Price Base.

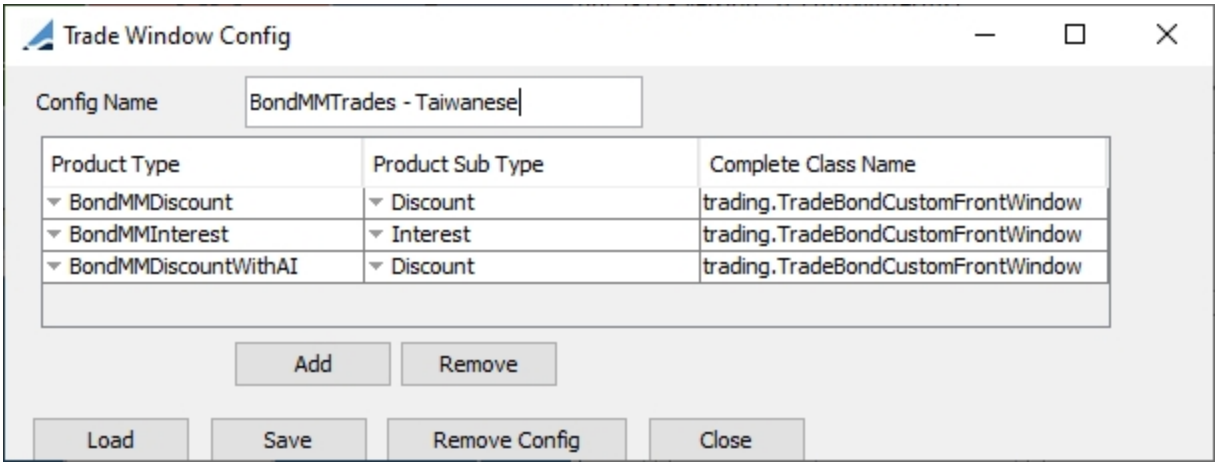
Pricer Measures	Description
DIRTY_ PRICE_ SCALED	Class `tk.pricer.calculators.PricerMeasureBond`. Per local market practice, the face value for a TWN bill should set up with 100,000, while the price base for the same bill should be in 10,000. The base is controlled by the Issue Price Base product code. If Issue Price Base = 10,000, then: **DIRTY_PRICE_SCALED = DIRTY_PRICE * 100**
TRADE_ DIRTY_ PRICE_ SCALED	Class `tk.pricer.calculators.PricerMeasureBond`. Per local market practice, the face value for a TWN bill should set up with 100,000, while the price base for the same bill should be in 10,000. The base is controlled by the Issue Price Base product code. While DIRTY_PRICE_SCALED is the market price, i.e. the market quote on valuation date, TRADE_ DIRTY_PRICE_SCALED is the price of the original trade, i.e. what you paid for the bond. It does not change over time.

19.5 Trade Window Setup

By default, all bond trades are captured using the standard bond window.

Since those trades do not use the standard Bond trade window, you need to specify their trade window so that when you open the trade from any report or blotter in the system, it will know which window to display.

From the Calypso Navigator, navigate to **Configuration > User Access Control > Trade Window**.



» Enter a configuration name and click **Add**.

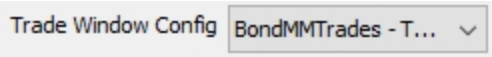
Select the product type BondMMDiscount, the sub-type "Discount" or ALL, and enter the complete class name `trading.TradeBondCustomFrontWindow`.

» Then click **Add**, and repeat for the product type BondMMInterest and sub-type "Interest" or ALL.

- Then click **Add**, and repeat for the product type BondMMDiscountWithAI and sub-type "Discount" or ALL.
- Click **Save**.

Now you need to associate this window configuration with every user who needs it.

From the Calypso Navigator, navigate to **Configuration > User Access Control > User Defaults**.



- Select a user and select the window configuration from the field "Trade Window Config".
- Click **Save**.

[NOTE: You need to restart the Calypso Navigator in order for this change to take effect]

20. Capturing Bond Forward Trades

[NOTE: Using Bond Forwards requires a specific license agreement. Please contact your Adenza representative for more information]

Bond forwards are OTC derivatives and settlement can be either cash or physical.

Navigate to **Trade > Fixed Income > Bond Forward** (menu action `trading.TradeBondForwardWindow`) to open the Bond Forward Trade window.

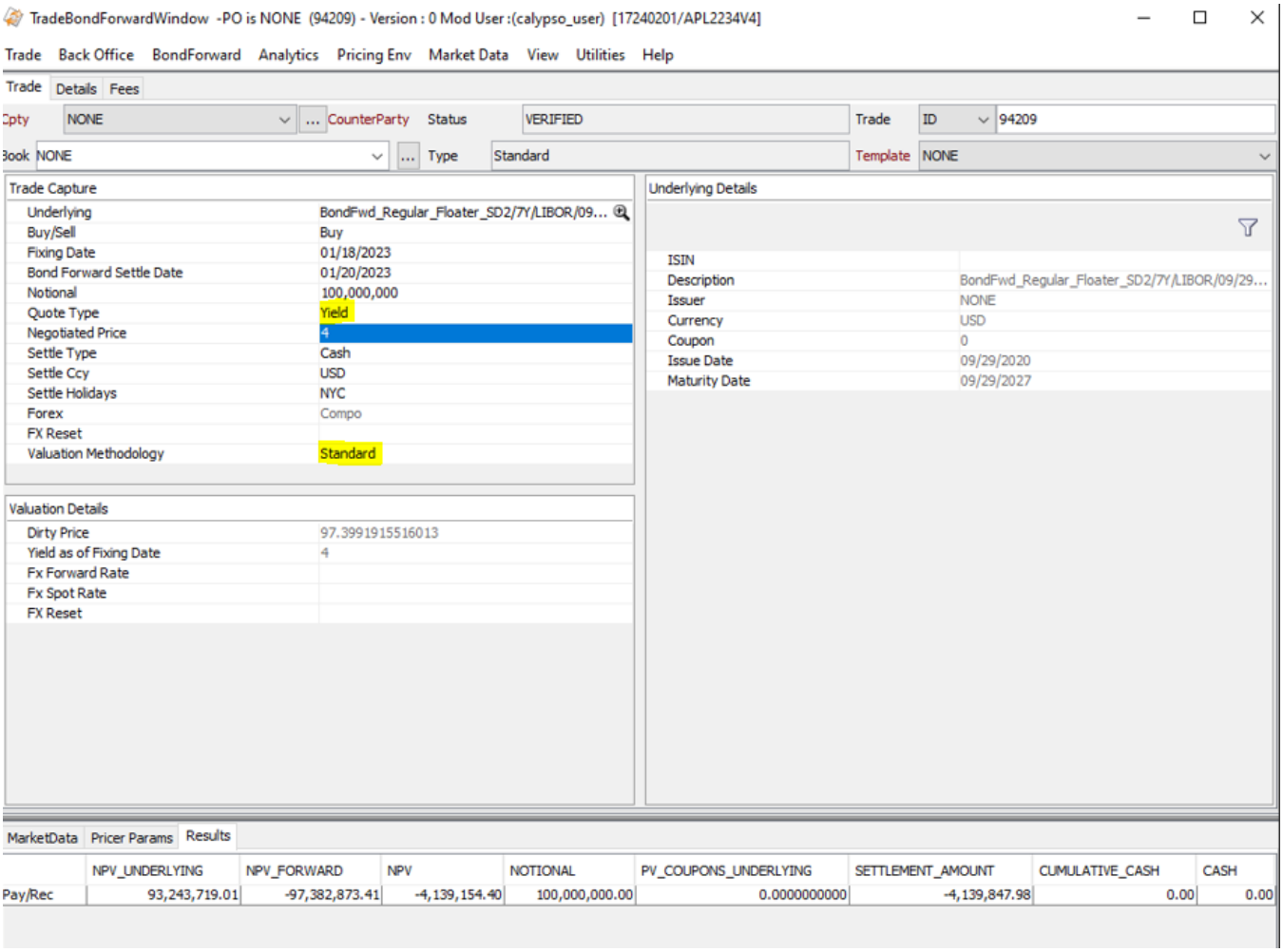
Prior to capturing bond forward trades, you need to specify bond products using **Configuration > Fixed Income > Bond Product Definition**.

▶ See Defining Bond Products for details.

Currently, bond forwards support generic fixed rate bonds, for example, Colombian TES bonds, UST, Mexican M-bonds, and UVR (dual currency bonds specific to the Colombian market).

Note that Calypso currently does not support fixed rate bonds with inflation adjustment, flipper type, call schedule, amortization, dual currency, etc, or bonds with coupon type as floating, exotic, etc.

20.1 Sample Bond Forward Trade



Bond Forward Trade Window

In the Type field, the default value is Standard, unless the underlying is a UVR bond, then the value is Colombian.

Bond Forward now supports to valuation methods :

- Colombian, which is a legacy method that was initially introduced for Colombian market.
- Standard, which is the new standard way of pricing a bond forward.

In the new Standard methodology, following new features have been added :

- Bond Forward trade can be captured using 'Yield, Clean Price and Dirty Price'
- Both fixed rate and floating rate bonds (including compounded and Non-compounded bonds) will be supported

- The calculations used for 'Standard' methodology is different from that of 'Colombian'.

Other lifecycle methodologies, like Exercise, Rollover, terminate etc. stays the same for both methodologies.

Users already using the Colombian methodology can continue using the same methodology without any disruption (Execute SQL will upgrade the existing trades valuation methodology to 'Colombian'). Only in the DTUP files a new field has to be added specifying the valuation methodology for existing clients.

20.2 Pricing

Bond forward trade capture is based on Clean Price, while valuation and settlement are based on Dirty Price. BondForward Quote type as 'Yield' can be set and with YIELD pricer measure for bond forward, under the valuation method as ‘Standard’.

Now when Quote Type = Yield/Instrument Spread, then Clean Price = Computed Bond’s Dirty Price as of future settlement date – Accrual of the future setting Bond using the cashflows as of Valuation Date.

Resets / Fixings

The following resets / fixings are required:

- Non-UVR bond forwards:
  - Price of the bond
  - FX reset, if settlement currency is different from that of the bond (only needed on exercise date)
  - FX spot between bond and bond forward settlement currency
- UVR bond forwards:
  - Reset of the price of the bond
  - Reset of UVR
  - FX reset, if settlement is offshore
  - FX spot between UVR and COP
  - FX spot between COP and bond forward settlement currency
  - FX reset between COP and bond forward settlement currency (only needed on exercise date)

Exchange Rates

The settlement currency drives the exchange rate if different from the bond currency.

The FX forward rate, or Strike, also needs to be calculated when there is a foreign currency.

Pricer Config

Ensure that PricerBondForward is used for the BondForward product.

The forecast curve is set in the product specific tab for bond currency.

The discount curve is in the bond forward settlement currency.

For bond currency not equal to bond forward currency, the discount curve is needed for both currencies to calculate the FX forward rate.

The underlying bond should also have the necessary discount curves, i.e. the bond should successfully price in a Bond Trade window.

Pricer Measures

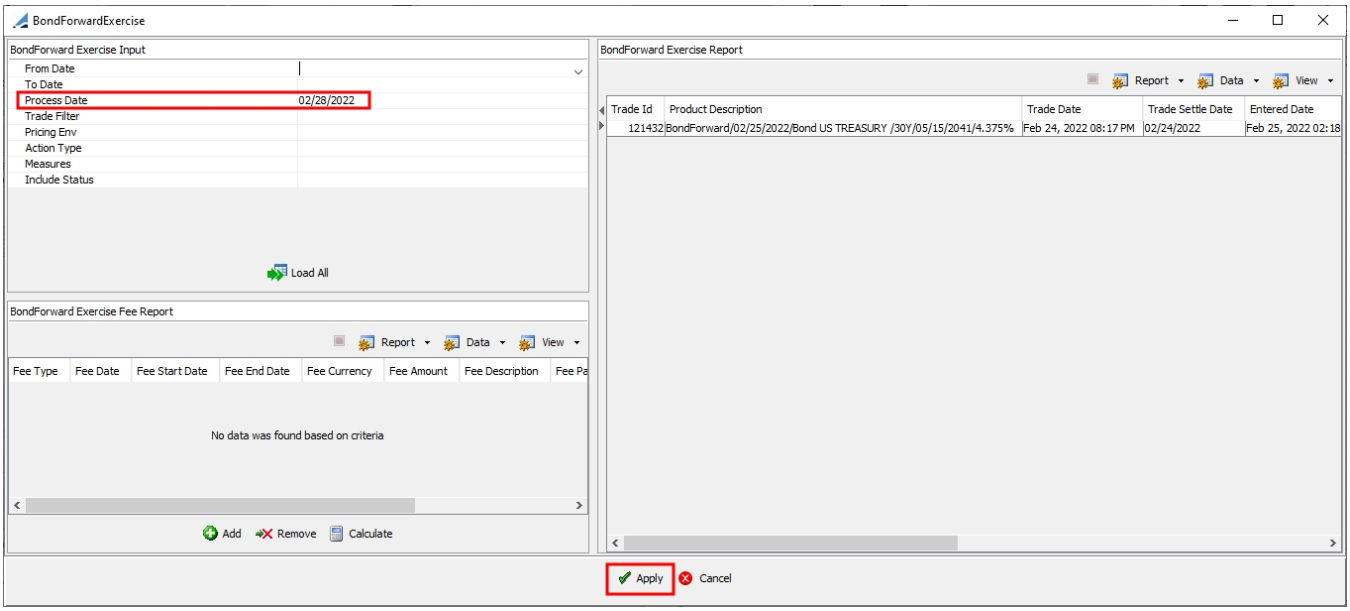
The following pricer measures are unique to Bond Forwards.

Pricer Measures	Description
PV_COUPONS_ UNDERLYING	PV of all coupons on the underlying bond during the term of the bond forward.
NPV_FORWARD	PV of forward.
NPV_ UNDERLYING	PV of underlying.
DIRTY_PRICE_ UNDERLYING	If the value date is less than the fixing date, it is the projected forward dirty price of the underlying, otherwise, it is the spot dirty price of the underlying.

20.3 Standard Settlement

The Bond Forward Exercise window is used to handle standard settlement of bond forwards, but note that it can only be used to settle the trade on the fixing date.

From the Bond Forward Trade window, select **Bond Forward > Exercise** to open the Bond Forward Exercise window.



» Currently, only the Process Date field and **Apply** button are used.

20.3.1 Cash Settlement

The following fixings are required to calculate the settlement amount:

- Price
- FX rate
- FX reset between the bond currency and bond forward settlement currency
- UVR to COP spot (for UVR bonds only)

The settlement amount and date will be shown once the fixings are set. Once the action is applied and the bond forward trade is moved to EXERCISED status, the fee is generated based on the settlement amount and settlement date.

Scheduled Task AUTOMATIC_EXERCISE_BONDFORWARD is used to auto-exercise Bond Forward trades.

20.3.2 Physical Settlement

For physical settlement of bond forward trades, a new bond trade is created on the bond forward fixing date and contains the following information:

- Notional
- Currency
- ISIN/bond identifier

- Trade price: The bond price on the fixing date
- Trade date: The fixing date of the forward
- Settle date: Trade date + bond settlement lag
- Book: Same book as the bond forward trade
- Bond maturity date

The settled bond trade id is linked to the original bond forward trade.

The traded price of the new bond is the spot price on the fixing date.

A fee with the settlement amount is set on the bond forward trade. It is calculated as Notional * (Forward Price - Spot Price). The fee currency is in the bond forward settlement currency, and conversions are done accordingly.

The physical bond trade has the keywords BOND_FWD_PRICE_TYPE = CleanPrice and BOND_FWD_PRICE = <clean price value>.

Tax Calculation

For physical settlement of bond forward trades, the resulting bond trade is created with the forward price, and the following pricer measures are calculated if the counterparty requires tax calculation:

COL_TAX_BASIS = (Coupon Rate * Notional * Day Count) / Days + (1 - Clean Price) * Notional / (Days - Accrual Days)

COL_TAX = COL_TAX_BASIS * Tax Rate

The tax rate is set in the PO legal entity attribute BondIncomeTaxRate in the format *n*%, for example 4%.

The counterparty requires tax calculation if the CP legal entity attribute SelfWithholding.Bond = false.

▶ For information on the associated accounting events, please refer to Calypso Accounting Events documentation.

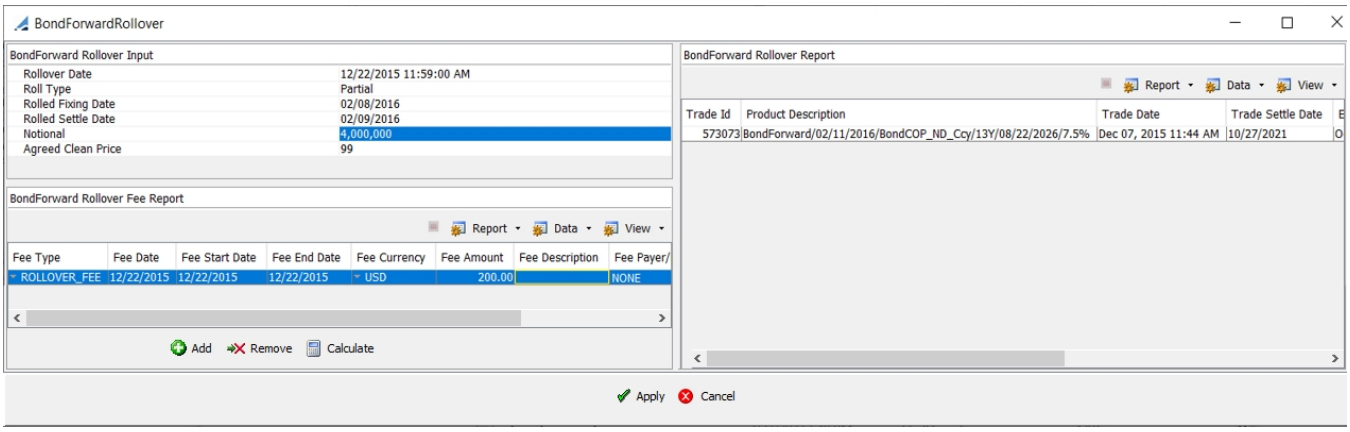
20.4 Early Settlement

Early settlement, whether full or partial, can be applied to both physical delivery and cash settled bond forwards.

Make sure that the transition VERIFIED - ROLLOVER - ROLLOVERED is configured in the trade workflow with Create Task checked.

ⓘ **[NOTE: You can only rollover a trade in VERIFIED status (out-of-the-box)]**

From the Bond Forward Trade window, select **Bond Forward > Roll Over** to open the Bond Forward Rollover window.



- The Rollover Date defaults to the fixing date of the bond forward, but you can modify it as needed.
- Select the Roll Type: Full or Partial.
- Modify the Rolled Fixing Date and/or Rolled Settle Date if needed.
- For partial early settlement, in the Notional field, enter the amount to be early settled. Otherwise, for full settlement, this field is not editable.

  Increasing the notional amount to greater than the original notional is not supported.
- Enter the agreed upon new clean price in the Agreed Clean Price field.
- In the Fee Report area, click **Add** to add a rollover fee if needed. Complete the fee details fields as applicable.

  The **Calculate** button is not used for rollovers.
- Click **Apply**.

A new trade is created with the details specified in the Rollover window, including the new price and new fixing date.

For partial early settlement, two new trades are created, one for the notional and agreed clean price for the early partial redemption, and the other for the remaining notional with the original trade terms.

The original trade is changed to status ROLLOVERED. The RolledOverTo keyword on the original trade shows the trade id of the new trade(s).

The RolledOverFrom keyword on the new trade(s) shows the id of the original trade.

Any fee specified is attached to the original trade.

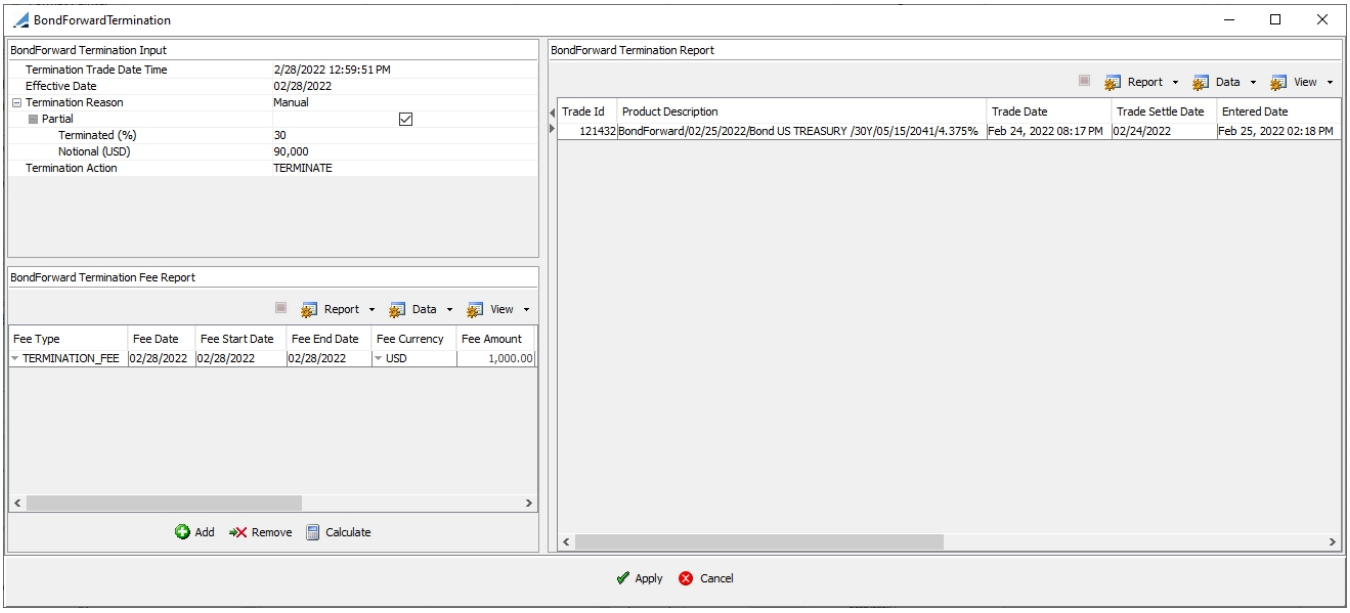
The new trade(s) can then be handled through the Bond Forward Exercise window for standard settlement based on the fixing date(s).

▶ See Standard Settlement for details.

20.5 Termination

The Bond Forward Termination window is used to handle full or partial termination of bond forwards.

From the Bond Forward Trade window, select **Back Office > Terminate** to open the Bond Forward Termination window.



- Modify the Termination Trade Date Time and/or Effective Date if needed.
- Select the Termination Reason.
  - Please refer to Calypso Termination documentation for details on termination reasons.
- For partial termination, select the "Partial" checkbox. Otherwise, leave it unselected for full termination.
- Enter the Termination (%) and the Notional will be calculated, or you can just enter the Notional amount.
- The Termination Action is defaulted to TERMINATE.
- In the Fee Report area, click **Calculate** to calculate the termination fee as applicable.
- You can click **Add** to manually add a termination fee if needed. Complete the fee details fields as applicable.
- Click **Apply**.

For partial early settlement, a new trade is created for the remaining notional.

The original trade is changed to status TERMINATED. The TransferTo keyword on the original trade shows the trade id of the new trade.

The TransferFrom keyword on the new trade shows the id of the original trade.

Any fee specified is attached to the original trade.

The new trade can then be handled through the Bond Forward Exercise window for standard settlement based on the fixing date.

See Standard Settlement for details.

21. Capturing When-Issue and Re-Issue Bond Trades

Prior to capturing a When-Issue or Re-Issue bond trade, you need to define a When-Issue or Re-Issue bond product.

▶ See Defining Bond Products for details.

During the period between the announcement date and the auction date, Treasury coupon securities are considered to be in "when issued" (WI) status and trading takes place by quoting a bond-equivalent yield.

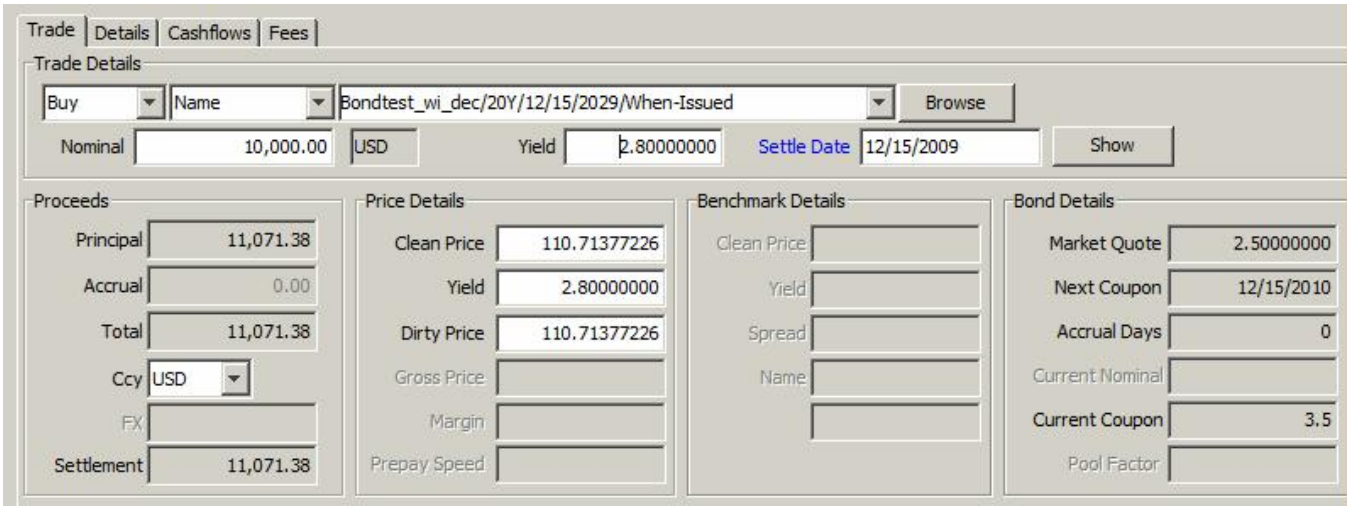
The calculation of a dollar price (needed to establish the dollar value for the settlement date) from the bond-equivalent yield requires that a coupon value be defined for the security. This is done by using an "assumed" coupon value.

In order to propagate the assumed coupon value over the when-issue period, you can run the PROP_RATE_1BUSDAY scheduled task. It requires a pricing env, holidays, and an attribute called "Quote Name Contains" (similar to the Quotes Window). It will use the valDate and the "Quote Name Contains" to find the quotes to be propagated. You can set the value of "Quote Name Contains" to "When-Issued.ExpectedCoupon".

21.1 Capturing When-Issue Trades

21.1.1 Sample When-Issue Bond Trade

Navigate to **Trade > Fixed Income > Bond** to open the Bond Trade window, from the Calypso Navigator or from the Trade Blotter.



The system expects an "assumed coupon rate" to be present, in order to calculate the trade's price from the entered yield - See "Pricing" below for details.

The settlement date of WI trades is automatically set to the Issue date.

By default, WI trades are NOT eligible for liquidation to generate realized PL. They are marked to market individually. This is true even if a Buy and a Sell for the same WI security exist in the same book.

You can however enable the liquidation of WI trades to generate realized PL using environment property WHENISSUED_LIQUIDATION=true.

▶ See Capturing Bond Trades for complete details on capturing trades.

Pricing

You need the following quotes to price the trade during the When Issue period (between the announcement date and the auction date): The Bond's yield and the expected coupon.

Quote Name	Quote Type	Bid	Ask	Open	Close
Bond.test_wi_dec.12-15-2029.When-Issued	Yield				2.50000000
Bond.test_wi_dec.12-15-2029.When-Issued.ExpectedCoupon	Yield				3.50000000

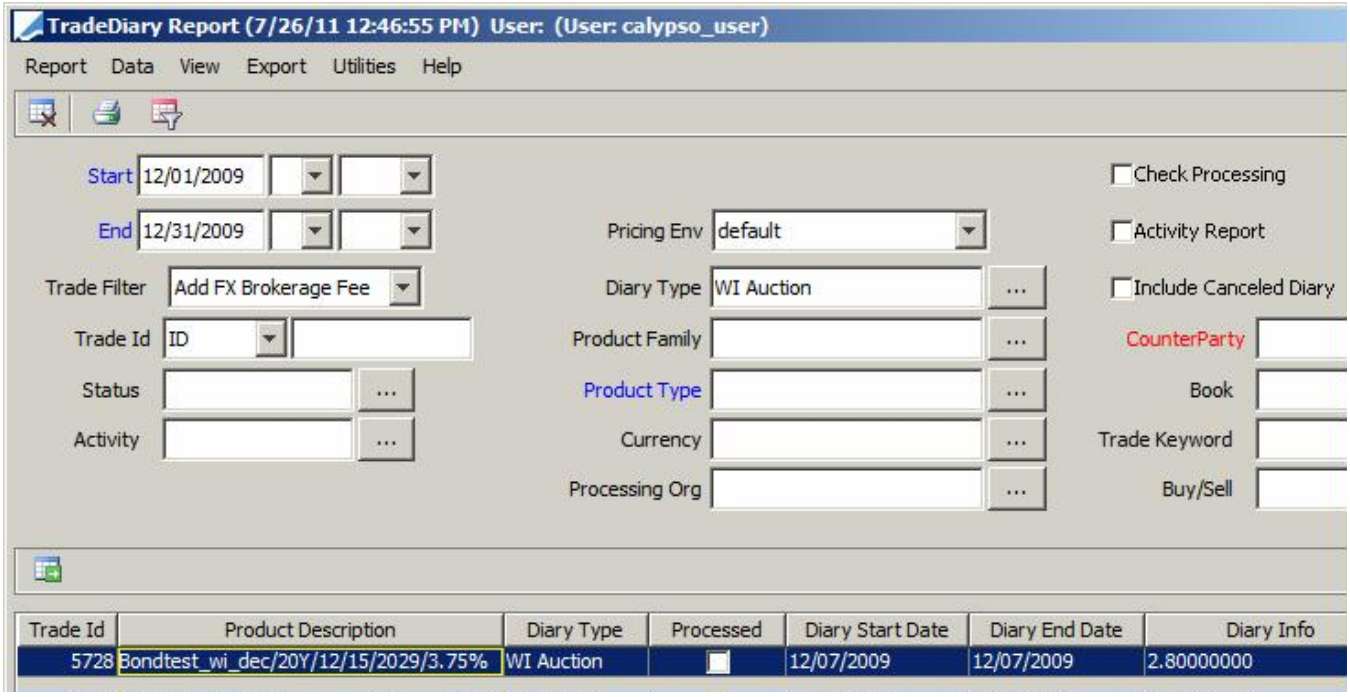
For the expected coupon, you can enter the quote everyday, or you can use the PROP_RATE_1BUSDAY scheduled task to copy the quote to the following day.

Task Attributes	
Quote Name Contains	When-Issued.ExpectedCoupon
Quote Type Is	Yield
Do Not Overwrite Existing ...	False
Num Of Bus Days	1

21.1.2 Auction Process

When the coupon rate is announced for the WI security (on the auction date), you should follow the steps below.

To have the list of upcoming auction dates, you can run the Trade Diary (**Reports > Trade Diary**) with the Diary Type "WI Auction".



Step 1 - *Update the Bond Product*

Go to the Bond Definition window, and update the bond as follows:

- Enter the actual coupon rate in the Coupon panel.
- Change the quote type from Yield to CleanPrice in the Market panel, and uncheck the "When Issue bond" checkbox.
- Save the bond.

  After saving the bond, the system will ask you if you want to re-process affected trades. You can reply YES (provided you have completed the workflow setup as described in Step 2), or you can reply NO and process the trades later using the PROCESS_TRADE scheduled task or the Process Trades window.

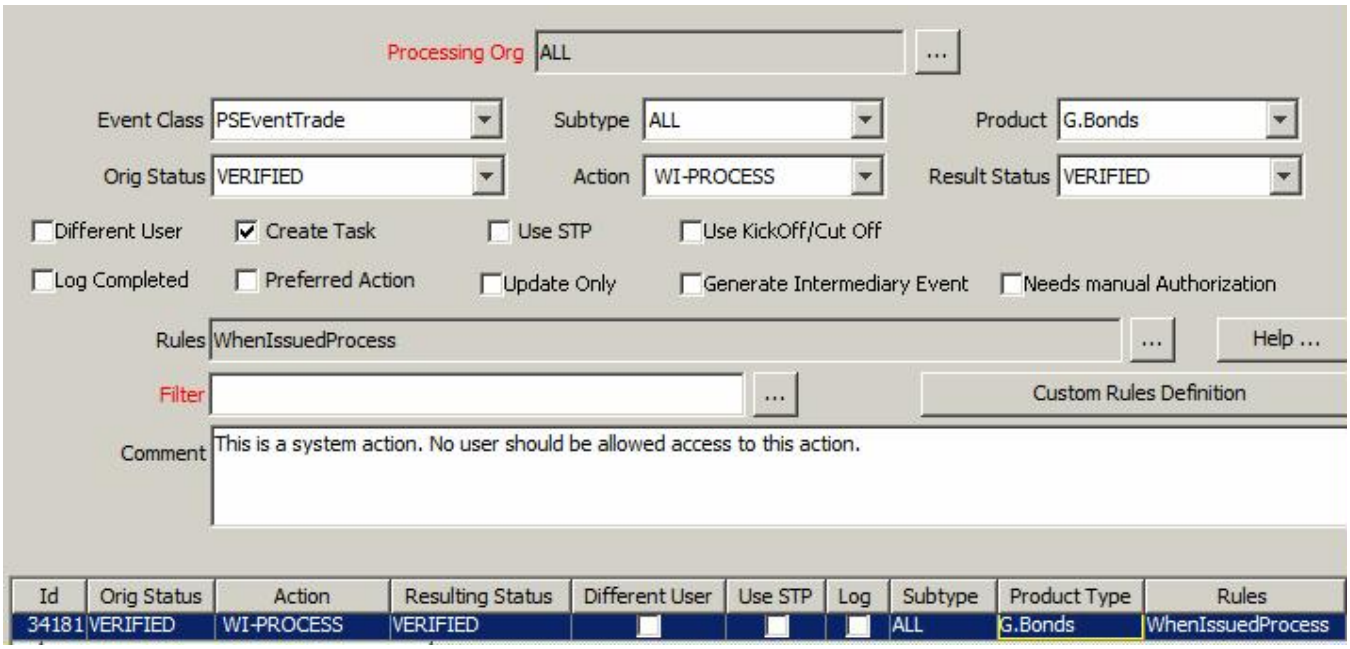
  If asked to reprocess affected Corporate Actions, reply NO.

  You will be asked if you want to save the new Quote Type, reply YES.

The product code "When-Issued" is cleared on the Bond definition.

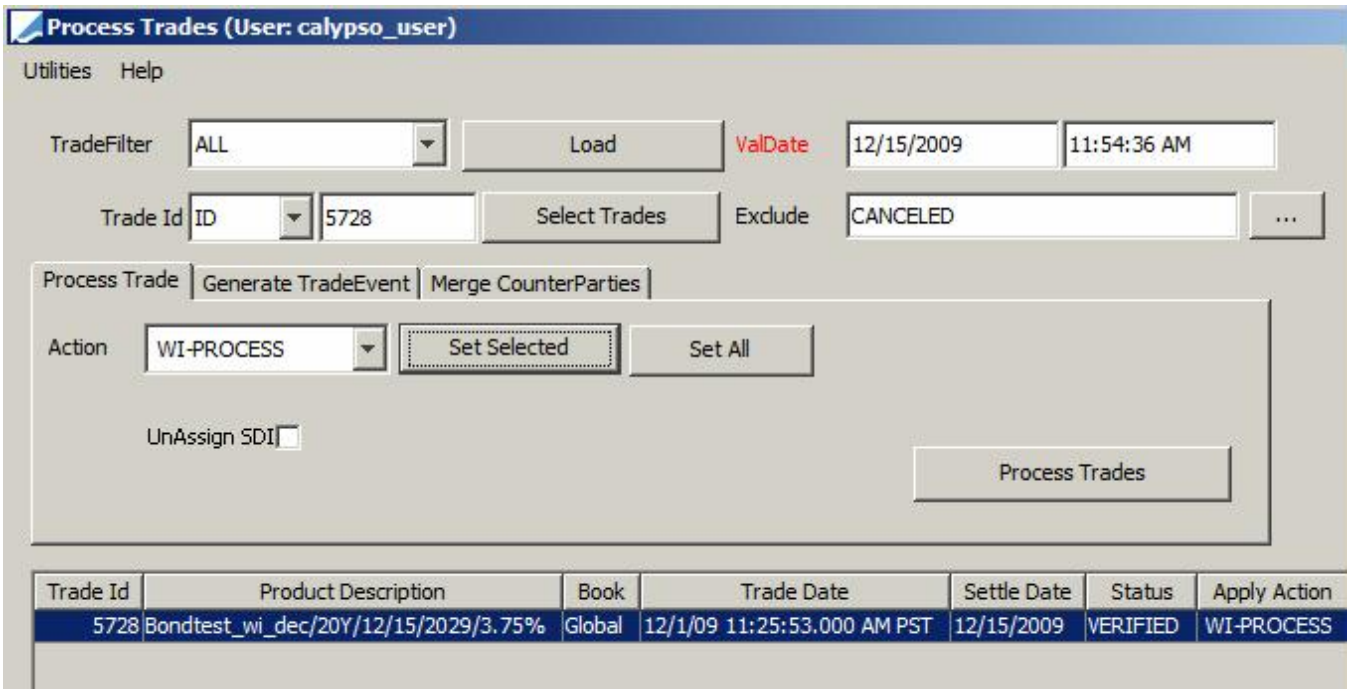
Step 2 - *Update the Settlement Amount on the Existing Trades*

You should first set up a workflow transition with the action: WI-PROCESS and the trade rule WhenIssuedProcess.



Then run **Processing > Process Trades** (or the PROCESS_TRADE scheduled task), and apply the action WI-PROCESS.

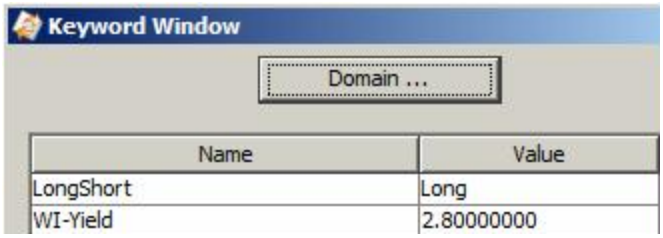
Sample Process Trade Window



Sample PROCESS_TRADE Scheduled Task

Attribute	Value
Process Trade - Transfer	Trade
Apply Trade Action	WI-PROCESS
Unassigned SDI	
Force New Transfer Creation	
Engines	

After applying the WI-PROCESS on the trade, the trade keyword "WI-Yield" stores the trade's original yield.

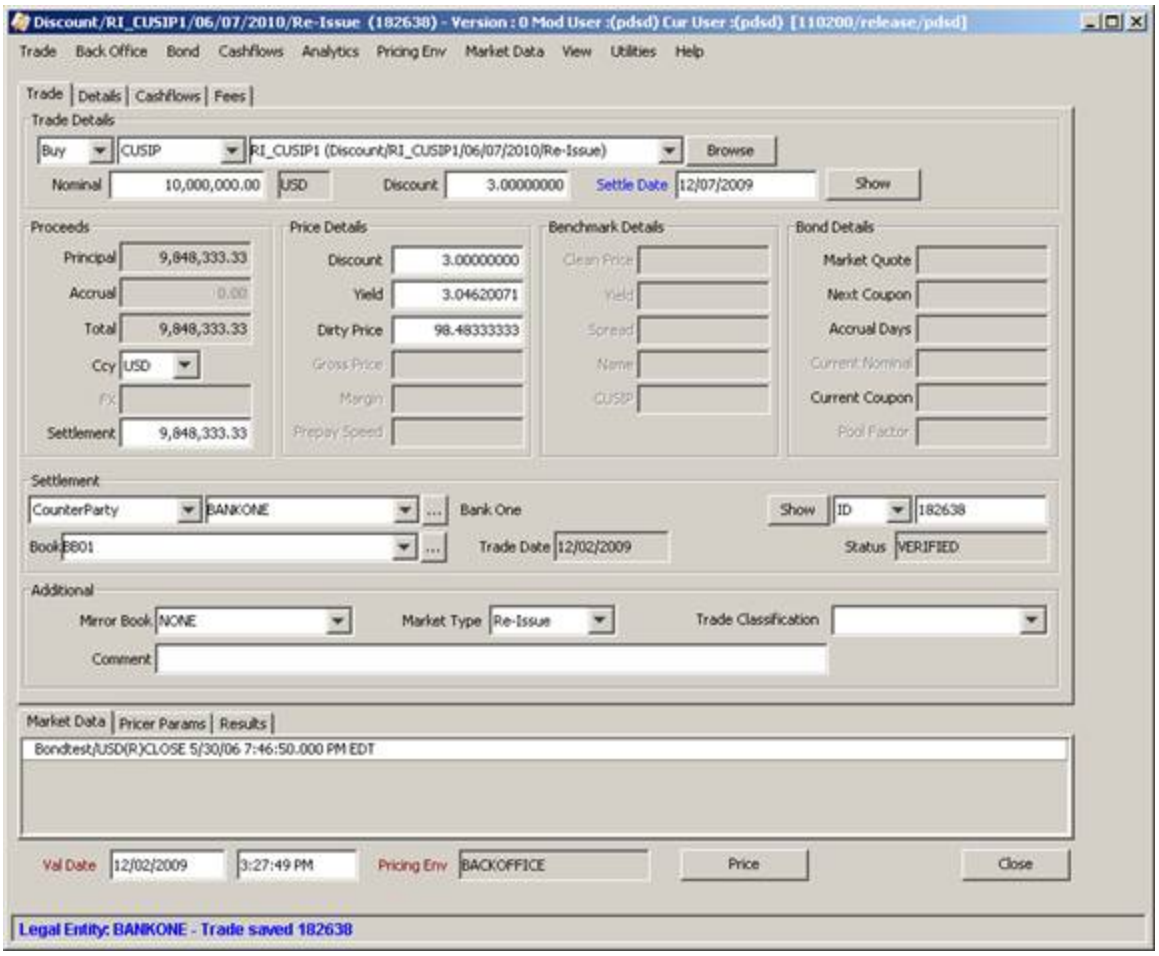


The trade's price is now shown as Clean Price, and the trade is no longer a WI trade.

21.2 Capturing Re-Issue Trades

21.2.1 Sample Re-Issue Bond Trade

Re-Issuance trades are entered to Calypso in exactly the same way as any other trade. Note that the settlement date cannot be prior to the Re-Issuance security's Issue Date.



Note that:

- Market Type shows ‘Re-Issue’
- The security name shows on the trade screen with ‘Re-Issue appended to it

As with WI trades, trades in a RI security are not liquidated against each other to generate realized PL. This is true even if a Buy and Sell for the same RI security exist in the same book.

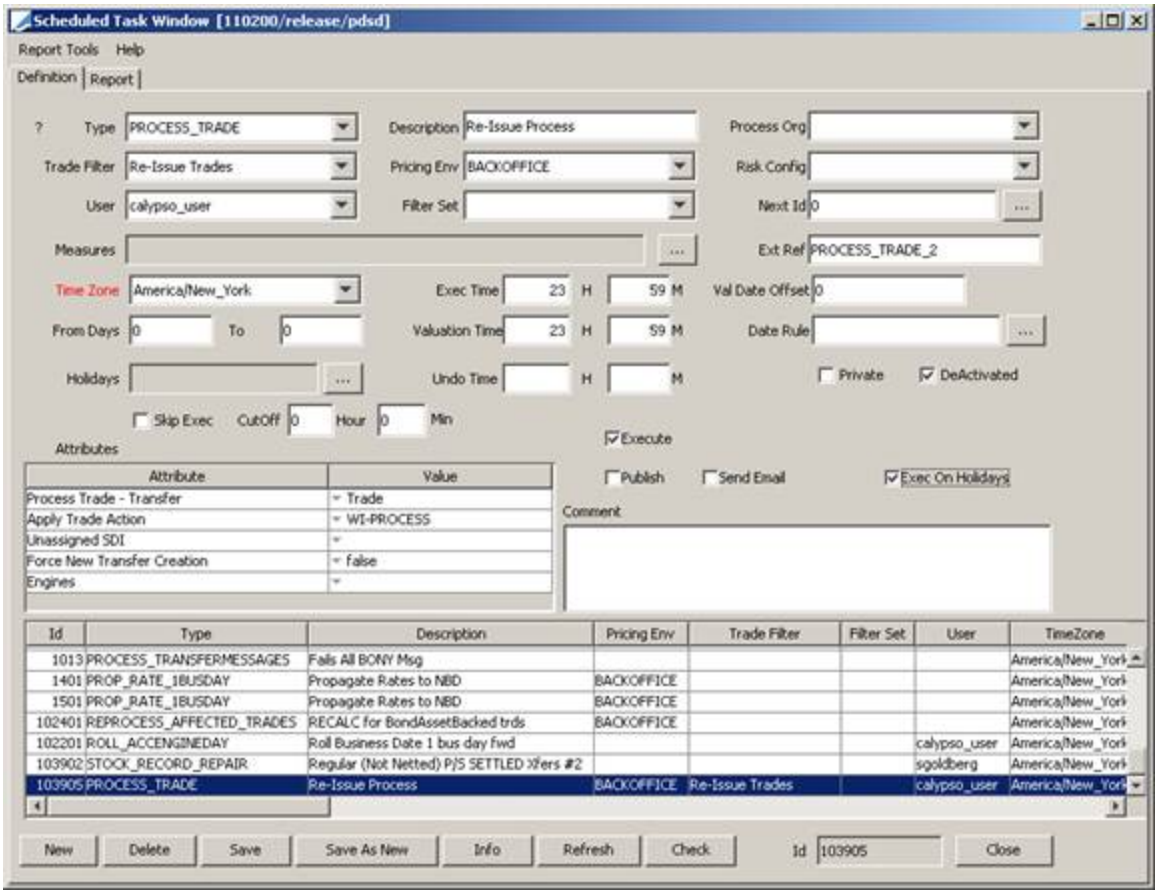
▶ See Capturing Bond Trades for complete details on capturing trades.

21.2.2 Assimilation Process

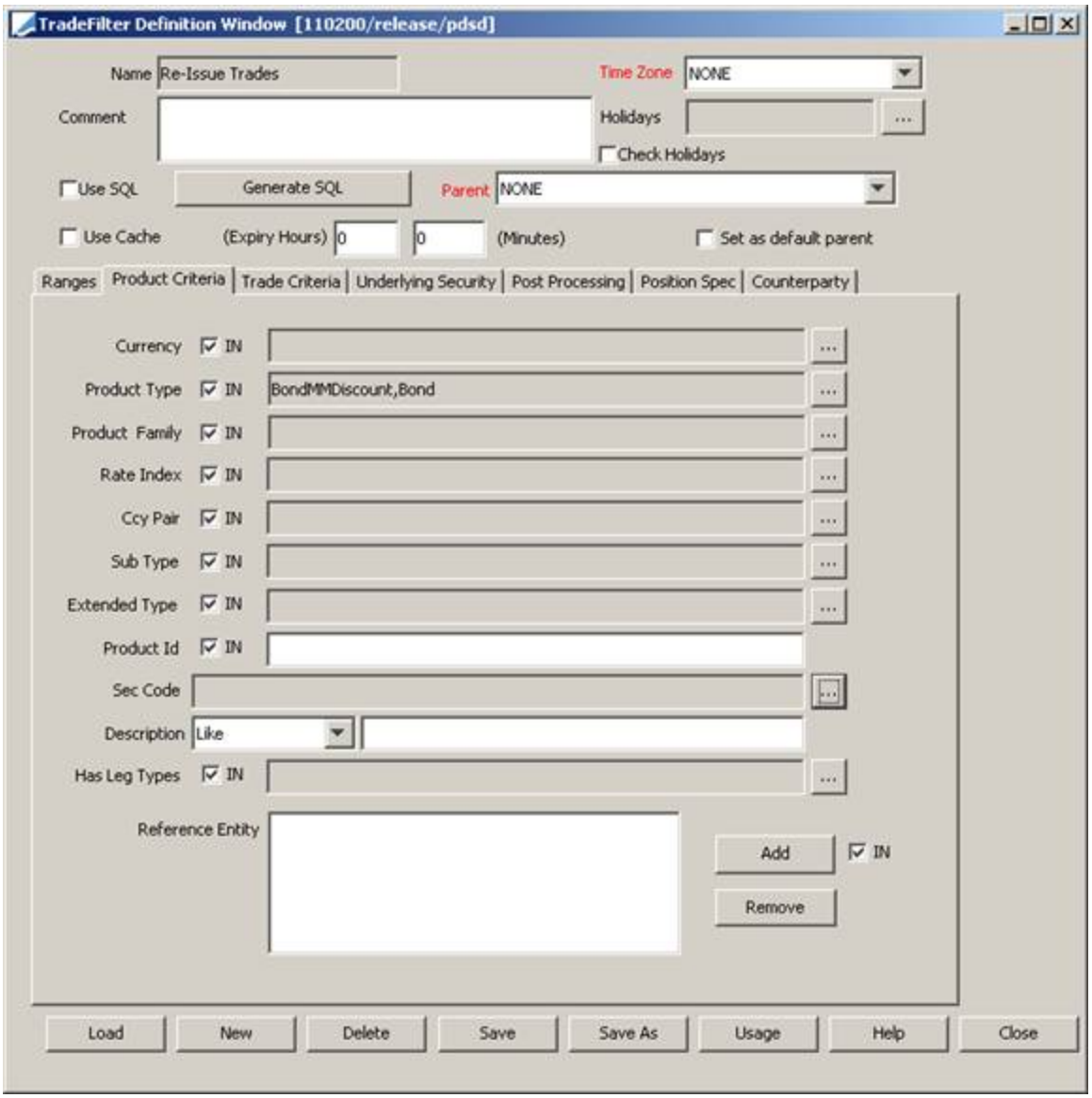
This is accomplished by using the scheduled task PROCESS_TRADE to convert Re-Issue trades to the assimilation product.

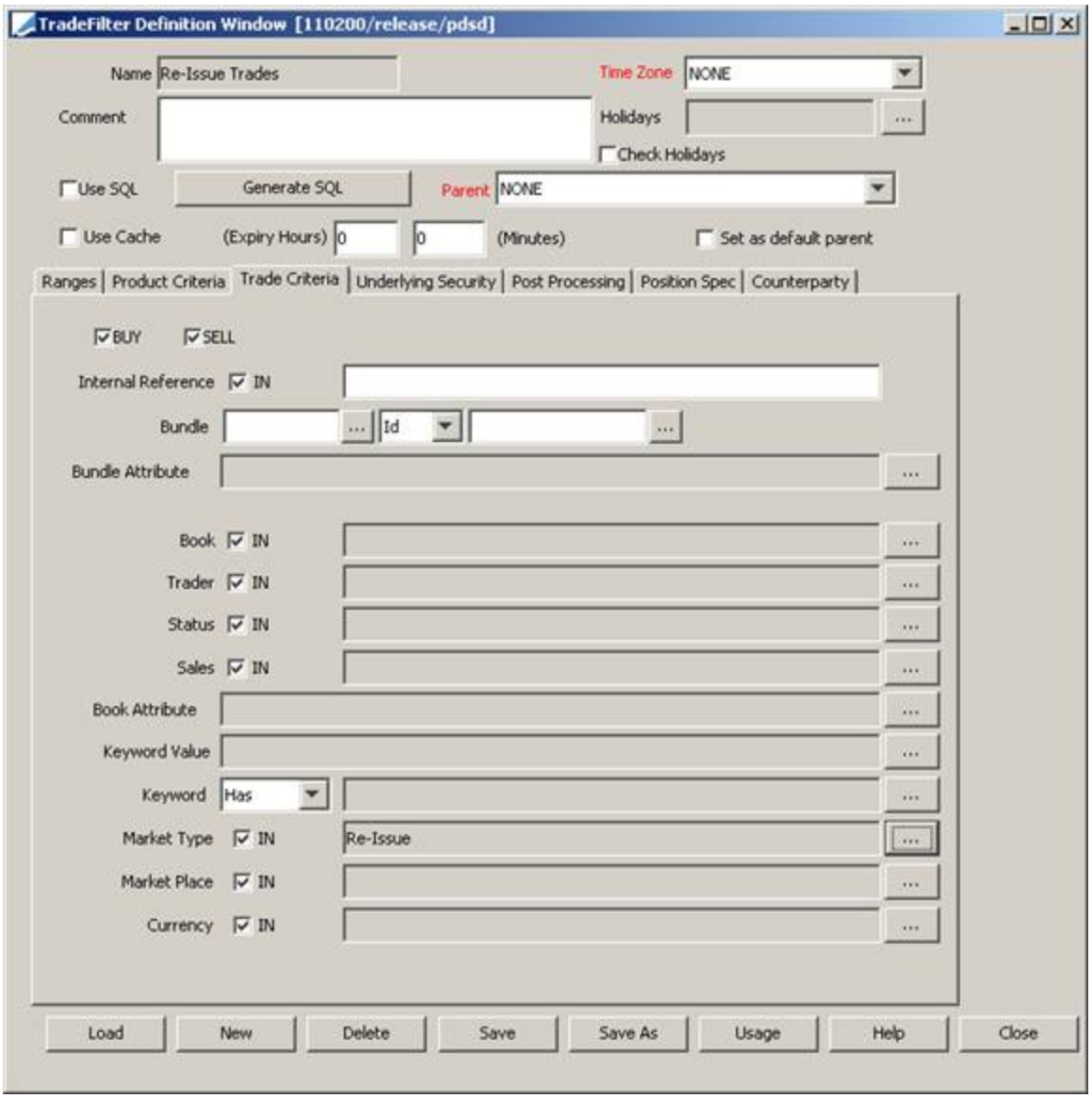
This scheduled task should run during start of day processing (i.e. before the real-time day begins, but after the business date has been rolled forward for the new business day), and the Trade Filter should specify ONLY Re-Issuance trades.

The scheduled task is set up as follows:



The Trade Filter setup is as follows:


TradeFilter Definition Window [110200/release/pdsd]
Name Re-Issue Trades
Time Zone NONE
Comment
Holidays
Check Holidays
Use SQL
Generate SQL
Parent NONE
Use Cache
(Expiry Hours) 0
0
(Minutes)
Set as default parent
Ranges
Product Criteria
Trade Criteria
Underlying Security
Post Processing
Position Spec
Counterparty
Currency IN
Product Type IN
BondMMDiscount,Bond
Product Family IN
Rate Index IN
Ccy Pair IN
Sub Type IN
Extended Type IN
Product Id IN
Sec Code
Description Like
Has Leg Types IN
Reference Entity
Add
IN
Remove
Load
New
Delete
Save
Save As
Usage
Help
Close



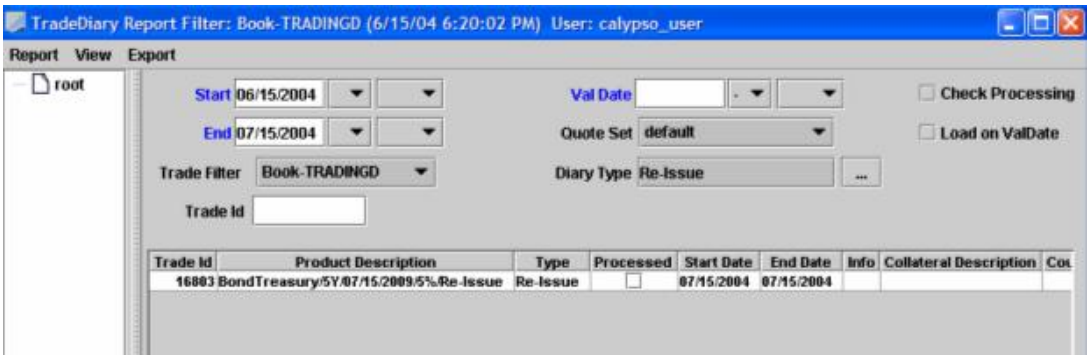
Note that only the Product(s) and the Market Type "Re-Issue" should be specified.

Re-Issue trades will be automatically modified (retaining the original trade id) to specify the original security in place of the re-issuance security. The trade's audit trail information will reflect this change.

Re-Issue trades are assimilated into the original security at start of day on the business day prior to the Re-Issue date.

Please note that the Re-Issue process views "today" to be the date specified in the Legal Entity Attribute "ACC_BUSINESS_DATE" in the Legal Entity Attributes of the Processing Org Legal Entity to which the Re-Issue trade's Book belongs. If the Processing Org does not use "ACC_BUSINESS_DATE", then the Re-Issue process will view today to be the server date.

To have the list of the upcoming Re-Issues, you can launch a Trade Diary with the Diary Type "Re-Issue".


TradeDiary Report Filter: Book-TRADINGD (6/15/04 6:20:02 PM) User: calypso_user
Report View Export
root
Start 06/15/2004
End 07/15/2004
Val Date
Quote Set default
Check Processing
Load on ValDate
Trade Filter Book-TRADINGD
Diary Type Re-Issue
Trade Id
Trade Id | Product Description | Type | Processed | Start Date | End Date | Info | Collateral Description
16883 BondTreasury/5Y/07/15/2009/5%/Re-Issue | Re-Issue | 07/15/2004 | 07/15/2004

22. Capturing Bond Option Trades

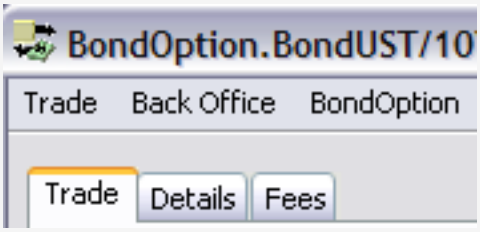
This document describes how to capture bond option trades using the Bond Option worksheet.

Navigate to **Trade > Fixed Income > OTC Bond Options** to open the Bond Trade window, from the Calypso Navigator or from the Trade Blotter.

Prior to capturing bond trades, you need to specify bond products using **Configuration > Fixed Income > Bond Product Definition**.

▶ See Defining Bond Products for details.

Bond Option Quick Reference



Entering Trade Details

» You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.

Or you can enter the trade fields directly. They are described below.

Note that the Trade Date is entered in the Details panel.

» Proceed to the other panels as applicable.

Saving a Trade

» Hit F5 to save the trade, or choose **Trade > Save**.

You can also hit F3 to save the current trade as a new trade, or choose **Trade > Save As New**.

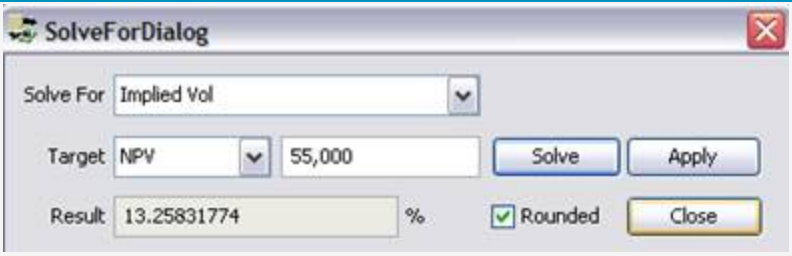
A description will appear in the title bar of the trade worksheet, a trade id will be assigned to the trade, and the status of the trade will be modified according to the workflow configuration.

Pricing a Trade

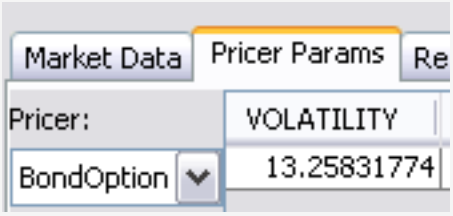
» You can choose **Pricing Env > Check** to check if all required pricing data are available in the Pricing Environment.

» Click **Price** to price the trade.

» You can hit F9, or choose **BondOption > Solve** to solve for the implied volatility.



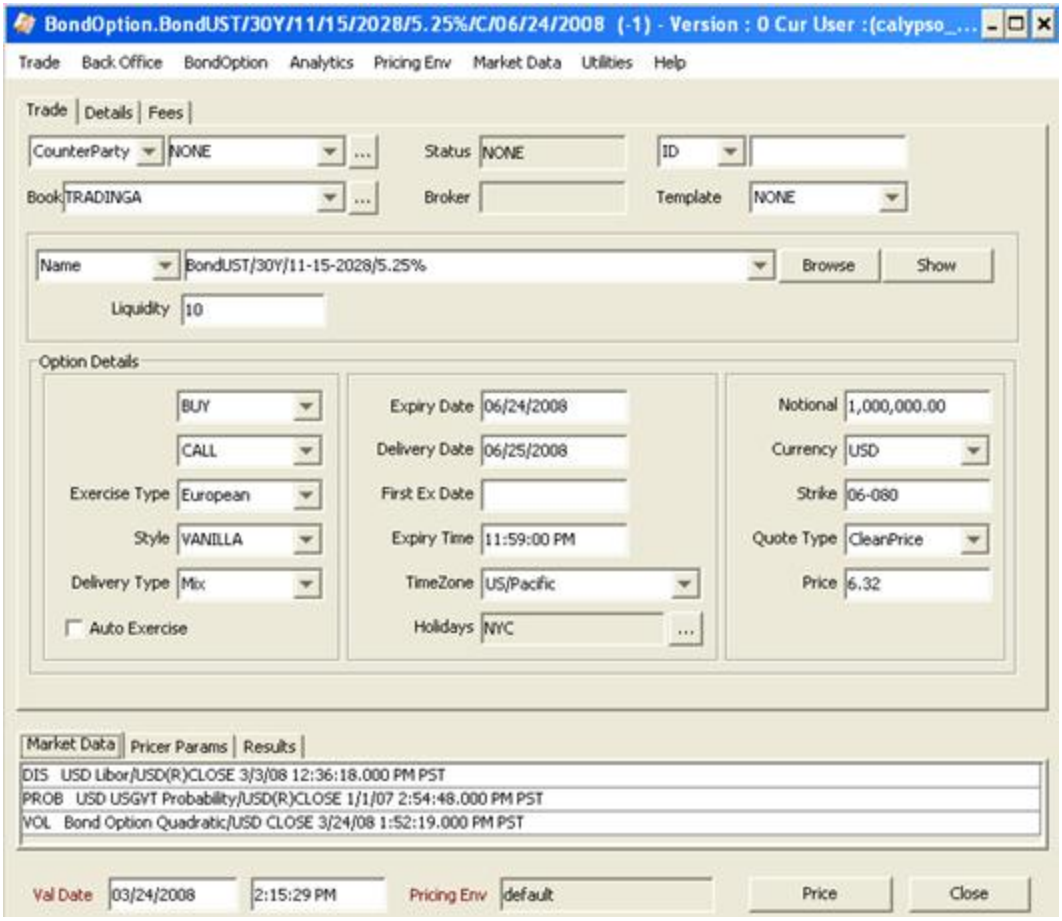
- Enter a target NPV and click **Solve**. It computes the corresponding volatility.
- You can click **Apply** to apply the volatility to the deal. It sets the pricing parameter VOLATILITY on the trade.



Trade Lifecycle

- You can allocate the trade to multiple books and legal entities using **Back Office > Allocate**.
- You can terminate the trade using **Back Office > Terminate**.
- You can exercise the bond option using **Back Office > Exercise**, or using the AUTOMATIC_EXERCISE scheduled task.

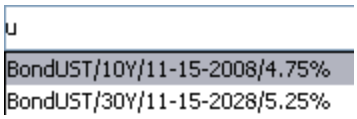
22.1 Sample Bond Option Trade



Bond Option Trade - Fields Details

Fields	Description
Trade Details	
Role / Cpty	The first two fields of the worksheet identify the trade counterparty. The first field identifies the trade counterparty's role. The default role is specified using **Utilities > Set Default Role**. However, you can change it as applicable. You can select a legal entity of specified role from the second field provided you have set up favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character. Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Otherwise, click ... to select a legal entity of specified role from the Legal Entity Chooser. You can also type [Ctrl-F] to invoke the Legal Entity Chooser, or directly enter a Legal Entity short name.

Fields	Description
Status	Current status of the trade. The status is automatically assigned by the system based on the workflow configuration. The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.
Id Ext Ref Int Ref	Unique identification number of the trade. The trade id is automatically assigned by the system when the trade is saved. You can load an existing trade by typing the trade id into this field, and pressing [Enter]. You can also display the internal reference of external reference. The default trade reference can be selected in the User Defaults. The internal reference and external reference can be set in the Details panel of the trade worksheet.
Book	Trading book to which the trade belongs. Defaults to the book selected in the User Defaults. You can modify as applicable. You can select a book provided you have set up favorite books. Favorite books are specified using **Utilities > Configure Favorite Books**. Otherwise, click ... to select a book. The owner of the book (a processing organization) identifies your side of the trade.
Broker	Displays the broker if a broker fee is captured in the Fees panel.
Template	You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.
Underlying Bond Details	
Product code Product description	You can select a bond using one of the following methods: Product Code Selection or Browser Selection, they are described below. Once you have selected a bond, the value of the alternative product code is displayed in the field adjacent to the Browse button. The alternative product code is specified in the User Defaults. You can click **Show** to view the details of the selected bond. ***Product Code Selection*** The product code defaults to the security code specified in the User Defaults. You can select another product code as applicable. Note that the Name product code searches the bond short names. » Type in a few characters of the code value in the adjacent field. The system searches all the bonds defined in the system, unless a quick entry template has been specified, in which case the system only searches the bonds filtered by the quick entry template.

Fields	Description
	Also, if the environment property **USE_SUBSTRING_IN_BOND_NAME_QUERY=true** is set, the system searches all the letters in the product code values. Otherwise, it only searches from the start. The bonds that satisfy the request are displayed in a list.  » Select a bond from the list. ***Browser Selection*** Click **Browse** to select a product from a user-defined bond browser. See Defining Bond Browsers for information on creating bond browsers.  » Select a report template to display the corresponding bonds, and double-click a bond from the list to select it. If you do not have report templates, simply click **Search** to browse all existing bonds. You can right-click any column and choose Configure Columns to customize the display.
Liquidity	Enter the liquidity factor of the bond.
Option Details	
BUY/SELL	Direction of the trade from the book's perspective. Double-click the BUY label to switch to SELL as applicable.
CALL/PUT	Direction of the option. Double-click the CALL label to switch to PUT as applicable.
Exercise Type	Select European or American.
Style	Only VANILLA is available.
Delivery Type	Select the delivery type: Mix, Cash or Physical.
Auto Exercise	Check the "Auto Exercise" checkbox to allow automatic exercise. Bond options can be automatically exercised using the AUTOMATIC_EXERCISE scheduled task, provided they are in-the-money. Otherwise, choose **Back Office > Exercise** to exercise the option. Help is provided from that window.
Expiry Date	Enter the expiration date. It is also the last exercise date for American options.
Delivery Date	Enter the delivery date. It defaults to Expiry Date + bond's Settle Days.

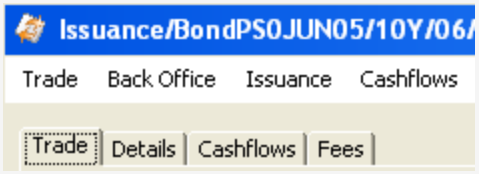
Fields	Description
First Ex Date	This field is only active for American options. Enter the first exercise date.
Expiry Time	Enter the time at which the option expires, in the selected timezone.
TimeZone	Select the timezone for the expiration time.
Holidays	Click ... to select holiday calendars.
Notional	Enter the notional amount of the underlying bond.
Currency	Select the currency you are using to buy or sell.
Strike	Enter the strike price.
Quote Type	Select the quote type of the strike price. It defaults to the quote type of the selected bond. Note that the strike is always considered as a dirty price.
Price	Enter the option price.

23. Capturing Issuance Trades

An issuance trade allows configuring issues offered by a processing org.

To configure an issuance trade, navigate to **Trade > Fixed Income > Issuance** (menu action `trading.TradeIssuanceWindow`).

Issuance Quick Reference



Entering Trade Details

- You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.

  Or you can enter the trade fields directly. They are described below.

  Note that the Trade Date is entered in the Details panel.
- Proceed to the other panels as applicable.

Saving a Trade

- Hit F5 to save the trade, or choose **Trade > Save**.

  You can also hit F3 to save the current trade as a new trade, or choose **Trade > Save As New**.

  A description will appear in the title bar of the trade worksheet, a trade id will be assigned to the trade, and the status of the trade will be modified according to the workflow configuration.

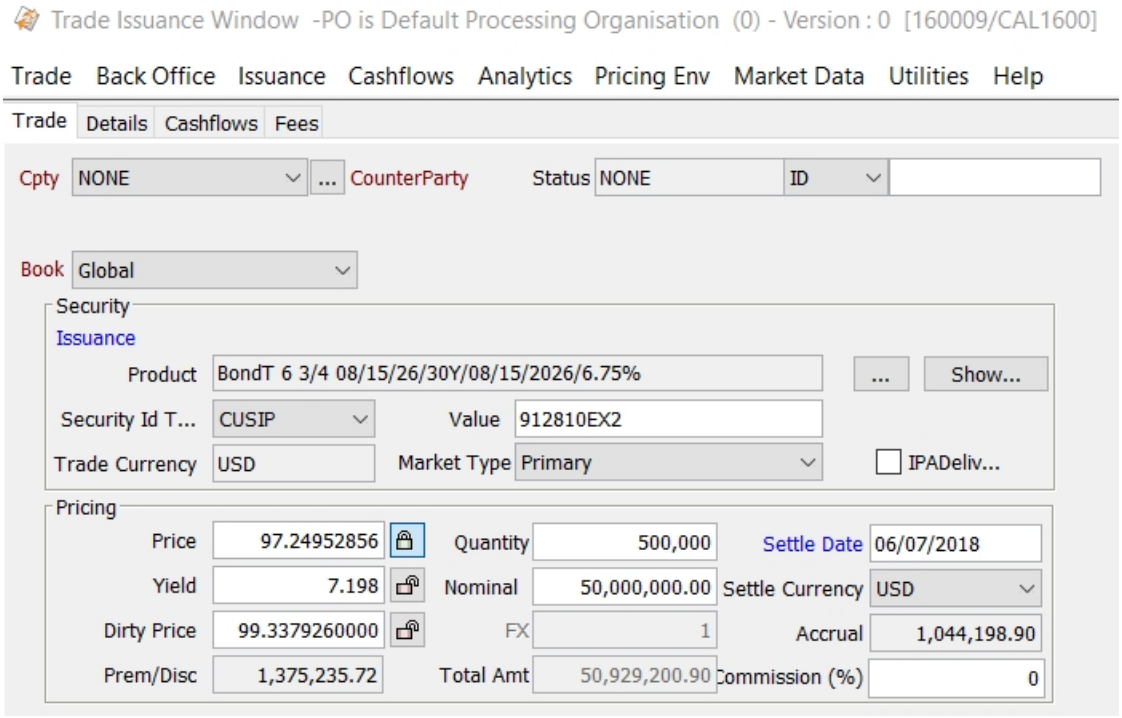
Pricing a Trade

- You can choose **Pricing Env > Check** to check if all required pricing data are available in the Pricing Environment.
- Click **Price** to price the trade.

Trade Lifecycle

- You can allocate the trade to multiple books and legal entities using **Back Office > Allocate**.
- You can terminate the trade using **Back Office > Terminate**.
- You can apply corporate actions using **Trade Lifecycle > Corporate Action > Corporate Action**, or using the CORPORATE_ACTION scheduled task.

23.1 Sample Issuance Trade



Issuance Trade - Fields Details

Fields	Description
Cpty	Trade counterparty. It will control the settlement and delivery instructions of the trade. The Trade counterparty is a Legal Entity. The default role is Counterparty, however, you can change this role as applicable. Double-click the Counterparty label to change the role. You will be prompted to select a role. You can select a legal entity of specified role provided you have set up favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character. Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Click ... to select a legal entity of specified role from the Legal Entity Chooser. You can also type Ctrl-F to invoke the Legal Entity Chooser, or directly enter a Legal Entity short name.
Book	Trading book to which the trade belongs. Defaults to the book selected in the User Defaults. The processing org of the book identifies the processing org of the trade.
Status	Current status of the trade. The status is automatically assigned by the system based on the workflow configuration.

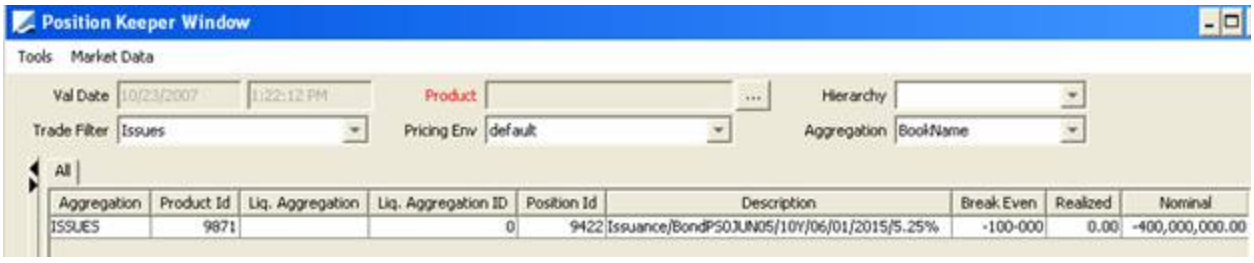
Fields	Description
	The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.
Id Ext Ref Int Ref	Unique identification number of the trade. The trade id is automatically assigned by the system when the trade is saved. You can load an existing trade by typing the trade id into this field, and pressing [Enter]. You can also display the internal reference or external reference. The default trade reference to be displayed can be selected in the User Defaults. The internal reference and external reference can be set in the Details panel of the trade worksheet.
Issuance / Closing	Type of trade. Double-click the Issuance label to change to Closing as applicable. Closing actually corresponds to ending the Issuance.
Product	Click ... to open the Product Chooser window for selecting a bond. The bond should have the following characteristics: • The Issuer should be the processing org of the selected book. • The Issue Paying Agent (IPA) should be populated. The IPA handles the coupon payments for the issuer, and will be used in the corporate action process. SDIs should be defined for the bond's IPA for the IPA role. You can click **Show** to display the bond's details.
Security Id Type Value	Defaults to the product code selected in the User Defaults, and displays its value. You can select another product code as applicable.
Trade Currency	Defaults to the bond's currency. You can select another currency as applicable.
Market type	Defaults to Primary.
Price	Enter the issue or closing clean price. The Dirty Price and Yield fields will be computed accordingly.
Yield	Displays the issue or closing yield.
Dirty Price	Displays the issue or closing dirty price (price + accrual as applicable).
Prem/Disc	Displays the issue premium discount (difference between the issue and the redemption price).
Quantity	Defaults to the issued quantity of the selected product.
Nominal	Defaults to the issued nominal of the selected product. The nominal should not be higher than the issued nominal.
FX	Only applies when the settlement currency is different from the trade currency.

Fields	Description
	Enter the FX rate between the settlement currency and the trade currency as needed.
Total Amt	Displays the settlement amount in settlement currency.
Settle Date	Settlement date of the trade. The settlement date defaults to the trade date. Double-click the Start Date label to apply the number of settlement days specified in the selected product. The settlement date uses the holiday calendar selected in the User Defaults to identify business days. You can modify the settlement date as applicable.
Settle Currency	Defaults to the trade currency. You can modify the settlement currency as applicable. You can use the environment property USE_ISSUANCE_CCY. When true, transfers use the product currency regardless of the settlement currency. When false, transfers use the settlement currency. Default is false.
Accrual	Accrual amount.
Commission %	Percentage of issuance commission. This percentage will be applied to the position at the time of coupon. Use the Fee panel, if a commission has to be paid at the beginning of the issuance.

23.2 Issuance Position

From the Calypso Navigator, navigate to **Position & Risk > Positions** to view the open position of the issuance, provided the liquidation is running.

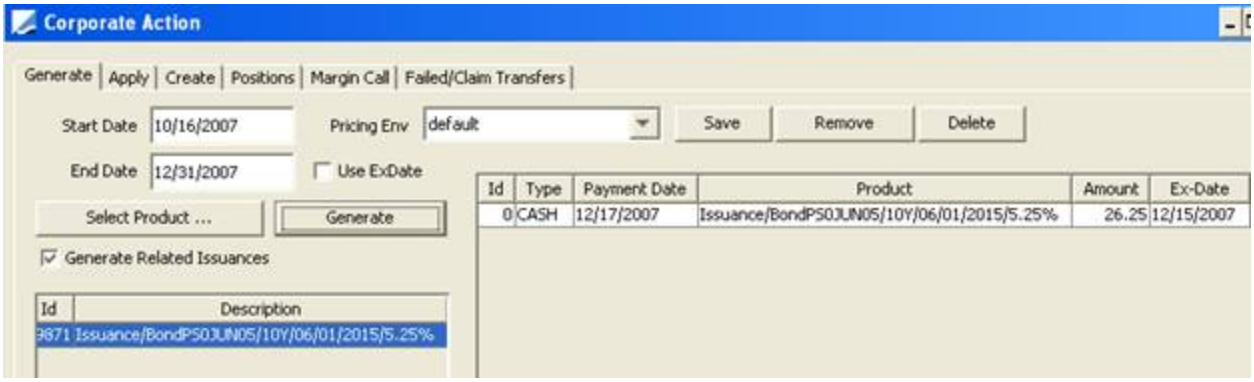
Note that the system creates an Issuance product linked to the bond, when the Issuance Trade is validated.



23.3 Issuance Corporate Actions

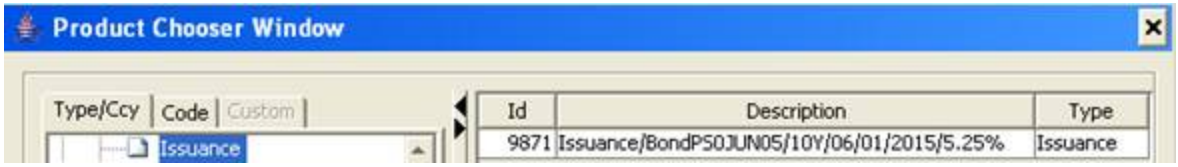
From the Calypso Navigator, navigate to **Trade Lifecycle > Corporate Action > Corporate Action** to generate corporate actions. The Corporate Action window will appear as shown below.

The characteristic of corporate actions on issuance trades is that they are generated on the Issuance product created by the system and not on the bond of the issuance trade.



» Enter the start and end dates as applicable.

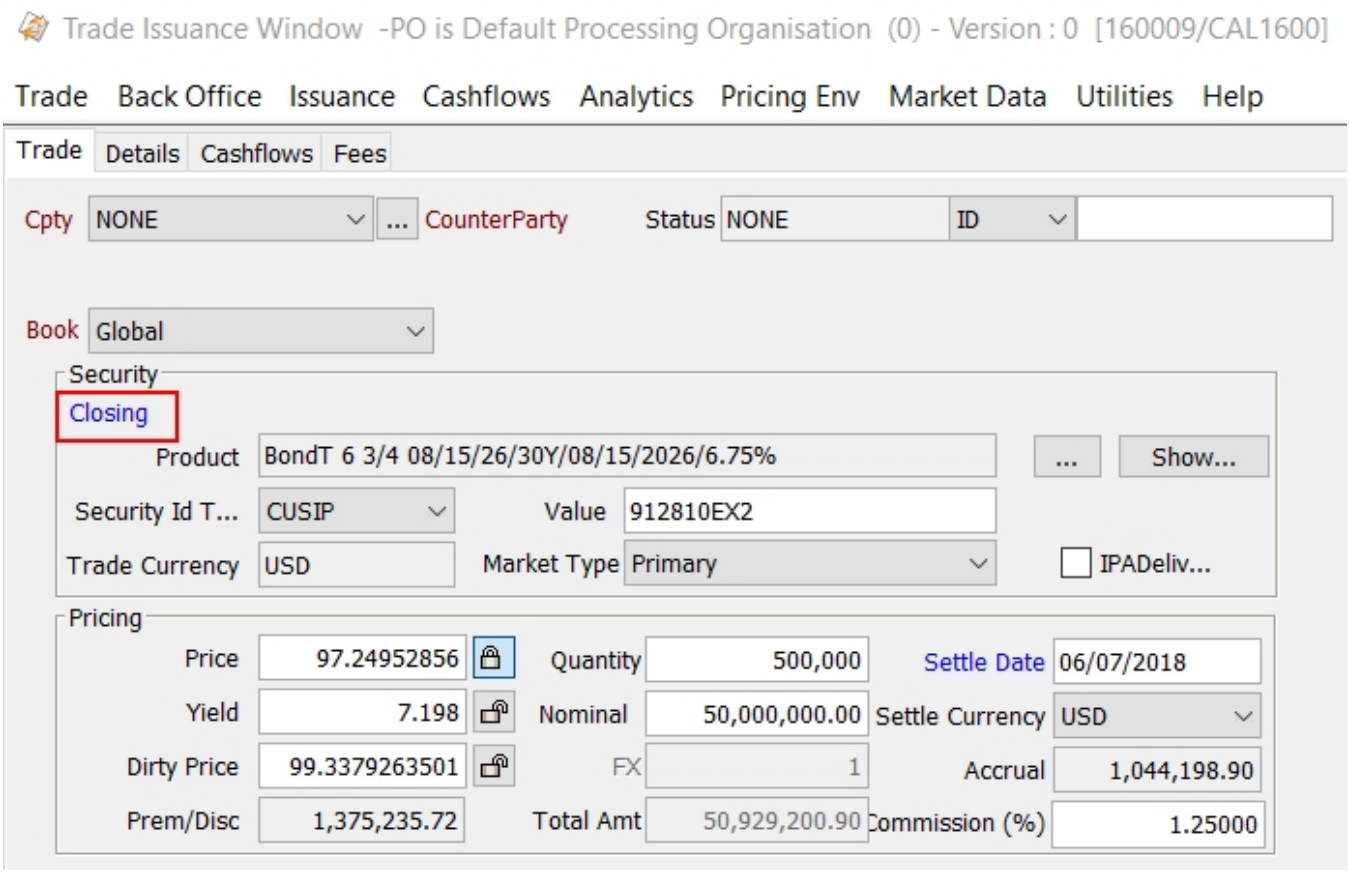
» Click **Select Product** and choose the Issuance product as shown below.



» Then click **Generate** to generate the corporate actions.

23.4 Closing an Issuance

You can close an issuance by entering a Closing trade on the bond using the Issuance window to buy back the bond.



The Closing trade will liquidate the entire open position of the bond.

24. Domiciliation

The Domiciliation module is used to help Banks with their domiciliation activity (i.e. carrying out of external issuances for non financial institutions).

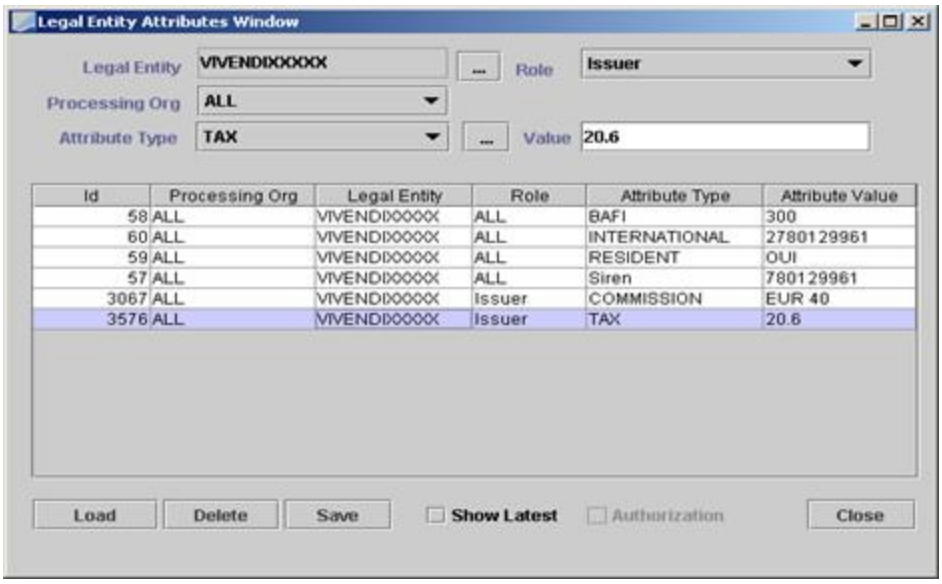
Contents

24.1 Setup

24.1.1 Setup of the Legal Entity

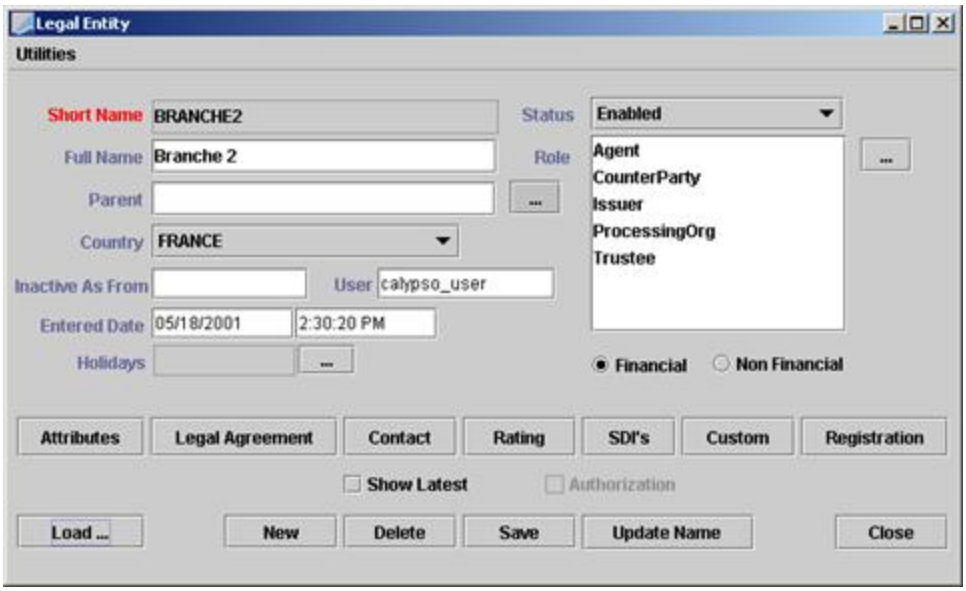
First, add for the Legal Entity the role of Issuer, with the following attributes:

- COMMISSION — with the commission amount, the field should be filled in as CCY AMOUNT
- TAX — with the VAT percentage to be applied



Legal Entity Attributes Window

Second, you need to define your Processing Organization with the Role = Trustee in **Configuration > Legal Data > Legal Entities**.



Legal Entity Window

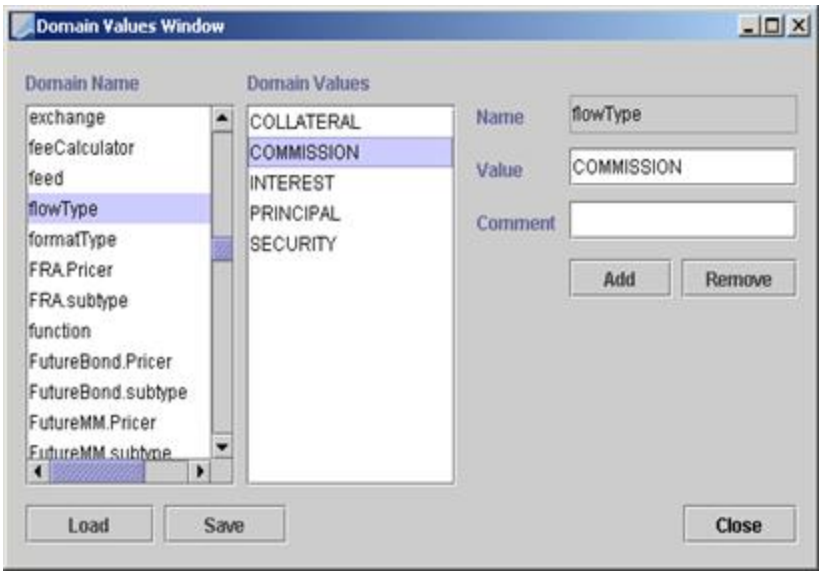
24.1.2 Setup of the Bond Products

When you enter an issue for which your processing organization handles the domiciliation activity, you need to fill in the Trustee with the name of the Processing Org.

Once the commission has been generated for this bond, the Commission Paid flag will be switched to ON by the system.

24.1.3 Domain Values Setup

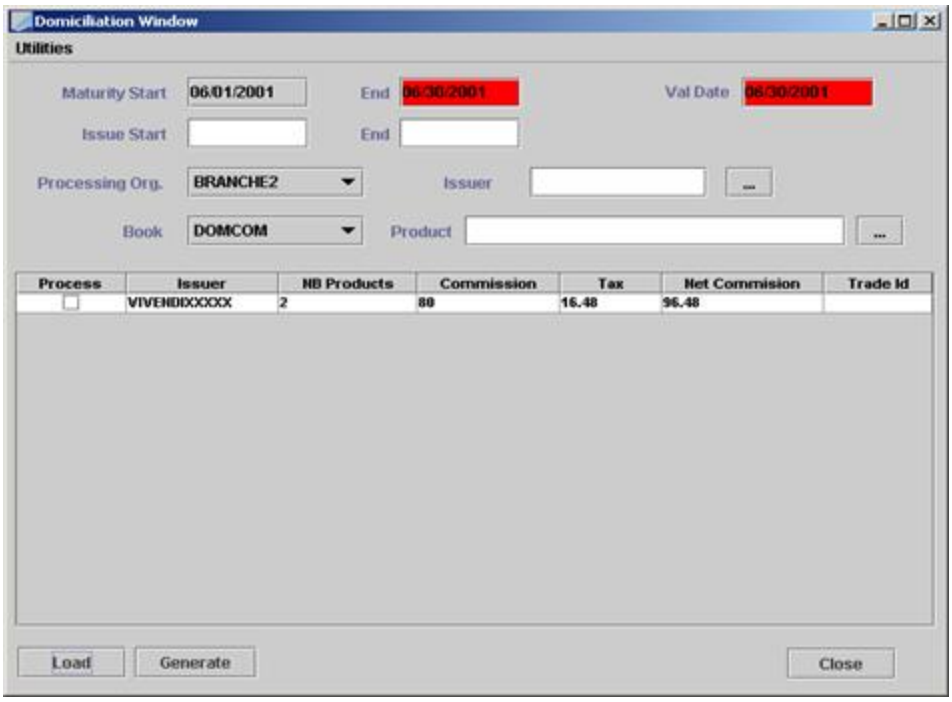
In order to automatically generate Simple Transfers of COMMISSION type, add the COMMISSION value to the *flowType* domain:



24.2 Domiciliation Process

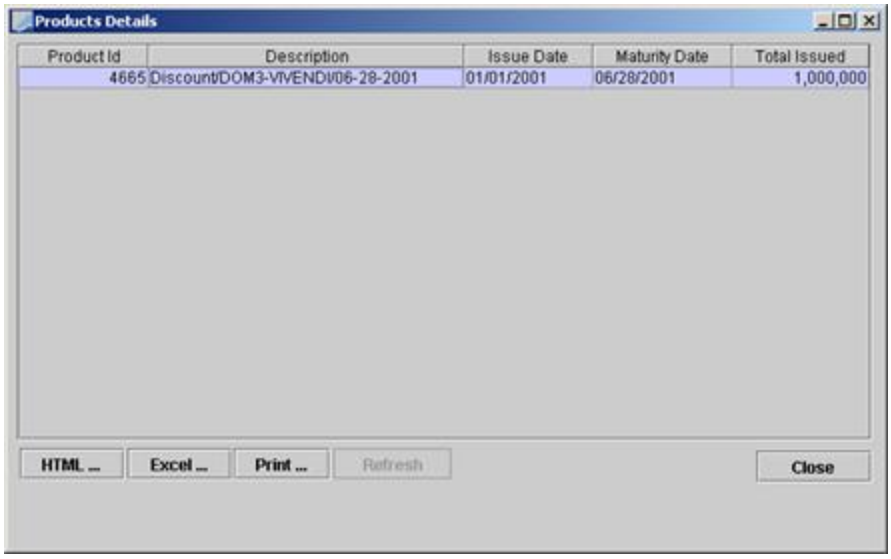
The Domiciliation process generates the Domiciliation commissions. It works through the Legal Entity and Product setup.

From the Calypso Navigator, navigate to **Trade Lifecycle > Corporate Action > Domiciliation** to bring up the Domiciliation window as shown below.



» Enter search criteria as applicable and click **Load** to display the positions per issuer that need to be invoiced. If some issues have already been invoiced, they will no longer appear in this window.

» You can check the amount of commission per issuer by right-clicking on each row to see details of the issues:



» If you agree with the amount of commission, check the Process checkbox and click **Generate**. This will generate a Simple Transfer with the sub-type = COMMISSION.

24.2.1 Utilities Menu

The menu items of the Utilities menu are described below.

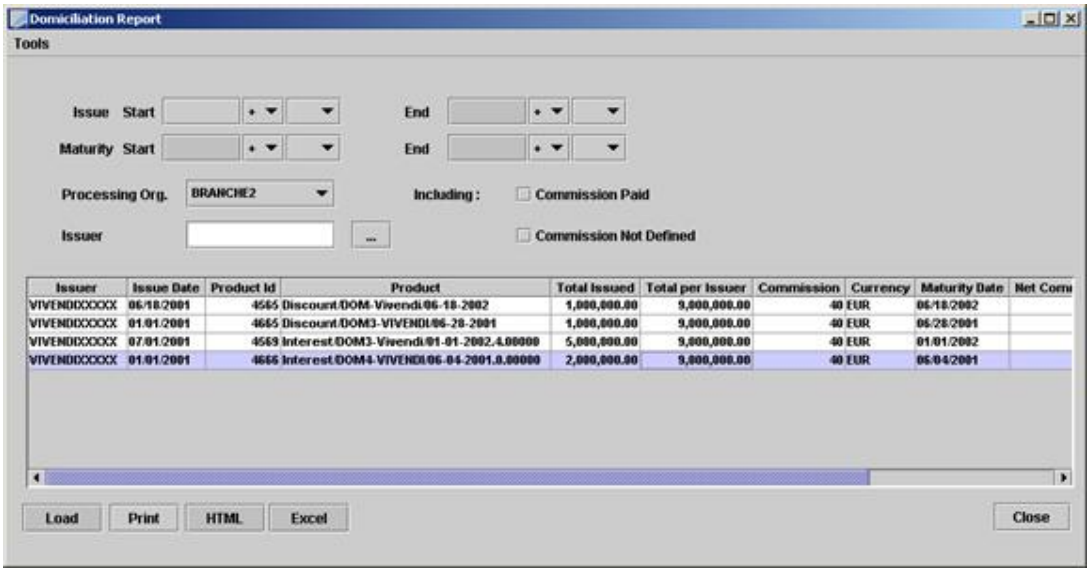
Menu Items	Description
Show Products	To show details of the displayed position, product by product (same view as when you right-click a row).
Show Trade	To display the generated Simple Transfers.
Generate	To generate the Simple Transfers for the rows with the Process checkbox checked.
Print Print Landscape	To print the report.
Close	To close the window.

24.3 Domiciliation Report

The Domiciliation Report displays products or trades for which a processing org is handling the domiciliation activity (issuances for non financial institutions).

A product is qualified for domiciliation provided the Trustee is defined in the product definition (processing org of role Trustee). A trade is qualified for domiciliation if the product is qualified for domiciliation.

The Domiciliation report can be launched from **Reports > Securities Reports > Domiciliation Report** either daily or monthly or as frequently as you require.



Domiciliation Report

» Specify search criteria as applicable and click **Load** to load the corresponding products or trades.

Check the By Trade checkbox to load qualified trades, or uncheck the By Trade checkbox to load qualified products.

The Commission Paid checkbox should be checked if the domiciliation commissions have been generated.

- Click **Print** to print the report results.
- Click **HTML** to export the report results to an HTML page.
- Click **Excel** to export the report results to an Excel spreadsheet.

Fields	Description
Issue Start / End	Allows you to display the issues that are issued between the Issue start and the Issue end dates. For example, if you need to display for a given day the issues of the day, put the given day as Issue Start and Issue End.
Maturity Start / End	Allows you to display the issues that mature between the Maturity Start and End dates.
Processing Org	Choose the Processing Org which is the Trustee of the issues.
Issuer	You can either display all issuers or a specific one.
Including Commission Paid	If you click on Commission Paid, the report will include the issues for which you already had launched the invoice process.
Including Commission Not Defined	If you click on Commission Not defined, the report will include the issues for which the attribute Commission of the issuer is either not filled in or is wrongly filled in.

24.3.1 Tools Menu

The menu items of the Tools menu are described below.

Menu Items	Description
New	Refreshes the screen before launching a new report.
Load	Same as the Load button at the bottom of the screen: displays the report.
Save as template	Allows you to save your selection.
Load template	Allows you to load a saved selection.
Delete template	Allows you to delete a saved selection.
Show Product	Goes directly to the Product Definition and displays the description of the chosen product.
Configure Columns	Allows you to define the columns you wish to see in your report.

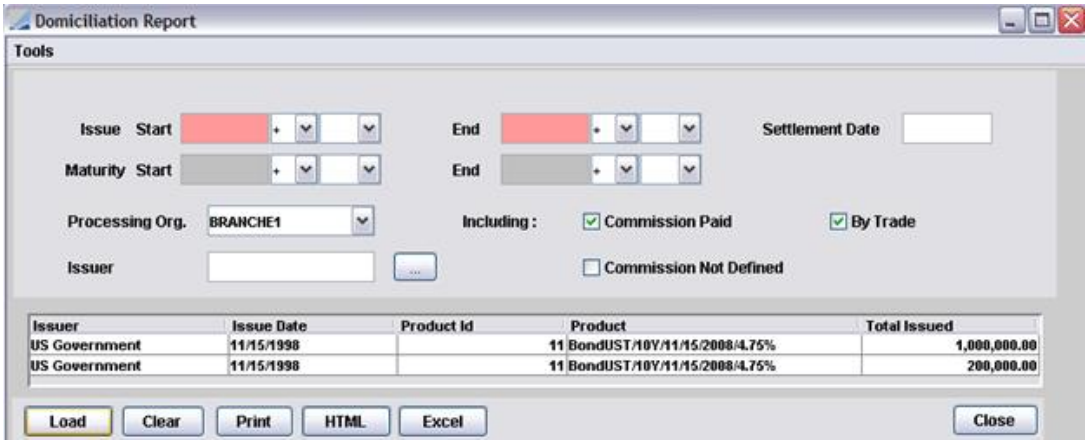
24.3.2 Domiciliation Report Results by Product

You can click any column heading to sort the results based on that column.

Product Details

Double-click a product to display its details.

24.3.3 Domiciliation Report Results by Trade



You can click any column heading to sort the results based on that column.

Trade Details

Providing you add the Trade Id to the column configuration, you can double-click a trade to view its details.

25. Eligible Securities Messages

You can generate reda.025 messages to request the eligibility of securities for auto-collateralisation, and integrate reda.028 messages to obtain the status of the request.

25.1 Setup Requirements

25.1.1 Domain Values

Domain "MX.Versions"

Value = reda.025.001.T2S

Domain "messageType"

Value = REDA025

Domain "Reda025CollatCurrency"

Value = <list of collateral currencies>

Example - Value = USD,DKK,EUR

Domain "Reda025Receiver"

Value = <receiver Swift code>

Domain "Reda025Sender"

Value = <sender Swift code>

Domain "Reda025OnTheFlyGateway"

Value = MX

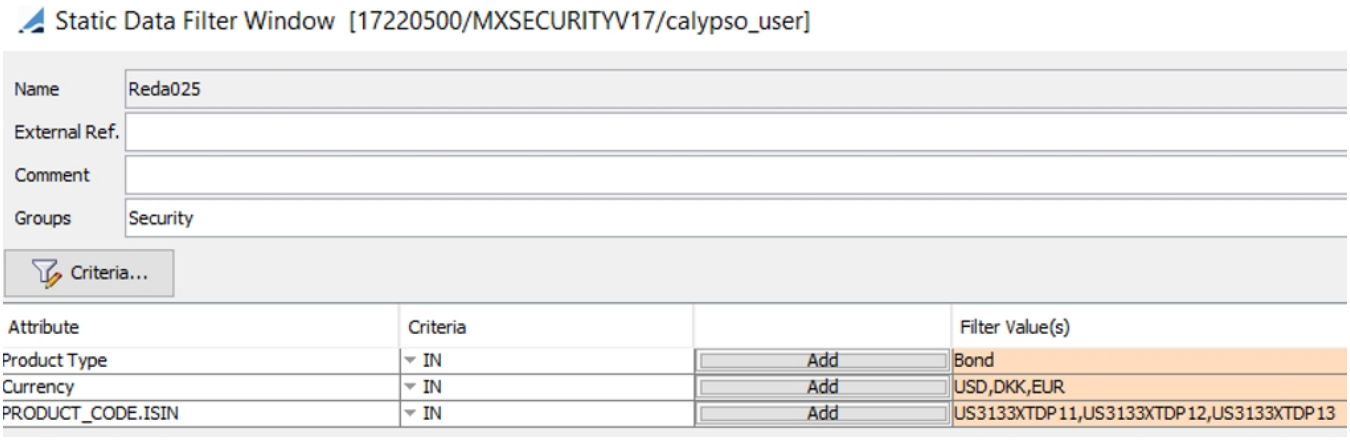
Domain "incomingType"

Value = REDA028, Comment = POS_RECON

25.1.2 Static Data Filter

You need to define a static data filter to select the eligible securities to be requested, with the currencies specified in domain "Reda025CollatCurrency" and the ISIN codes.

Example:

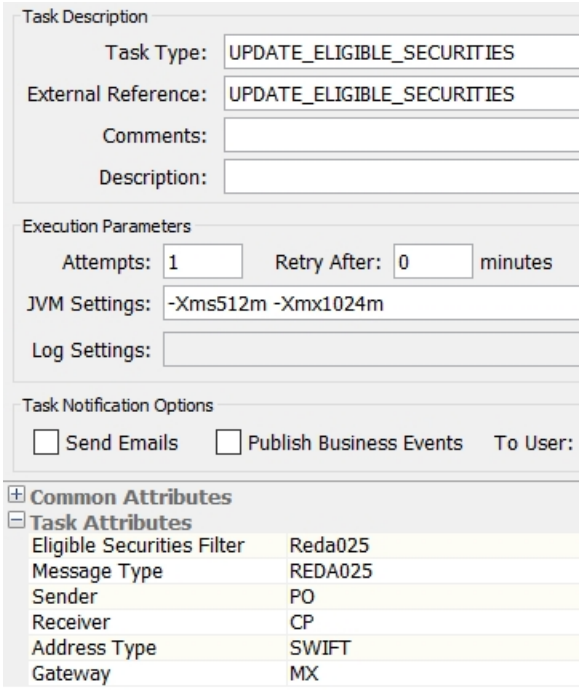


Incoming Message Workflow for POS_RECON

Orig Status	Action	Resulting Status	Create Task	Use STP	Same User	Rules
NONE	NEW	PENDING	On Failure	False	True	
INTEGRATED	MATCH	MATCHED	On Failure	False	True	SetXferMessageRef
PENDING	PROCESS	INTEGRATED	On Failure	True	True	

25.2 Generating reda.025 Messages

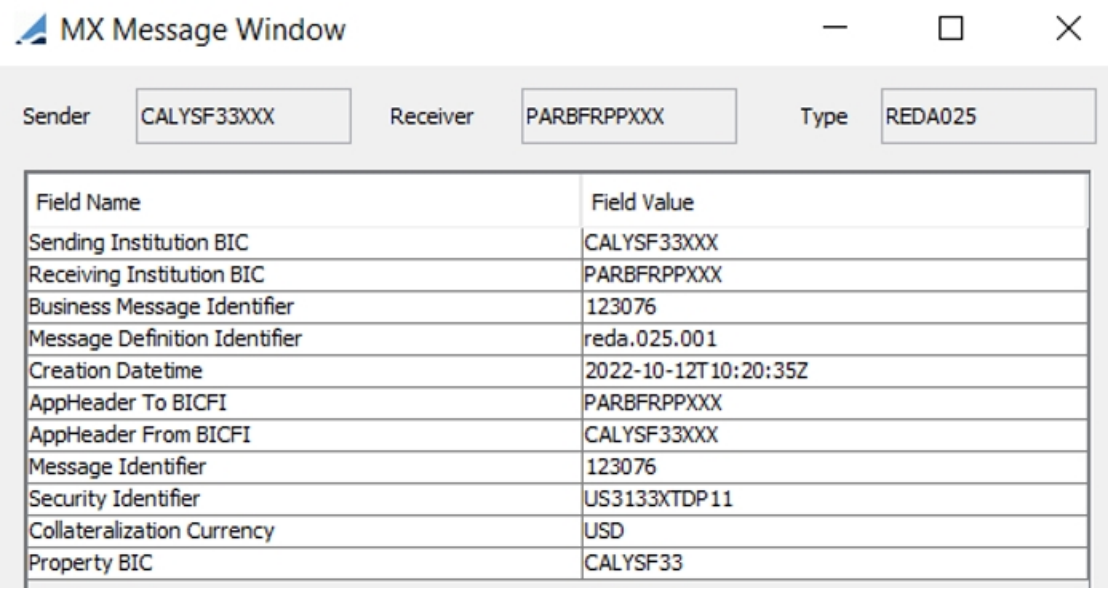
reda.025 messages are generated using the scheduled task UPDATE_ELIGIBLE_SECURITIES.



Attributes

- Eligible Securities Filter - Select a static data filter that contains the eligible securities to be requested.
- Sender - Select a processing org - The Swift code must match the code defined in domain "Reda025Sender".
- Receiver - Select a counterparty - The Swift code must match the code defined in domain "Reda025Receiver".
- Address Type - Select the SWIFT address type.
- Gateway - Select the gateway defined in domain "Reda025OnTheFlyGateway".

Sample Message



Field Name	Field Value
Sending Institution BIC	CALYSF33XXX
Receiving Institution BIC	PARBFRPPXXX
Business Message Identifier	123076
Message Definition Identifier	reda.025.001
Creation Datetime	2022-10-12T10:20:35Z
AppHeader To BICFI	PARBFRPPXXX
AppHeader From BICFI	CALYSF33XXX
Message Identifier	123076
Security Identifier	US3133XTDP11
Collateralization Currency	USD
Property BIC	CALYSF33

25.3 Integrating reda.028 Messages

You can integrate reda.028 messages using the scheduled task MESSAGE_MATCHING to obtain the status of request.

The incoming reda.028 message is linked to the outgoing reda.025 message using the message attribute MessageRef = Tag <CollDataStsAdvc><OrgnlMsgId><Id>, which should be the Message Id of the reda.025 message.

The message attribute ReturnStatus (Tag <CollDataStsAdvc><StsRsn><Sts>)

indicates the status of the request:

COMP - Creation completed

QUED - Creation queued

REJT - Creation rejected