Nasdaq Calypso

Futures and Future Options Trading

Version 18

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June 2024

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 - Added NEVER option to UseAccInFutureExplode.
3.0	June 2024	Updates for version 18 monthly release - Rounding of Non-CBOT exchanges.

This document guides you through the setting and capture of Future and Future Option Trades.

The legacy methods for computing variation margins will be deprecated in an upcoming release. It is recommended to use the scheduled task CLEARING_VM_CALC instead, along with the associated account structure and clearing statement, as described in the Calypso ETD Clearing Setup Guide.

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1. Overview

Future and Future Option Setup

- Market Places
- Brokers
- Clearers
- Environment Properties
- Trading Fees
- Future Contract Definition
- Future Option Contract Definition

[NOTE: For Listed Derivatives Clearing, please refer to Calypso ETD Clearing documentation for information on full setup requirements and trade capture]

Market Data Requirements

Market data requirements for Futures trades depend on the type of trade that is being captured. For specific trade types, see below.

Trade Capture

This section describes the various types of Future 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 Trading Environment documentation: trade functions, trade menus, Details panel, Cashflows Panel, and Fees panel.

Trade Lifecycle

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

- Allocation - See **Back Office > Allocate** in the trade window
- Termination - **Back Office > Terminate** or terminating cash trades in bulk using **Trade Lifecycle >Termination > Terminate** from the Calypso Navigator.
- Expiration - From the Calypso Navigator, navigate to **Trade Lifecycle > Expiration & Exercise > Future Expiry** or the FUTURE_POSITION_EXPIRY scheduled task

- Exercise - From the Calypso Navigator, navigate to **Trade Lifecycle > Expiration & Exercise > Fut Opt / ETO Exercise**

Trade Processing

- Manual Liquidation
- Capturing Simple Transfers
- Updating Clearing Accounts (Corporate Action Method)
- Generating Clearing Statements

The legacy methods for computing variation margins will be deprecated in an upcoming release. It is recommended to use the scheduled task CLEARING_VM_CALC instead, along with the associated account structure and clearing statement, as described in the Calypso ETD Clearing Setup Guide.

2. Defining Market Places

Futures and futures options are listed on market places. The market place is needed when specifying future contracts and future option contracts.

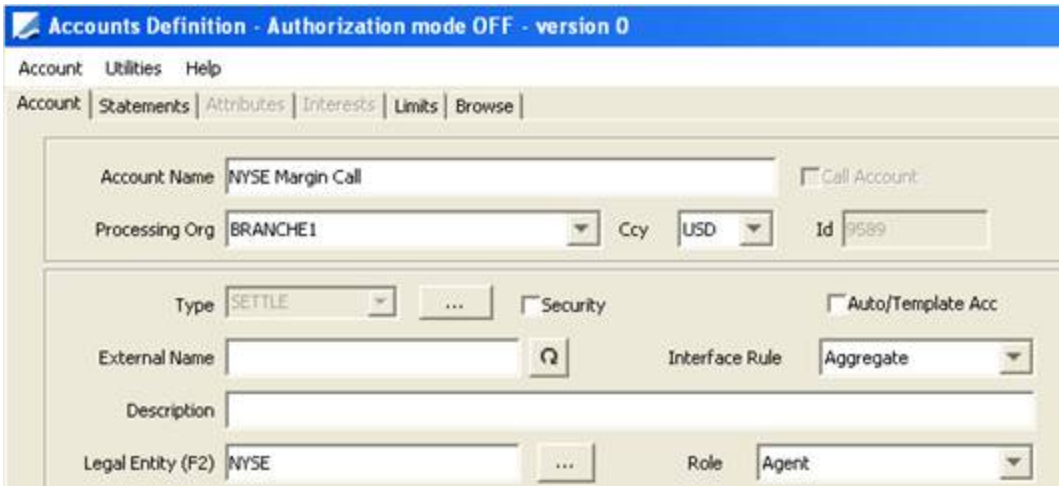
2.1 Legal Entity Setup

The market place should have the roles MarketPlace, Agent, and Clearer.

Set the legal entity attribute “SpotDays” on the market place. The SpotDays + the holidays attached to the market place in the legal entity are used to compute the settle date.

2.2 Account Setup

You need to define a SETTLE account with the account holder set as the market place.



3. Defining Brokers

When you capture future and future option trades, you can specify a broker and compute broker fees.

The broker is a legal entity with role Broker.

▶ See Defining Trading Fees for details.

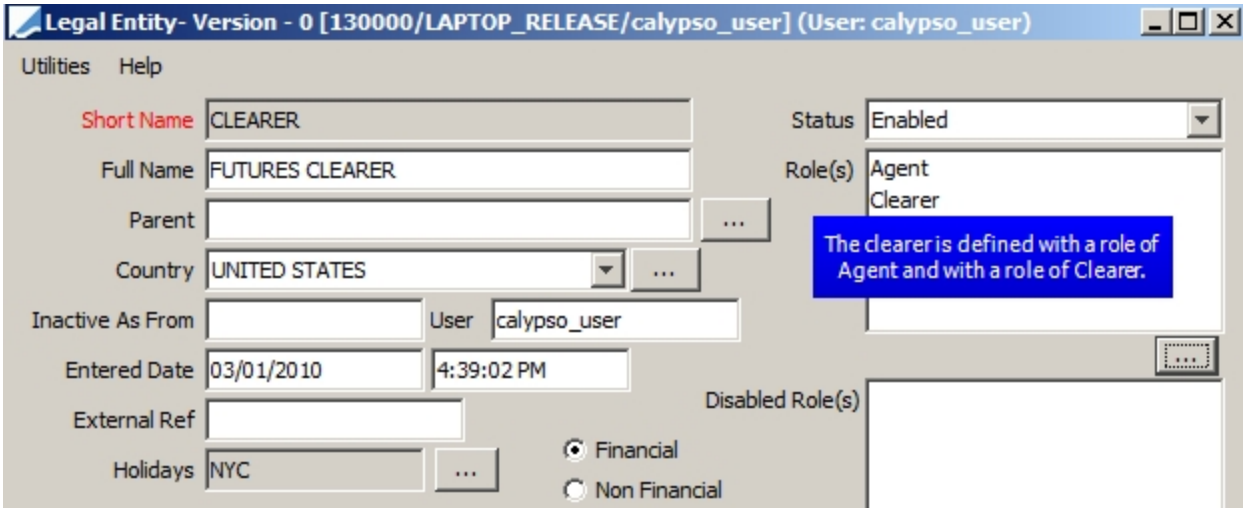
4. Defining Clearers

The legacy methods for computing variation margins will be deprecated in an upcoming release. It is recommended to use the scheduled task CLEARING_VM_CALC instead, along with the associated account structure and clearing statement, as described in the Calypso ETD Clearing Setup Guide.

A clearer is the legal entity that holds the processing org's clearing accounts on a given market place. It is also the trade's counterparty for future and future option trades.

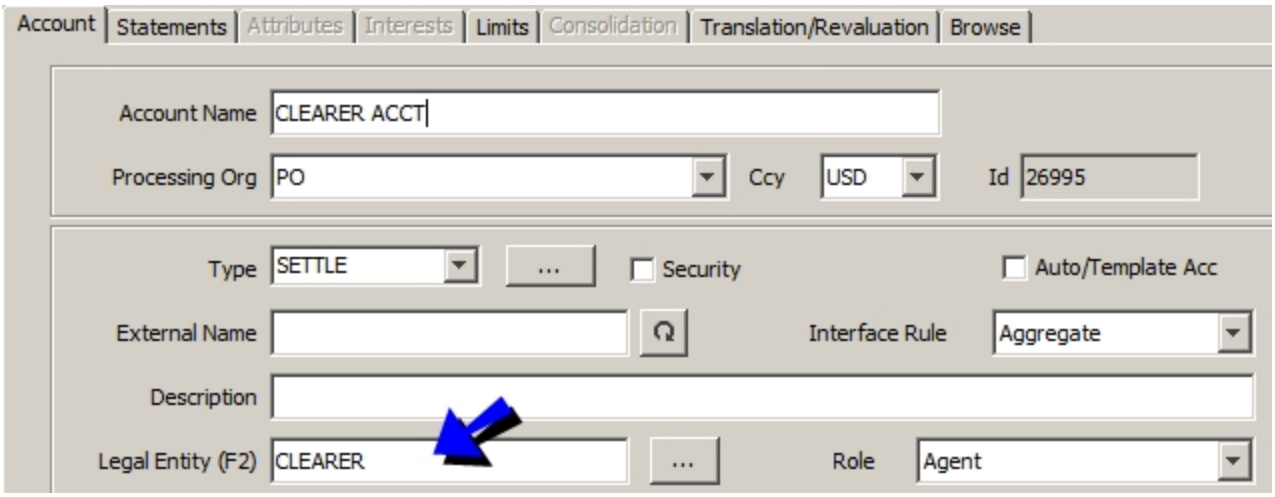
The role Agent is used to generate margin calls and account statements, and the role Clearer is the trade's counterparty and is used to compute clearing fees and execution fees.

4.1 Legal Entity Setup

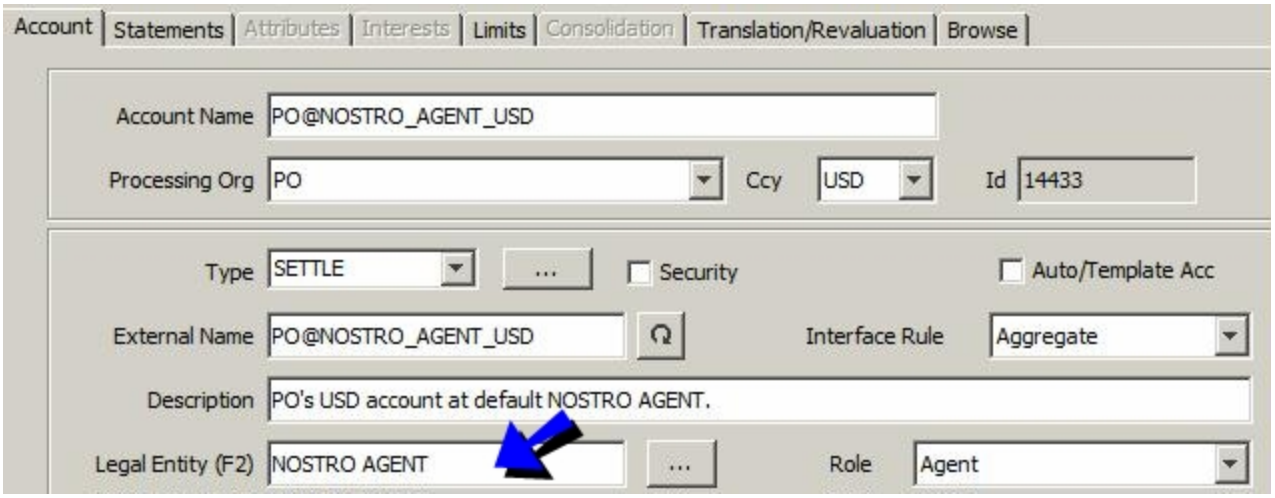


4.2 Account Setup

You need to define a SETTLE account with the account holder set as the clearer.



You also need a Nostro account for the processing org.



4.3 Settlement Instructions

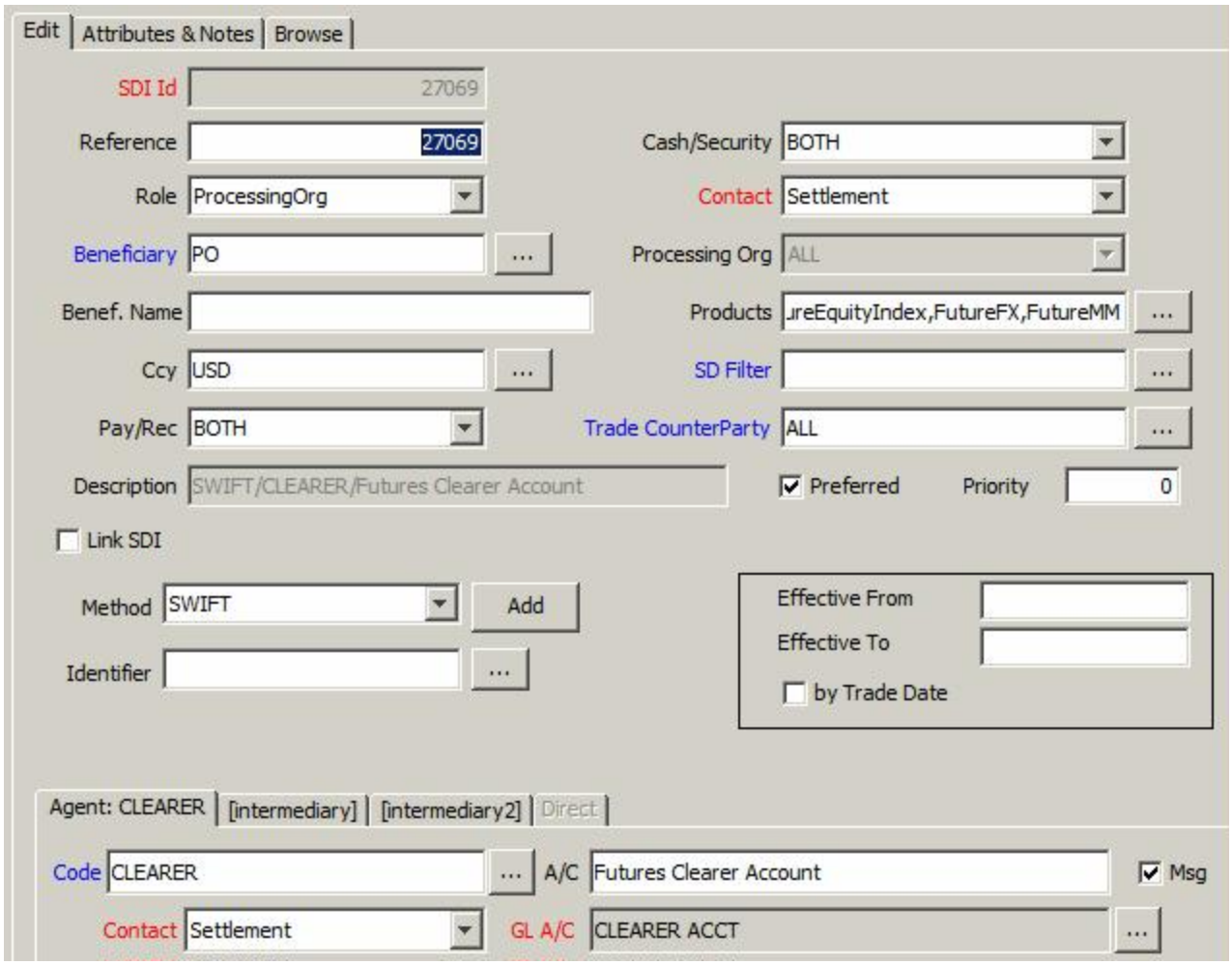
The settlement instructions should be setup as follows.

4.3.1 Processing Org

- Beneficiary = Processing org (example PO, role ProcessingOrg)

  Agent = Clearer (example CLEARER)

  GL Account = PO settlement account at clearer

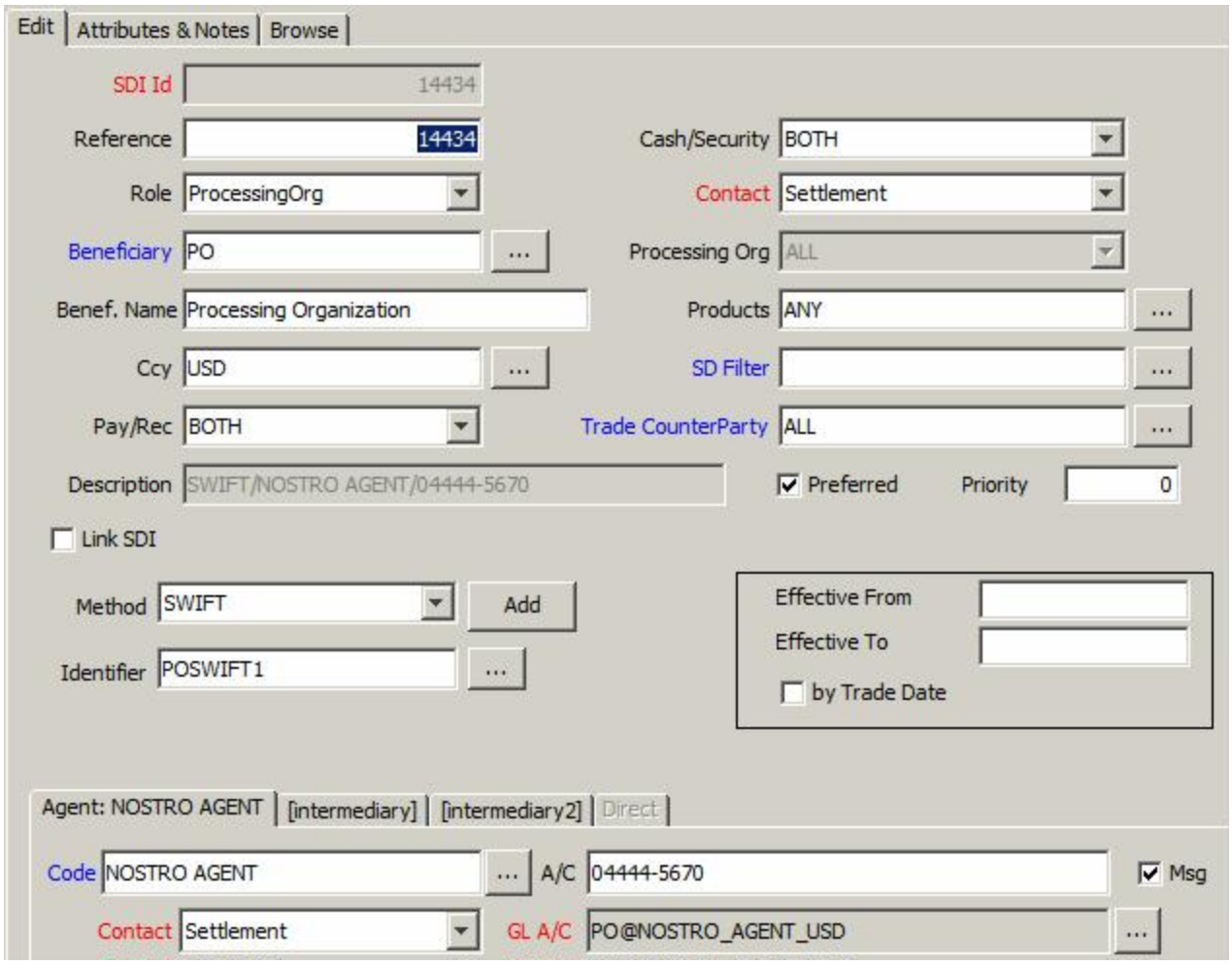


The transfers settled using this SDI will be registered in the account "CLEARER ACCT"

- Beneficiary = Processing org (role ProcessingOrg)

  Agent = Nostro (role Agent)

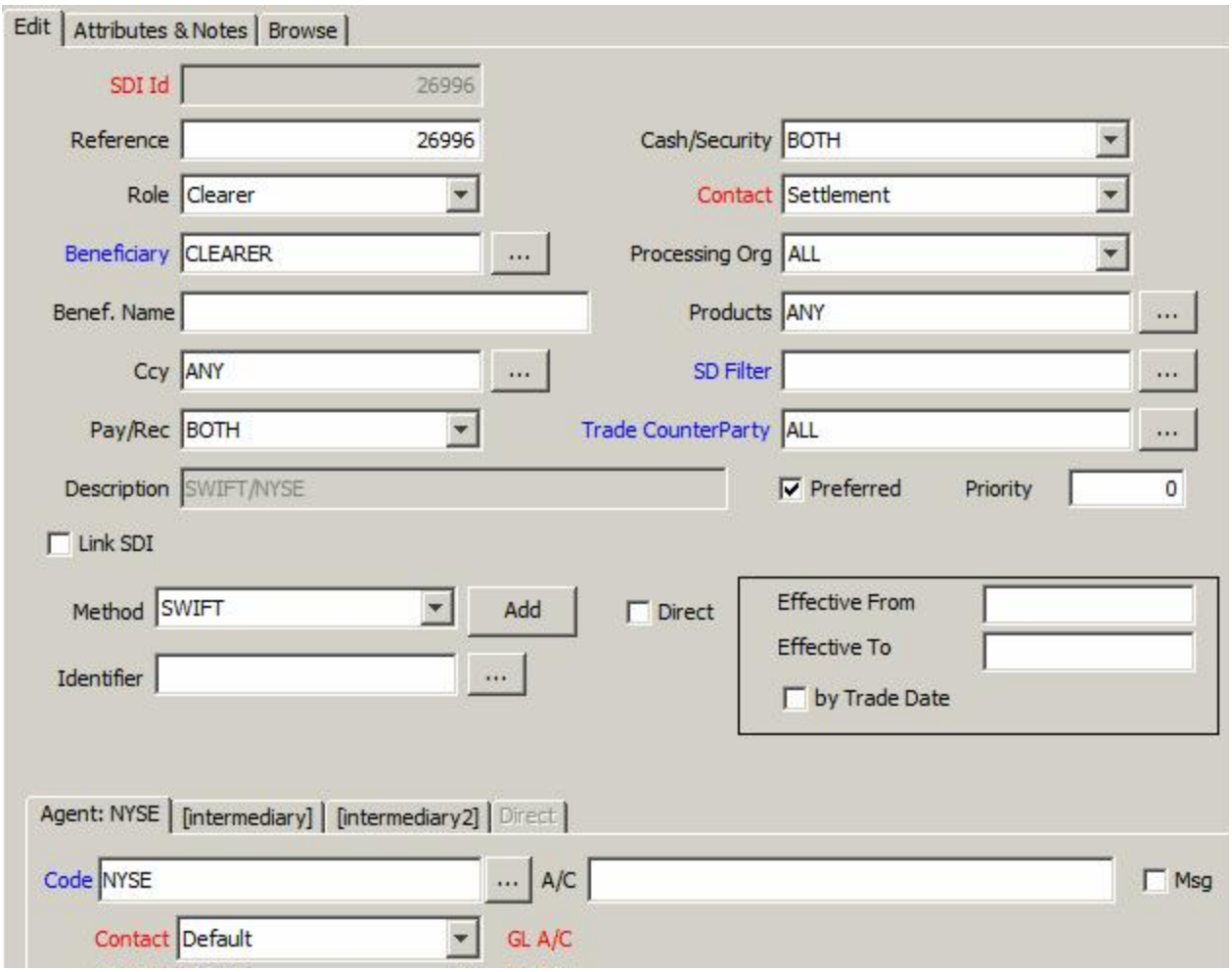
  Account = PO settlement account at Nostro



4.3.2 Clearer

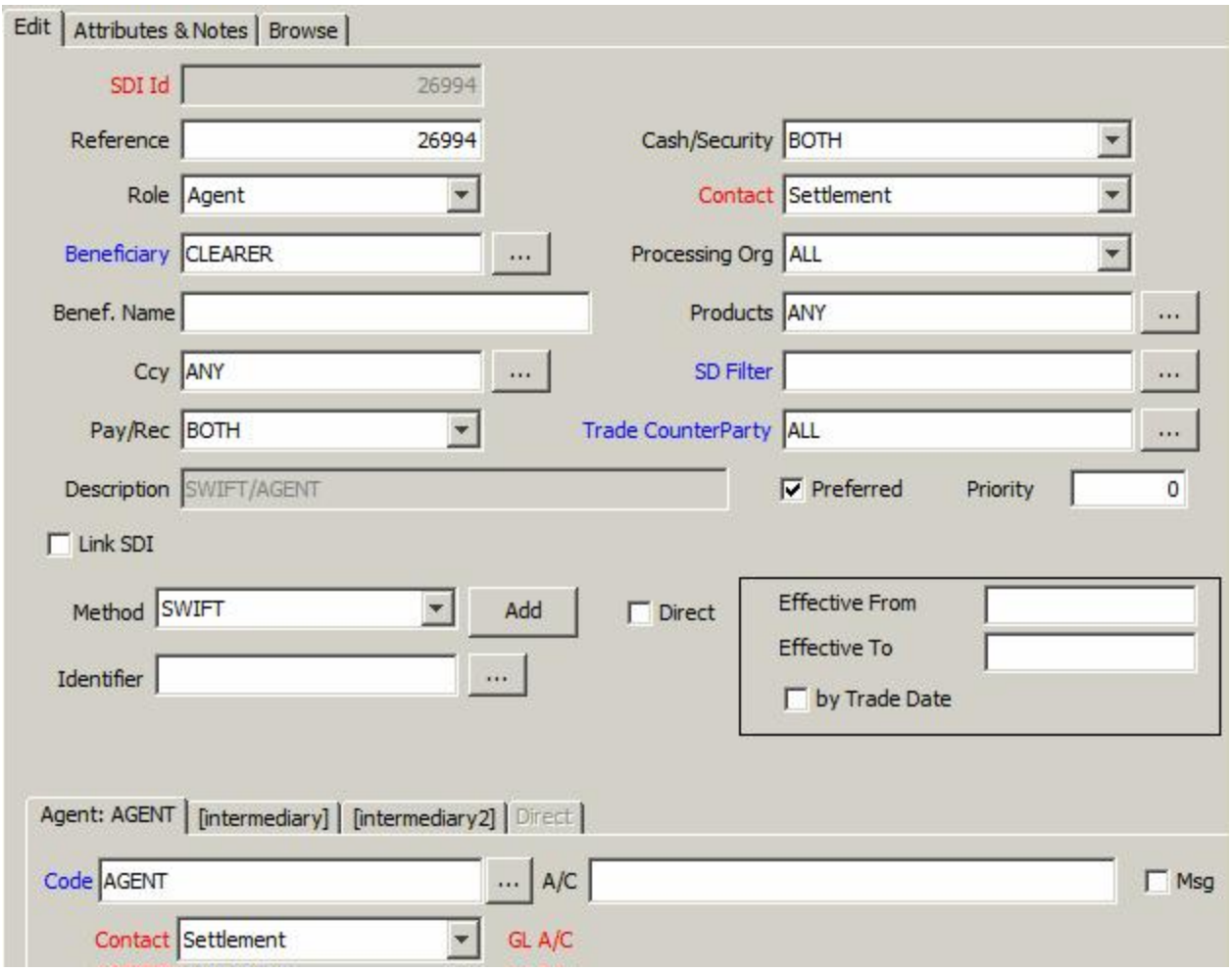
- Beneficiary = Clearer (role Clearer)

  Agent = Market place or Agent (example NYSE)



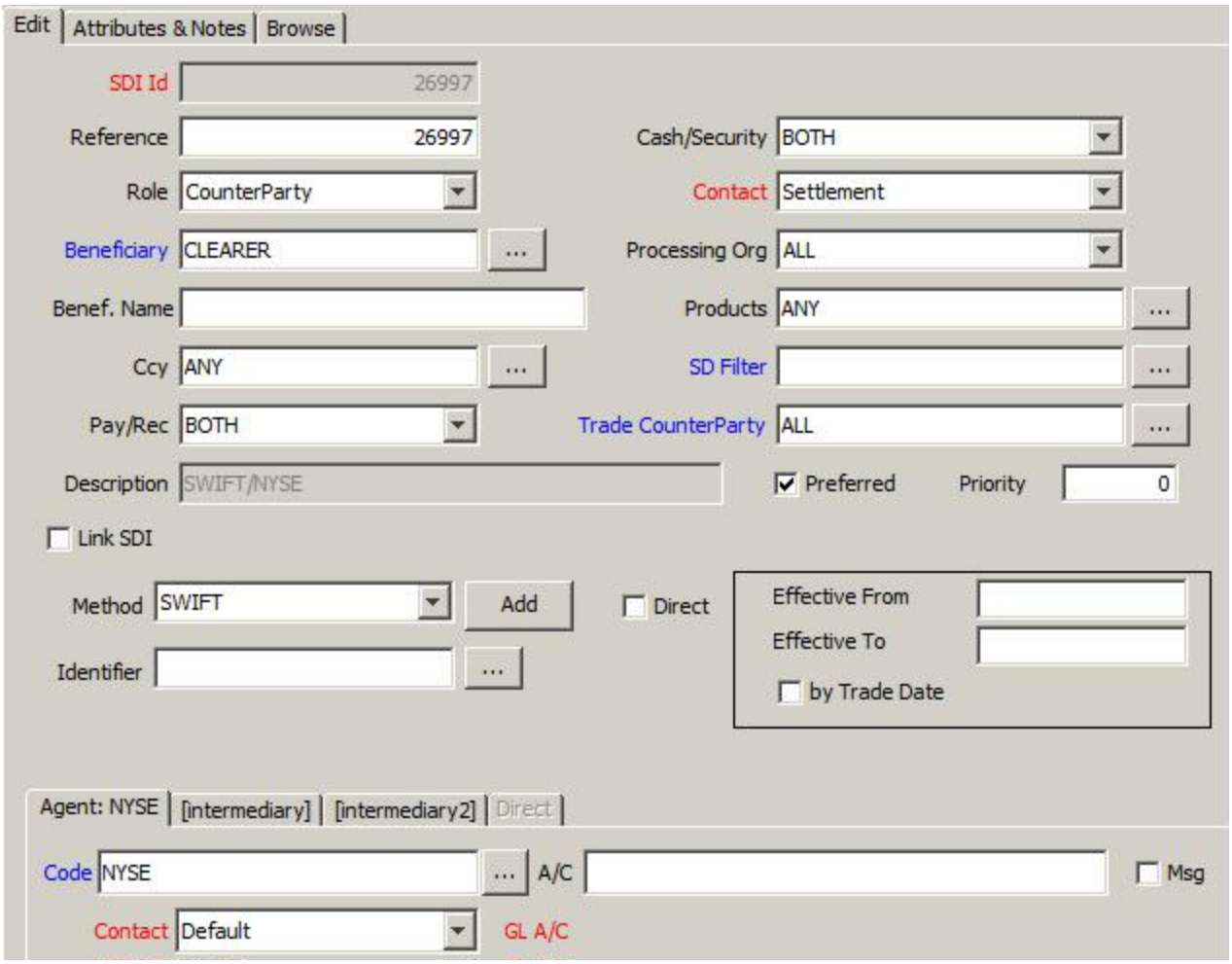
- Beneficiary = Clearer (role Agent)

  Agent = Clearer's agent



- Beneficiary = Clearer (role CounterParty)

  Agent — Market place or Agent (example NYSE)


Edit
Attributes & Notes
Browse
SDI Id
26997
Reference
26997
Cash/Security
BOTH
Role
CounterParty
Contact
Settlement
Beneficiary
CLEARER
Processing Org
ALL
Benef. Name
Products
ANY
Ccy
ANY
SD Filter
Pay/Rec
BOTH
Trade CounterParty
ALL
Description
SWIFT/NYSE
Preferred
Priority
0
Link SDI
Method
SWIFT
Add
Direct
Effective From
Effective To
by Trade Date
Identifier
Agent: NYSE
[intermediary]
[intermediary2]
Direct
Code
NYSE
A/C
Msg
Contact
Default
GL A/C

5. Setting Environment Properties

This section describes environment properties that impact the back office and trading of Futures trades. We recommend that you review these settings.

[NOTE: When you modify an environment property, you need to deploy the changes to your application servers. Please refer to the Calypso Installation Guide for details]

ADVICE_ON_SETTLEDATE

ADVICE_ON_SETTLEDATE determines when the system generates payment advices.

Set this property to Y so the Message Engine creates advices on the settle date.

To create advices *N* days before the settle date, modify the message workflow.

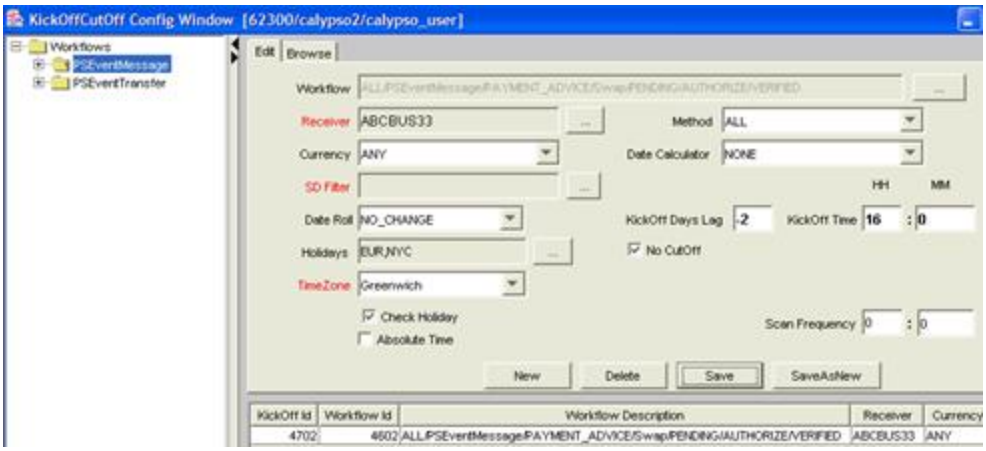
From the Calypso Navigator, navigate to **Configuration > Workflow > Workflow Configuration** to open the WorkFlow Config window.

Step 1 - Select the message workflow for the payment advice.

Step 2 - Modify the PENDING-AUTHORIZE-VERIFIED transition to include the CheckKickOff rule.

Step 3 - Click **Save**.

From the Workflow Config window, choose **Domains > KickOffCutOff Config** to open the KickOffCutOff Config Window.



Step 1 - Set the KickOff Days Lag to -*N* days before the settle date.

In the example above, it was set to -2 days so the system sends the advice two days before the settle date.

Step 2 - Click **Save**.

Set this property to N to create advices as soon as the Message Engine receives events.

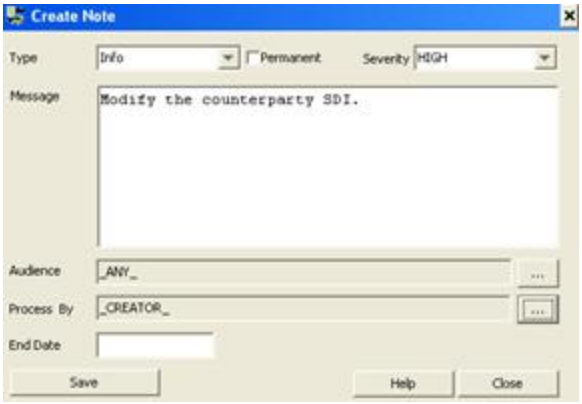
ENABLE_TRADE_NOTES

ENABLE_TRADE_NOTES specifies whether you can attach notes to a trade. When you open an existing trade, the note (s) appear in front of the trade. The back office could use this feature to create notes about the SDI.

Set this property to Y to enable this feature.

Creating Trade Notes

To create trade notes, from the trade worksheet choose **Utilities > Create Note** to open the Create Note window.



Step 1 - Enter the information as applicable.

Step 2 - Click **Save** to save the note. Click **Help** for details.

Viewing Trade Notes

When you open a trade, the trade notes appear in front of the trade worksheet. Trade notes with the highest severity appear first, then the medium severity, and finally the low severity. You cannot access the trade worksheet until you dismiss or close the trade notes.

- Dismiss - Click **Dismiss** if you do not want a note to appear with the trade again. You cannot dismiss a permanent note, and you cannot dismiss a non-permanent note if you do not have permission to dismiss notes.
- Close - Click **Close** to close the note.

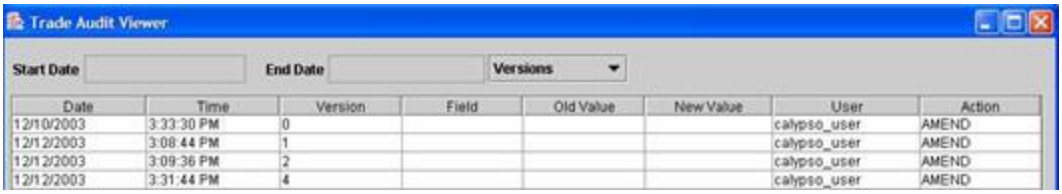
To view trade notes after you have closed them, choose **Utilities > Show Notes**.

TRADE_VERSION_INC

TRADE_VERSION_INC relates to the audit trail of trades, which you can view in the Trade Audit Viewer window; from trade worksheets, choose **Back Office > Audit** to open the window.

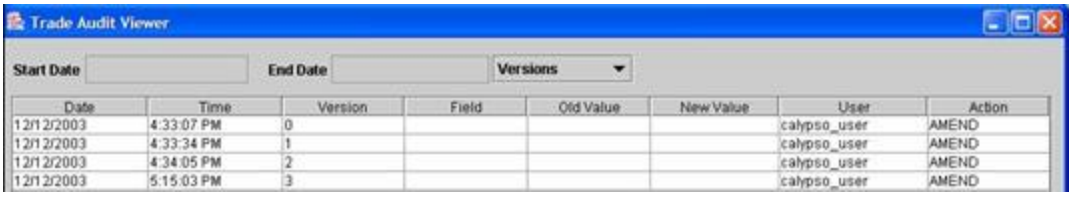
If you set this property to Y (default), and open and save a trade without making any changes, the version number increases. However, the audit trail does not display this version because it is a “non-changed” version.

The following example displays the audit trail for a trade with the property set to Y. We created the trade, amended it three times (versions 0, 1, and 2), opened, saved, and closed it without amending (version 3), and amended it again (version 4). The audit trail does not display version 3 (the “non-changed” version) because we set the property to Y.



If you set the property to N, and open and save a trade without making any changes, the version number does not increase. Therefore, the audit trail does not contain any record.

The following example displays the audit trail for a trade with the property set to N. We created the trade, amended it three times (versions 0, 1, and 2), saved it once without an amendment, and then amended and saved it again (version 3). The “non-amendment” did not result in a “non-changed” version because we set the property to N. Therefore, the audit trail displays all genuine versions of the trade.



USE_PARENT_PO

USE_PARENT_PO specifies that in a parent/child relationship between processing organizations, if the child does not have any workflow setup, then the child can use the parent's workflow. Note that if the child has a workflow for a specific product only, it cannot use the parent's workflow for all products, so you can only trade products setup in the child's workflow.

Set this property to Y to enable this feature.

6. Defining Trading Fees

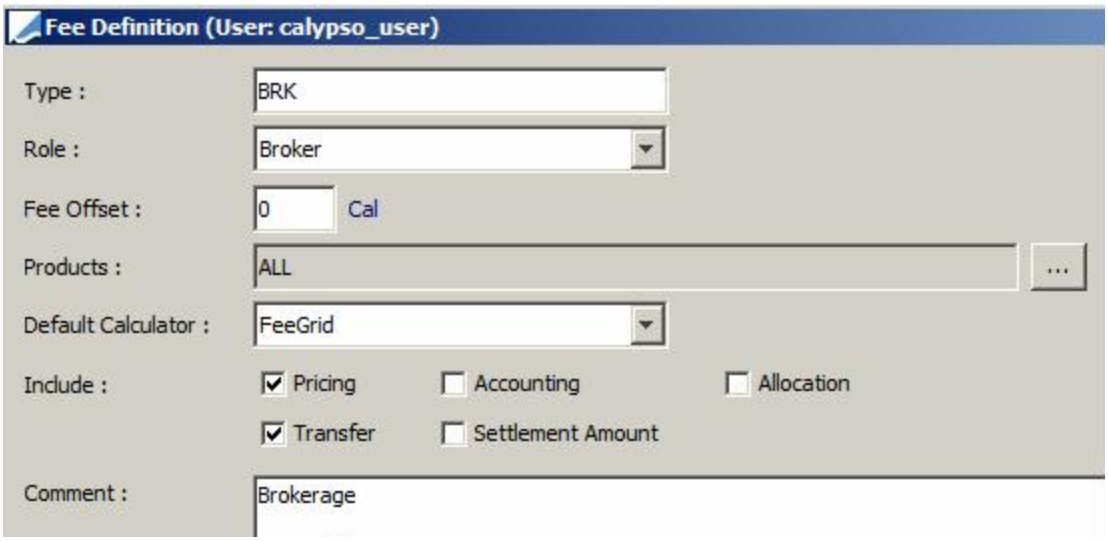
The Fees panel of the Trade windows allows capturing fees for a trade. Fees can be entered manually or can be automatically calculated.

A number of fee types are provided out-of-the-box.

The clearing fee, execution fee and broker fee can be calculated by the system.

6.1 Fee Definition

The fee types must first be registered using **Configuration > Fees, Haircuts, & Margin Calls > Fee Definition** from the Calypso Navigator (menu action `trading.FeeDefinitionWindow`).



Step 1 - For the Clearing fee and Execution fee, enter a fee type – It will identify the fee throughout the system. Select the role Clearer. Check Transfer and Accounting. Set the default calculator to FeeGrid and save.

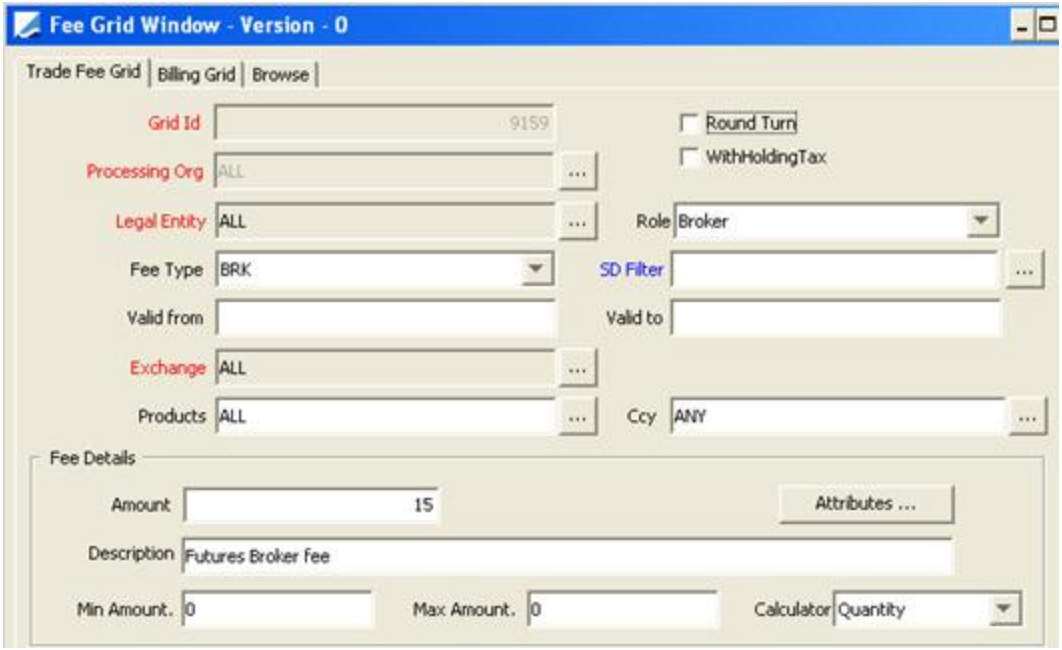
You can also check Price if you want to include the fee in the NPV.

Step 2 - For the broker fee, set the fee type to BRK. Select the role Broker. Check Transfer and Accounting. Set the default calculator to FeeGrid and save.

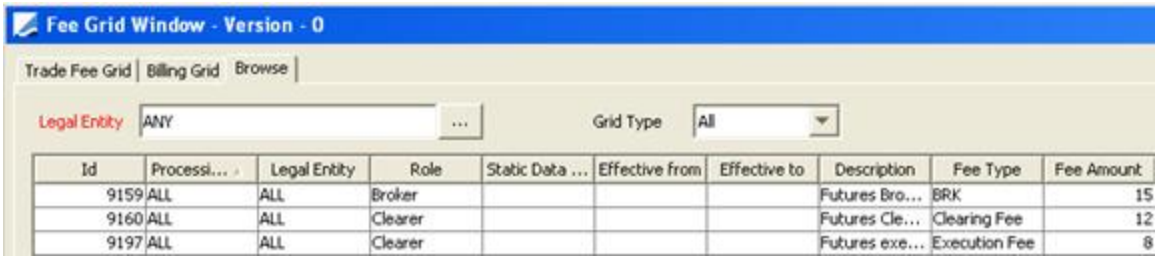
You can click **Help** for complete details on using this window.

6.1.1 Fee Grid

Then you can specify under what conditions the fees should be calculated using **Configuration > Fees, Haircuts, & Margin Calls > Fee Grid** from the Calypso Navigator.(menu action `refdata.FeeGridWindow`) as shown below.



» Configure a fee grid for each fee, and save. Note that the description is mandatory.

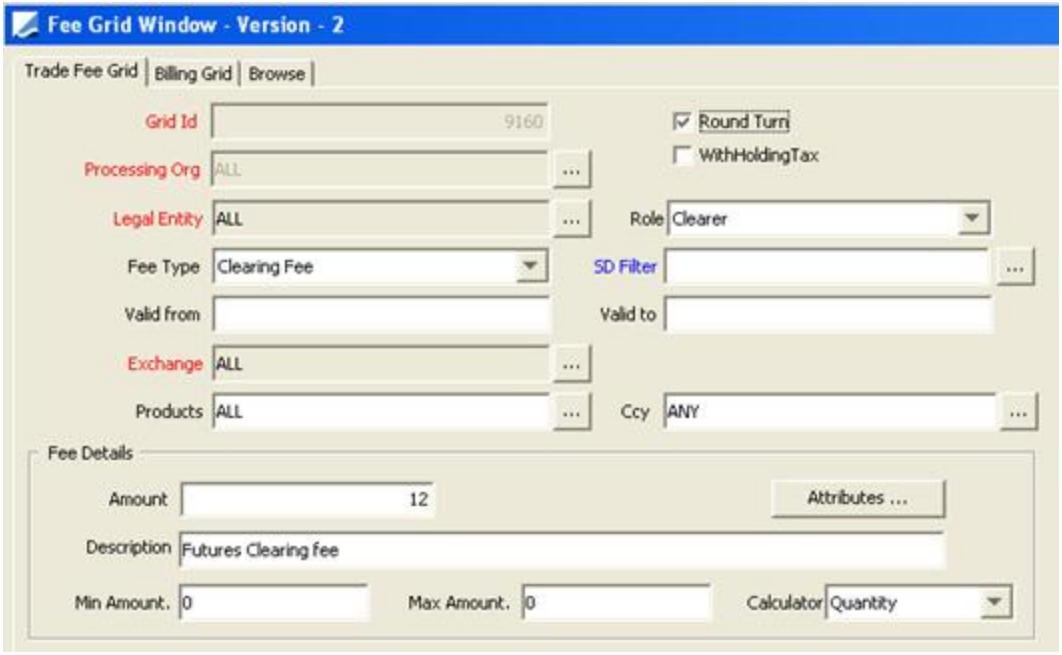


» The fees can be half-turn (computed upon trade capture), or round-turn (computed only when the trades are liquidated, expired, or exercised).

» To compute round-turn fees, check the “Round Turn” checkbox. The fees will be computed using the ROUND_TURN_FEES scheduled task

6.1.2 Sample Round Turn Fees

For example, the Clearing Fee is set as “Round Turn”, and the Execution fee is not.



This Clearing fee is not computed upon trade capture, but the Execution fee is.

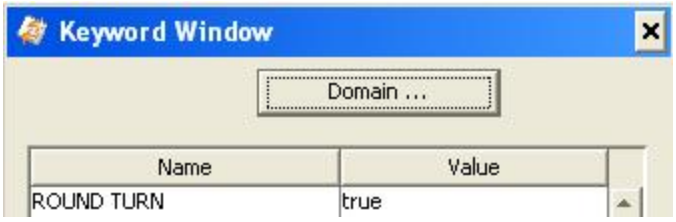
- Sample Buy trade:

Type	Date	Start Date	End Date	Currency	Amount	Legal Entity
Execution Fee	05/16/2008	05/16/2008	05/16/2008	USD	800	Futures Clearer

- Sample Sell Trade

Type	Date	Start Date	End Date	Currency	Amount	Legal Entity
Execution Fee	05/16/2008	05/16/2008	05/16/2008	USD	640	Futures Clearer

The trades are tagged as “Round Turn” through the trade keyword ROUND TURN = True.



[NOTE: You can add the keyword to the domain if it is not visible]

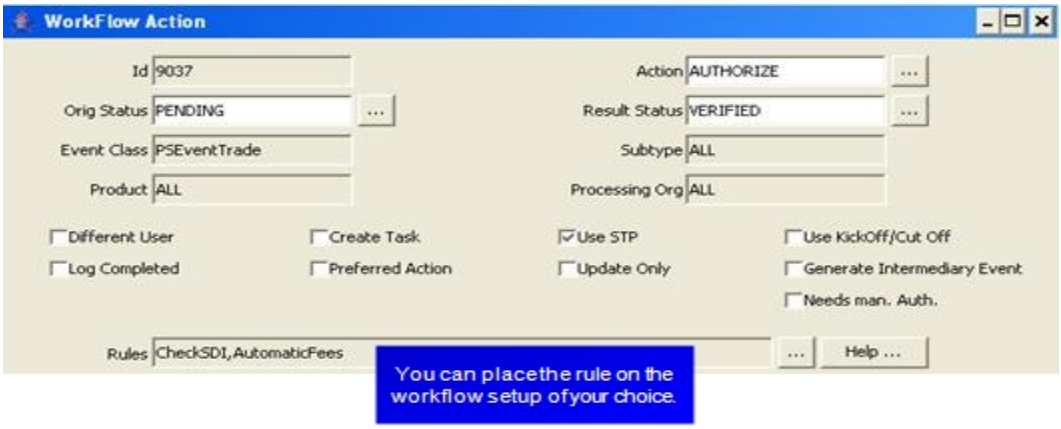
» When you run the ROUND_TURN_FEES scheduled task, liquidation trades tagged as “Round Turn” (sell trades, expiration trades, exercise trades) are amended, and the round turn fee is added, for the liquidated portion.

The Sell trade is amended and the Clearing fee is computed

Type	Date	Start Date	End Date	Currency	Amount	Legal Entity
Clearing Fee	05/16/2008	05/16/2008	05/16/2008	USD	480	Futures Clearer
Execution Fee	05/16/2008	05/16/2008	05/16/2008	USD	640	Futures Clearer

6.2 Workflow Setup

The trade rule AutomaticFees must be placed on the trade workflow using **Configuration > Workflow > Workflow Configuration** from the Calypso Navigator.(menu action `refdata.WorkFlowJFrame`).



7. Defining Future Contracts

A future contract is a collection of future products traded on a given exchange at a given expiry month (for example, the EUROLIBOR 3-month traded on the Chicago Mercantile Exchange defines three future products on JUN09, SEP09, DEC09). The future products can be traded, and used as curve underlying instruments.

Quick Reference

Creating future contracts and products is a two-step process:

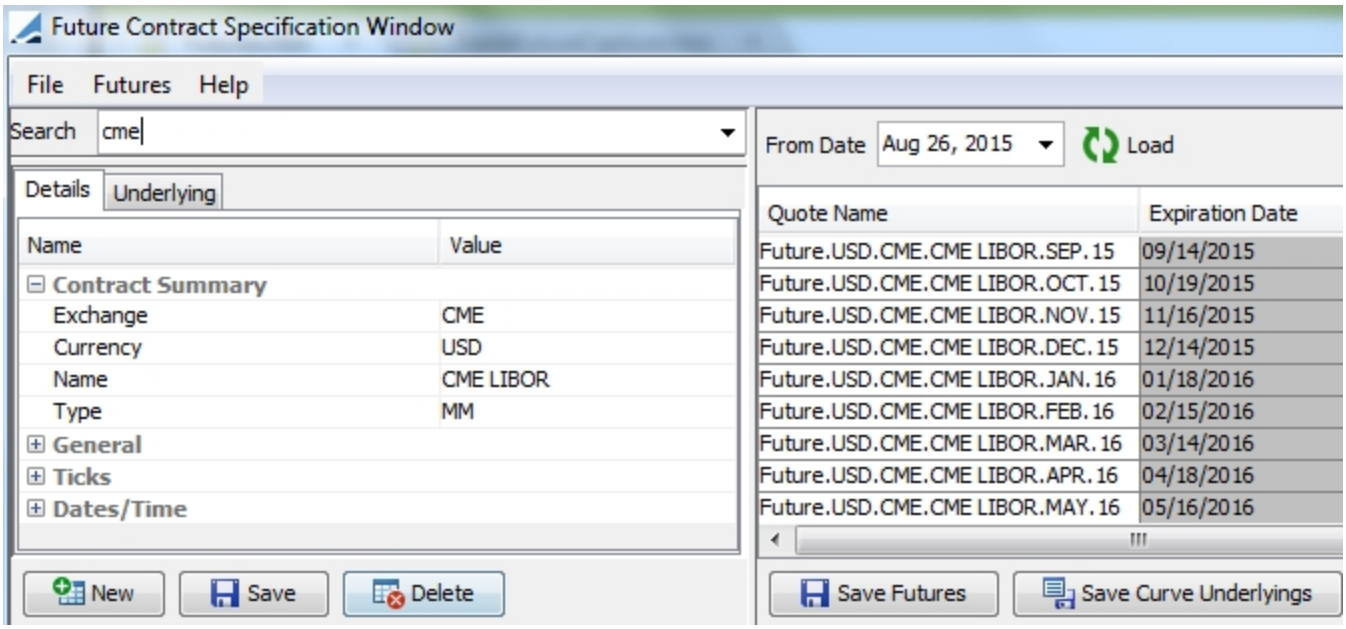
- You first create the contract
- Then you generate and save the actual future products that can be traded

Examples for setting up futures, including those with specific setup requirements.

- ▶ Sample FedFund Future Setup
- ▶ Sample DDI Future Setup
- ▶ CME Deliverable Swap Future
- ▶ ERIS Swap Future
- ▶ EUREX LDX Constant Maturity Swap Future
- ▶ Secured Overnight Financing Rate (SOFR) Futures

7.1 Editing and Creating Future Contracts

From the Calypso Navigator, navigate to **Configuration > Listed Derivatives > Future Contracts** (menu action `refdata.FutureDefinitionWindow`) for creating future contracts.



- To create a new contract, click **New**. Then enter the fields described below: Details and Underlying.
- To load and edit an existing contract, type in a few letters in the Search field. All contracts that contain those letters will appear. You can select a contract from the list. You can then edit the fields described below as needed.
- Click **Save** to save your changes.

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

7.1.1 Details Panel

Select the Details panel to define the details of the contract.

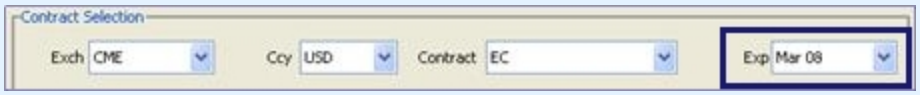
Details - Contract Summary

Fields	Description
Exchange	Select the exchange where the contract is traded. An exchange is a legal entity of role MarketPlace.
Currency	Select the currency in which the contract is traded.
Name	Enter the contract name. Note that a unique contract is defined by its combination of Name, Exchange and Currency, so that you cannot have an MM future contract and a bond future contract with the same name and currency on the same exchange. Australian bond futures on SFE should be named XM or YM, in order to allow the proper computation of the settlement amount.

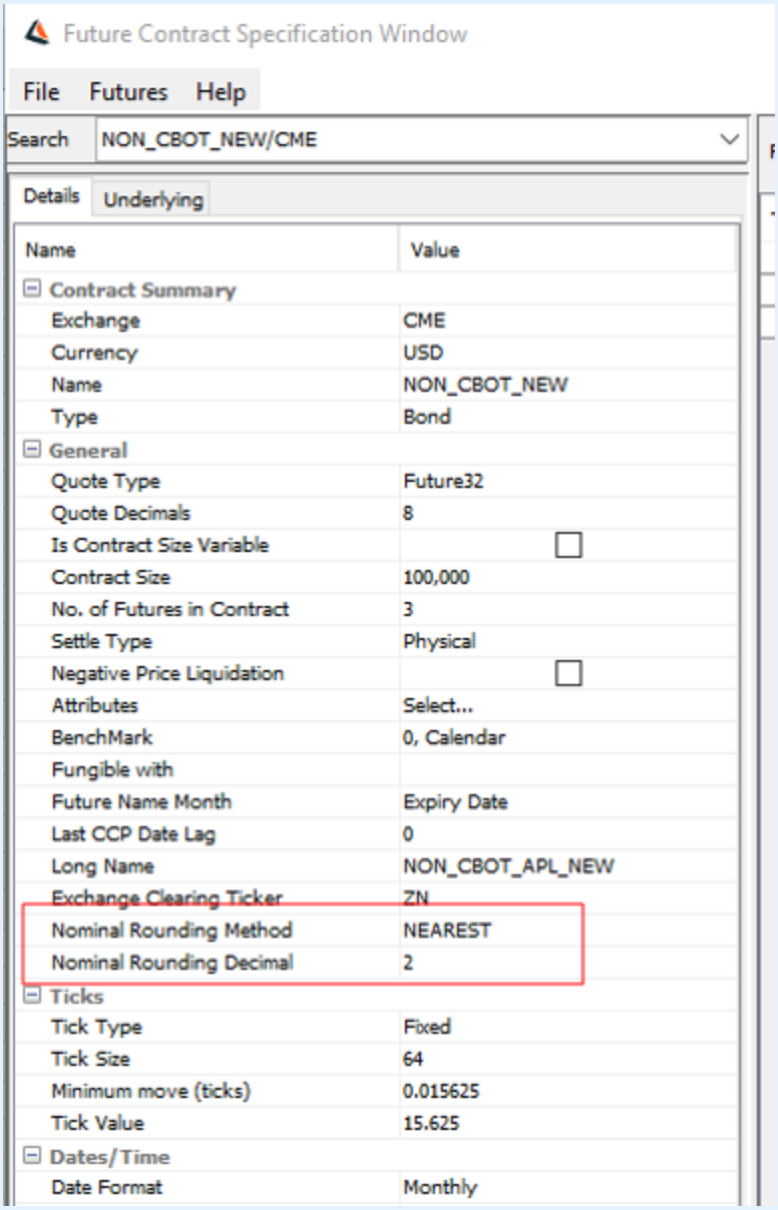
Fields	Description
Type	Select the type of future: BRL, Bond, CDSIndex, Commodity, Dividend, Equity, EquityIndex, FX, MM (Money Market), StructuredFlows (cash legs), Swap, SwapPerpetual, Volatility.

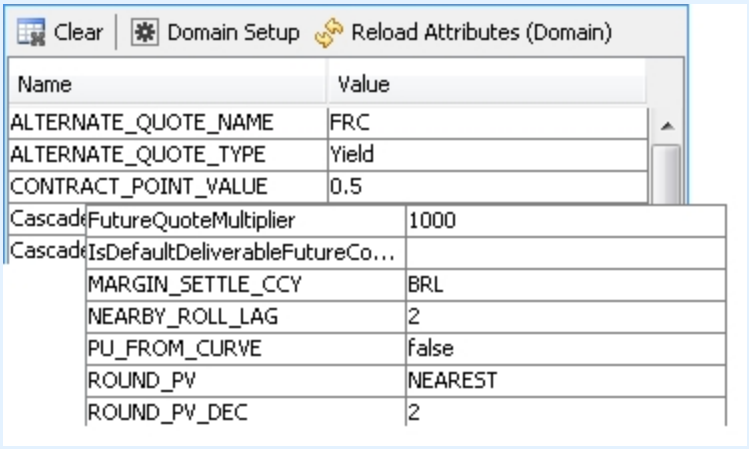
Details - General Fields

Fields	Description
Quote Type	Select the quote type of the future's price. For example, "Yield" for FutureBRL contracts, "Future" defined as "100 - Rate = Price" for FutureMM contracts, and "Price" for FutureBond contracts. For Future32 and Future64, the format is HHH-TTF. • H: whole points. • TT: number of whole 32nds or 64ths of a point • F: fractional values of 32nds or 64ths – For Future32, valid values are 0, 1 (1/8), 2 (1/4), 3 (3/8), 5 (1/2), 6 (5/8), 7 (3/4), 8 (7/8). – For Future64, valid values are 0, 2 (1/4), 5 (1/2), 7 (3/4).
Quote Decimals	Define the decimal precision at the contract level. The system uses this decimal precision in the Price field in the trade window and in quote rounding when calculating the NPV.
Is Contract Size Variable	Check if the contract size is variable. This applies to Equity index futures. The contract size is equal to index price * tick size * tick value. The equity index product is selected in the Underlying panel, and the contract size is calculated when the future is actually traded. This also applies to Electricity Futures. ▶ Please refer to Calypso Commodities documentation for details.
Contract Size	Only applies when "Is Contract Size Variable" is not checked. Enter the face value of the underlying product represented by one future.
No. of Futures in Contract	Enter the total number of future products traded in the contract. For example, for the CME Eurodollar contract there are five years worth of tradable expiry months, for a total of twenty tradable futures.
Settle Type	Select the settlement type of the underlying product: Cash or Physical. For Gold FX Futures, you can also select "Spot Deferred" to identify a future contract that prices Gold for spot delivery but the delivery is deferred each day with no last trading date. These contracts do not expire.
Negative Price Liquidation	Check to allow entering negative prices for trade capture and quotes.
Attributes	Optional.

Fields	Description
	Click **Select...** and then the down arrow to the right to add attributes to the contract definition. ***Out-of-the-box Attributes*** • CommodityReset - Select the commodity reset for commodity futures. • DateFormat - You can set the attribute DateFormat to 'MMM yy' to display the contract in this format in the Future trade worksheet. The value is case sensitive.  Other available formats: – "dd MMM yy" for 10 Mar 08 for example – "dd MM yyyy" for 10 03 2008 for example – "dd.MM.yyyy" for 10.03.2008 for example More examples can be found at http://download.oracle.com/javase/6/docs/api/java/text/SimpleDateFormat.html **[NOTE: For the nominal calculator SFEFutureNominalCalculator, the DateFormat attribute must be set to "MMM yy"]** • FutureRoundingMethod - You can set the attribute FutureRoundingMethod to NEAREST, UP, or DOWN. It will be applied to round (Trade Price * Tick Size * Tick Value) when computing the premium. • IsDefaultDeliverableFutureContract - You can set the attribute IsDefaultDeliverableFutureContract to Yes for Commodity Storage-Based or Vintage-Based products. This contract will be used as the default contract for delivery if a future delivery set is not defined for the product. • IsDiscountedVM - This is used in the context of ETD clearing. – If "IsDiscountedVM=true" and the booking date is before the expiration date of the future, the status of the trade open quantity is set to "forward", and the trade is only liquidated when the booking date becomes equal to the expiration date. – If "IsDiscountedVM=false", the trade can be liquidated even if the booking date is before the expiration date. • QuotePriceInContractSizeTerms - When true, the price_from_curve is multiplied by the contract size, to return the price on the same terms as price_from_quote. It is not multiplied by the contract size otherwise. Default is false. • SettlementCurrency - When set, the Principal transfer is converted to the specified SettlementCurrency.

Fields	Description
	Fields Specific to Non-CBOT exchanges The below 2 fields are used to implement the rounding for all exchanges other than CBOT. • Nominal Rounding Method - The nominal rounding method is a drop down. Rounding by default will be NEAREST. • Nominal Rounding Decimal - This is rounded upto 2 places. The rounding is done as follows for non-CBOT exchanges: SA/PV = ROUND_Curr(ROUND_ContractDef(Price * Tick Size * Tick Value ,2)* Quantity ,2) Here the ROUND_Curr is the currency default rounding, while the ROUND_ContractDef is the rounding being applied at the contract level.

Fields	Description
	 ***Attributes Specific to BRL Futures***

Fields	Description
	 • FutureQuoteMultiplier: This allows conversion of quotes in different locale formats by using the multiplier entered in the field, which produces a result that can be interpreted by the curve window. For example, if the USD/BRL FX Future has a strike of 3.62 but the quote is expressed as 3,6200.00, setting the attribute to 1000 matches the quote with the contract and allows for curve generation. • ALTERNATE_QUOTE_NAME - Used in conjunction with ALTERNATE_QUOTE_TYPE for creating curve underlyings for the DI curve. • ALTERNATE_QUOTE_TYPE - Used in conjunction with ALTERNATE_QUOTE_NAME for creating curve underlyings for the DI curve. • MARGIN_SETTLE_CCY - Used in conjunction with CONTRACT_POINT_VALUE to convert settlement measures into BRL currency. Enter the currency code. • CONTRACT_POINT_VALUE - Used in conjunction with MARGIN_SETTLE_CCY to convert settlement measures into BRL currency. Enter a numerical value for points. • PU_FROM_CURVE - Used in pricing. If true, it will use the curve to price. If false, it will use quotes to price. • NEARBY_ROLL_LAG - Used for setting the number of days when the future contract should be rolled. • You can set the rounding method and number of decimals to round the pricer measures computed on Future trades in the attributes: – ROUND_PV – ROUND_PV_DEC • IS_NEXT_DAY_CASH_SETTLE - Set to Yes to drive Brazilian P&L calculations.
BenchMark	For bond futures that are used as benchmarks to price bonds, you can specify the number of days before the last trading day, within which, if the pricing occurs, the future contract will be rolled to the next one. This is only for pricing purposes. As the future approaches expiry,

Fields	Description
	the liquidity shifts to the next contract. Enter the number of days before the last trading day, and select business days or calendar days.
Fungible with	Select a contract that can be liquidated with the current contract, if any.
Future Name Month	By default, futures are displayed as Contract Name/Contract Date, example “CME LIBOR/07/18/2016”, where the contract date can be one of the following: • First Delivery Date • Last Delivery Date • Last Trading Date • Expiry Date • Prompt Month - You need to select a manual date schedule for the expiration date schedule and enter the reference date in the Comments of the manual schedule in the form yyyyMM or yyyyMMDD. In the case where the Comments is monthly only, the date will default to the first calendar day of the month. This will populate the product code "Prompt Month" on the future option products. You can also choose the following logic using the domain “ProcessingConfig”: Value = LegacyProductDesc, Comment = false Futures are displayed as Contract Name/Contract Date, where the Contract Date is displayed as MMMyy for “Monthly” date format or DDMMMyy for “Daily” date format. Example: “CME LIBOR/JUL16” for “Monthly” or “CME LIBOR/18JUL16” for “Daily”.
Last CCP Date Lag	Number of business days between the expiration date and the last CCP date. When the future products are generated the Last CCP Date is computed accordingly. This date represents the last date on which the CCP (the exchange clearinghouse) has any risk to the default of a member carrying a position in that future.
Long Name	Contract long name.
Exchange Clearing Ticker	For ETD Clearing - Market standard contract symbol used by the exchange and trade interface.
Nominal Rounding Method	The nominal rounding method is a drop down. Rounding by default will be nearest.
Nominal Rounding Decimal	This is rounded upto 2 places.

Details - Ticks

Fields	Description
Tick Type	Select the tick type: Fixed or Variable.

Fields	Description
	If the tick type is variable, you need to specify the nominal calculator to compute the contract size. See below.
Nominal Calculator	Only applies to variable ticks. Specify the nominal calculator that allows computing the contract size. Out of the box, the following calculators are available: • NZD / AUD futures - The nominal calculator should be set to "SFEFutureNominalCalculator." • DDI Futures - The nominal calculator should be set to "BRLNominalCalculator." • NOMX Nordic Bond Futures (NOMX Bond and NOMX MM futures, which use Yield as the quote type and have a different settle calculation than standard bond futures) - The nominal calculator should be set to "NOMXFutureNominalCalculator." Otherwise, you need to implement a custom calculator for computing the contract size. To implement a custom calculator, create a class named `tk.util.<calculator name>` that implements `tk.product.util.FutureNominalCalculator`.
Minimum move (ticks)	Enter the minimum allowable price fluctuation for the contract, as defined by the exchange, in decimal format.
Tick Value	Only applies to fixed ticks. Enter the change in value of one contract, given a change in the contract's price equal to the Minimum Move (one tick). Tick Value = Contract Size / Tick Size
Tick Size	The Tick Size is the denominator of the fractional representation of the Minimum Move. For instance, a minimum move of 0.01, or 1/100, gives a Tick Size of 100. You can add tick size values to the dropdown menu through the domain "tickSize".

Details - Dates/Time

Fields	Description
Date Format	Select the date format for the quote names of the future products: • Daily - The quote name contains the day, month and year. • Monthly - The quote name contains the month and year. • Underlying Maturity Tenor - applies to the future type SwapPerpetual. Used for LDX Constant Maturity Swap Futures, which do not have an expiry date.
Last Trading Time	Enter the time of day that trading will end on the last trading day. Use twenty-four hour time notation (for example 16:30 is four-thirty in the afternoon).
Time Zone	Select the time zone of the trading time.

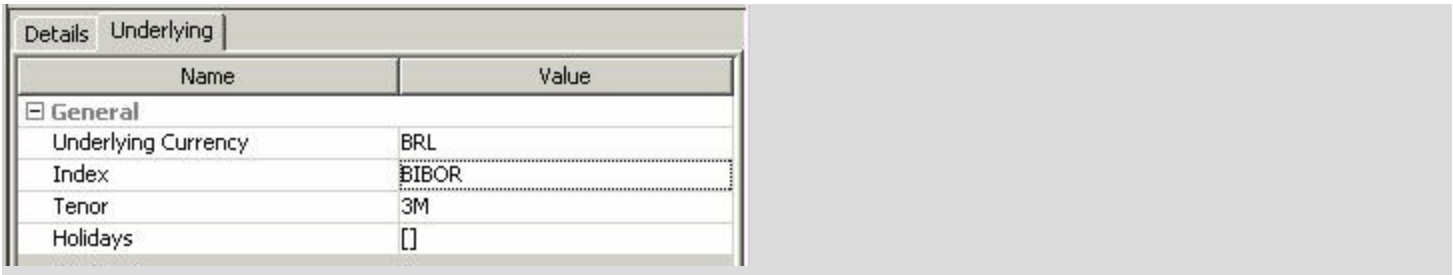
Fields	Description
Expiration Date Schedule Last Trade Date Schedule First Delivery Date Schedule Last Delivery Date Schedule First Notification Date Schedule Last notification Date Schedule	Type in a few letters (at least 2) in a date schedule field. All date schedules that contain those letters will appear. You can select a date schedule from the list. A date schedule can be a date rule or a manual date schedule. Date rules are created using **Configuration > Definitions > Date Schedule Definitions > Date Rule** from the Calypso Navigator - Help is available from that window. Manual date schedules are created using **Configuration > Definitions > Date Schedule Definitions > Manual Date Schedule** from the Calypso Navigator - Help is available from that window.
First Delivery Use Prev Date Last Delivery Use Prev Date	You can check these boxes so that the delivery date is before the last trading date. It is the next expiry date otherwise. For example, if the expiry date has a date rule "15th of every month" and the first delivery has a date rule "1st of every month". • If "First Delivery Use Prev Date" is checked, the December future will have "expiry date=Dec 15th" and "first delivery date=Dec 1st". • If "First Delivery Use Prev Date" is not checked, the December future will have "expiry date=Dec 15th" and "first delivery date=Jan 1st".

7.1.2 Underlying Panel

Select the Underlying panel to select the underlying product of the contract.

The selection criteria depend on the type of contract.

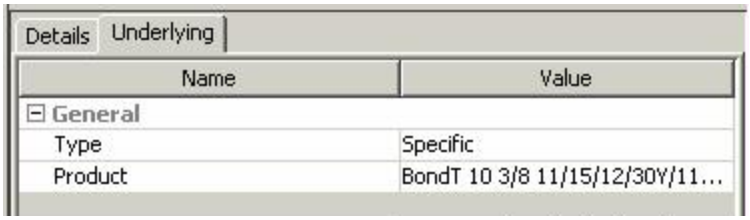
Underlying - BRL



» Select an underlying currency, a reference index, a tenor, and holiday calendars as needed.

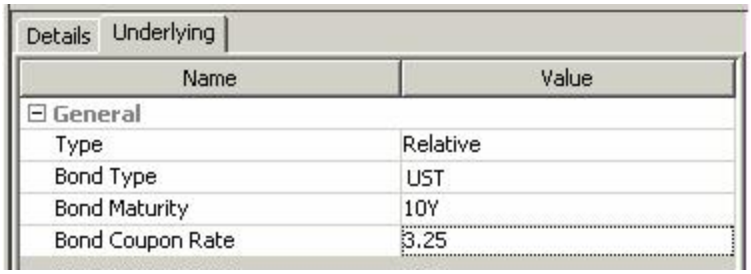
Underlying - Bond

You can select type "Specific" to select a specific Bond product. Bond products are created using **Configuration > Fixed Income > Bond Product Definition** from the Calypso Navigator.



» Select a Bond product.

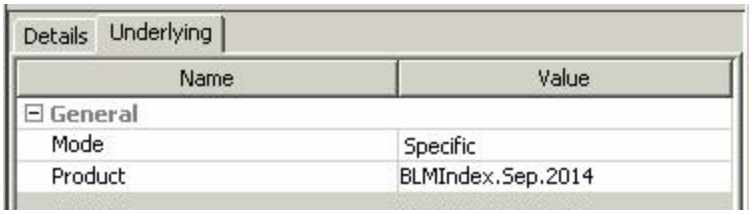
You can also select type "Relative" to define a generic bond.



» Select a bond type, a maturity, and enter a coupon rate to define the generic bond.

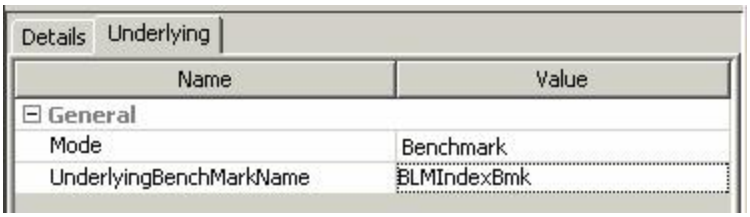
Underlying - CDS Index

You can select type "Specific" to select a specific CDS Index product. CDS Indices are created using **Configuration > Credit Derivatives > CDS Index Definition** from the Calypso Navigator.



» Select a CDS Index Definition.

You can also select type "Benchmark" to select a benchmark over a CDS index. CDS Index benchmarks are created using **Configuration > Fixed Income > Benchmarks** from the Calypso Navigator. After the last trading day, the future contract will be rolled to the next one.



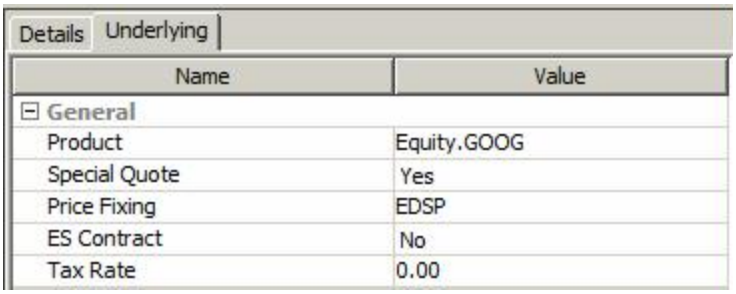
» Select a CDS Index Benchmark.

Underlying - Commodity

» Select a Commodity product. Commodity products are created using **Configuration > Commodities > Commodities** from the Calypso Navigator.

Depending on the type of product, additional parameters will be requested: price fixing, commodity reset, physical delivery reset, default delivery contract, etc. Sample Commodity Futures are shown in the Calypso Commodities documentation.

Underlying - Dividend, Dividend Index



» Select an Equity or Equity Index product.

Equities are created using **Configuration > Equity > Stock** from the Calypso Navigator.

Equity Indices are created using **Configuration > Equity > Equity Indices** from the Calypso Navigator.

» You can set "Special Quote = Yes" to allow creating special quote names - You need to select the fixing type in that case - Upon saving the products, the system will save the standard quote name, and "<standard quote name>.<fixing type>" - The special quote is used on expiration date.

The following fixing types are supported in addition to CLOSE, OPEN, HIGH, LOW, and LAST:

- Future Price Reference (EDSP) - This is a special quote typically known at the Open of the market trading. EDSP is published by a future or option exchange.
- Volume Weighted Average (VWAP) - The average price of the day is popular as a fixing because many exchanges and brokers allow clients to Buy or Sell shares at the VWAP. Therefore, Fixing at the VWAP facilitates the orderly removal of hedge transactions.
- Prezzo di Riferimento (PDR) - A special Italian Exchange-published level that is used to settle exchange and OTC derivatives.

Set "Special Quote = No" otherwise.

» You can set "ES Contract = Yes" to identify an ES contract (contract with specific rules for settlement).

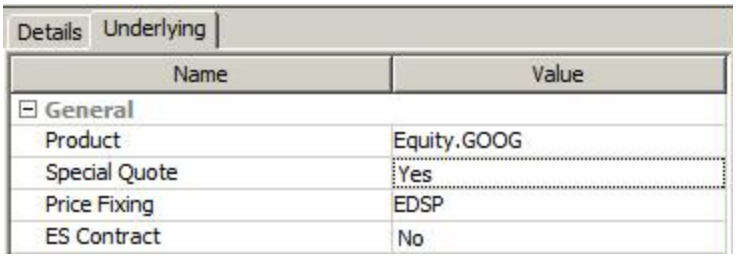
You can set the number of days between the last trading date and the payment date in "SpotDaysES".

This applies to SGX to cover contracts that allow the settlement date to be any date between trade and last trading date + SpotDaysES.

Set "ES Contract = No" otherwise. Settlement date = trade date + spot days defined in the Exchange attributes.

» Enter a tax rate as needed.

Underlying - Equity, Equity Index, Volatility



» Select an Equity or Equity Index product.

Equities are created using **Configuration > Equity > Stock** from the Calypso Navigator.

Equity Indices are created using **Configuration > Equity > Equity Indices** from the Calypso Navigator.

» You can set "Special Quote = Yes" to allow creating special quote names - You need to select the fixing type in that case - Upon saving the products, the system will save the standard quote name, and "<standard quote name>.<fixing type>" - The special quote is used on expiration date.

The following fixing types are supported in addition to CLOSE, OPEN, HIGH, LOW, and LAST:

- Future Price Reference (EDSP) - This is a special quote typically known at the Open of the market trading. EDSP is published by a future or option exchange.
- Volume Weighted Average (VWAP) - The average price of the day is popular as a fixing because many exchanges and brokers allow clients to Buy or Sell shares at the VWAP. Therefore, Fixing at the VWAP facilitates the orderly removal of hedge transactions.
- Prezzo di Riferimento (PDR) - A special Italian Exchange-published level that is used to settle exchange and OTC derivatives.

Set "Special Quote = No" otherwise.

» You can set "ES Contract = Yes" to identify an ES contract (contract with specific rules for settlement).

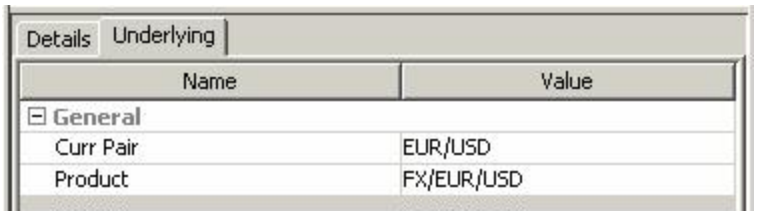
You can set the number of days between the last trading date and the payment date in "SpotDaysES".

This applies to SGX to cover contracts that allow the settlement date to be any date between trade and last trading date + SpotDaysES.

Set "ES Contract = No" otherwise. Settlement date = trade date + spot days defined in the Exchange attributes.

» For Volatility, you can also select a daycount.

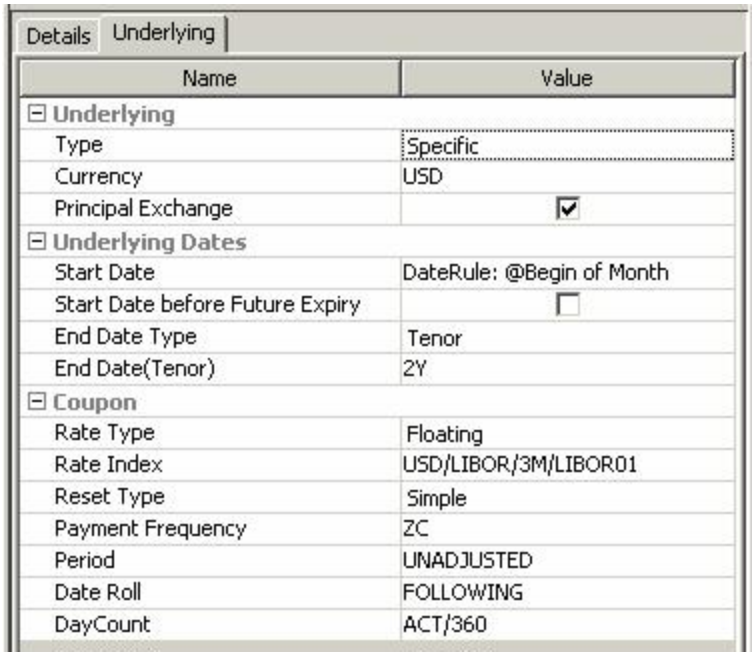
Underlying - FX



» Select a currency pair. Currency pairs are created using **Configuration > Definitions > Currency Definition** from the Calypso Navigator.

Underlying - Money Market (MM)

You can select type "Specific" to define a MM product on-the-fly.



» Select a currency and whether there is principal exchange or not.

- Select the underlying start date: it can be a date rule or a manual date schedule.

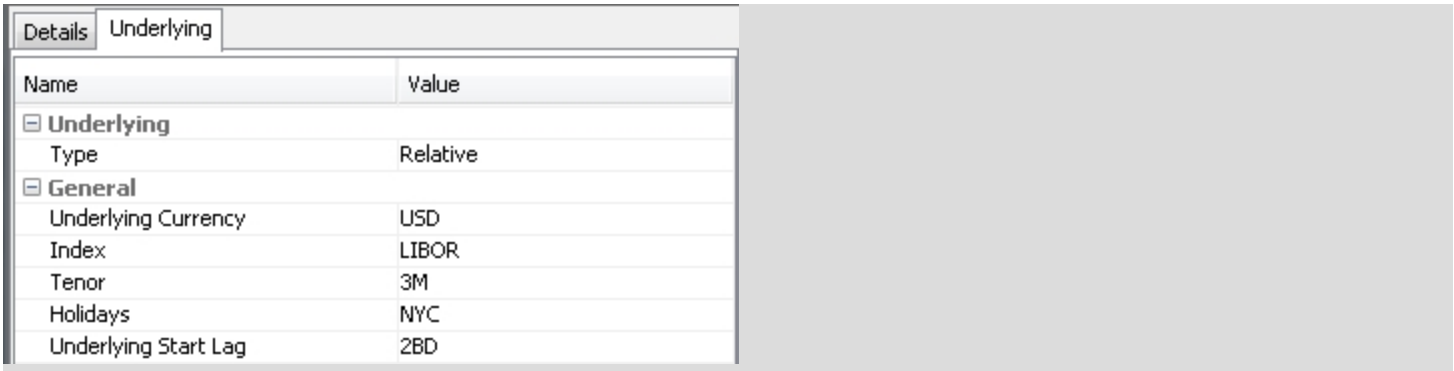
  You can check "Start Date before Future Expiry" to handle lookback contracts. If checked, the start date to be picked up from the date schedule is the date preceding the future expiry date. If not checked, the start date will be equal to or greater than the future expiry date.

  It should be checked for FedFunds, OIS and EONIA.
- Select the end date type: it can be a tenor or a date schedule.

  For a tenor, select a tenor.

  For a date schedule, you can select a date rule or manual date schedule.
- Select whether the coupon is fixed or floating, and the corresponding parameters.

You can also select type "Relative" to select a rate index.



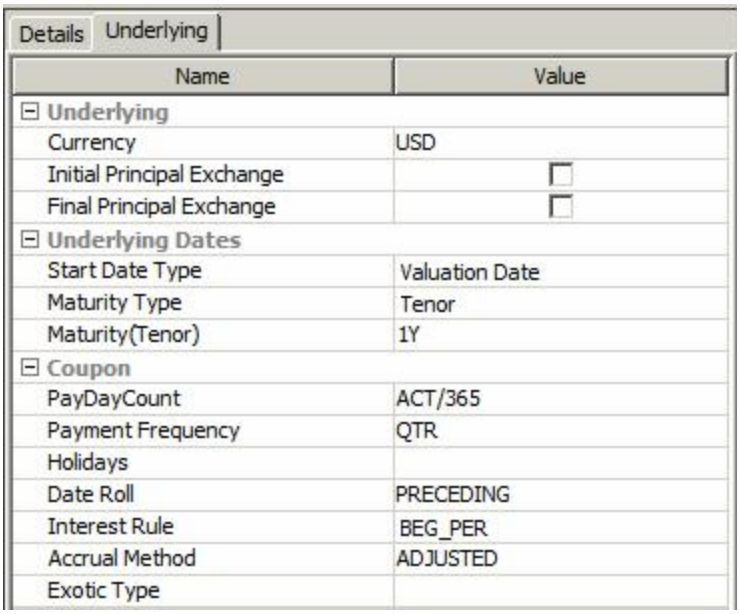
- Select an underlying currency, a reference index, a tenor, holiday calendars, and an underlying start lag.

  For Australian MM futures on SFE with IR/BB commodity codes, the 3M tenor can act as 90D tenor. On the Rate Index, set the attribute "USE_ACT_365_CONVENTION" to true to have the 90D behavior on cashflow forward end date, the date roll convention to NO_CHANGE, and the daycount to ACT/365.

Underlying - StructuredFlows

Structured flows are exotic legs - This can be used for defining Brazilian DDI futures.

▶ See Sample DDI Future Setup for details.



- Select a currency and whether there is principal exchange or not.
- Select the underlying start date: it can be a date or a date schedule.

  For a date schedule, you can select a date rule or a manual date schedule.

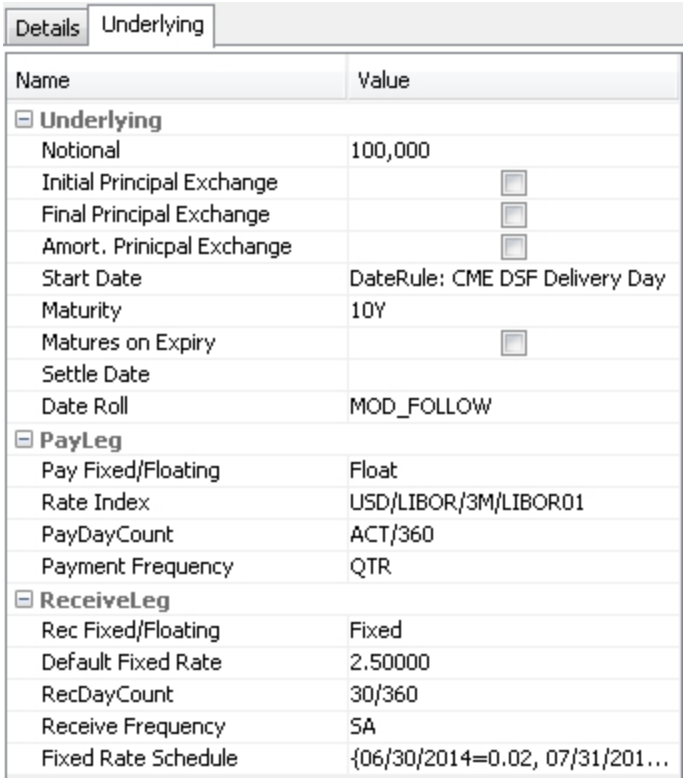
  You can check "Start Date before Future Expiry" to handle lookback contracts. If checked, the start date to be picked up from the date schedule is the date preceding the future expiry date. If not checked, the start date will be equal to or greater than the future expiry date.

  It should be checked for overnight rate indices.
- Select the end date type: it can be a tenor or a date schedule.

  For a tenor, select a tenor.

  For a date schedule, you can select a date rule or a manual date schedule.
- Select the payment parameters.
- Select the exotic type - Exotic types are created using **Configuration > Product > Exotic Type Creator** from the Calypso Navigator.

Underlying - Swap

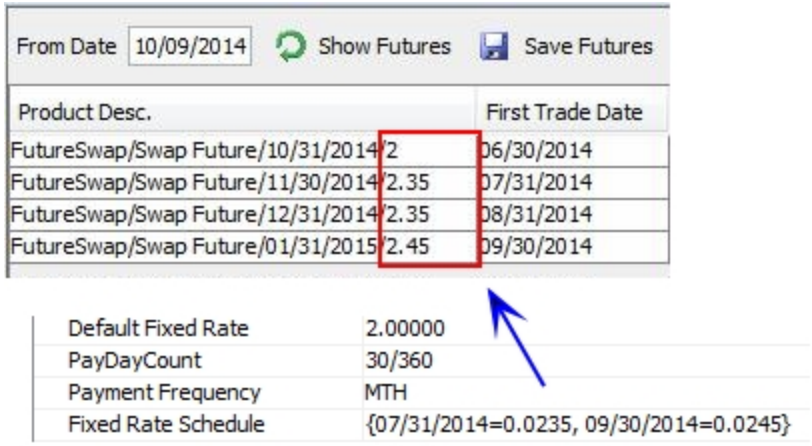


[NOTE: The Swap Underlying settings panel above is also applicable when future contract Type = SwapPerpetual.]

- Enter the notional and select the start date: it can be a date rule or a manual date schedule.
- Qualify each leg of the swap: fixed or floating and corresponding parameters.

  For a fixed leg, you can define a fixed rate schedule. The dates should correspond to the First Trade Dates. If the rate is not defined for a given date, the previous defined rate is used if any. The default fixed rate is used otherwise.

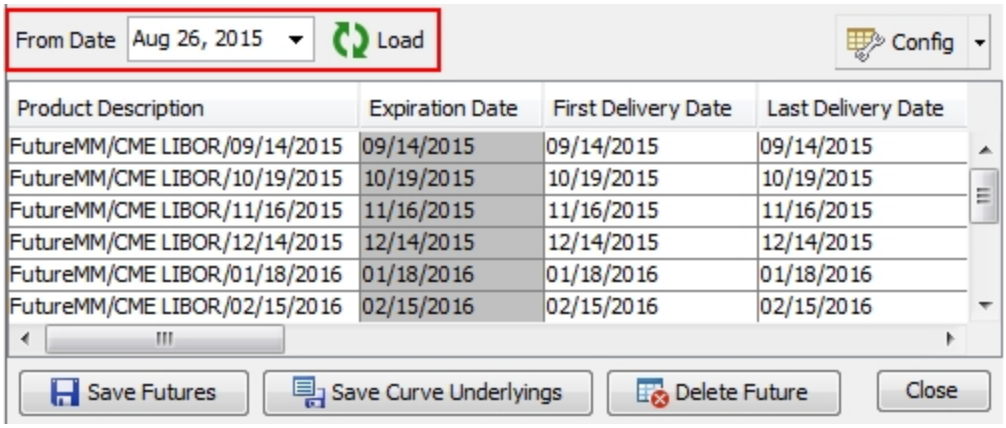
  You can see the rate in the product description of the generated futures.



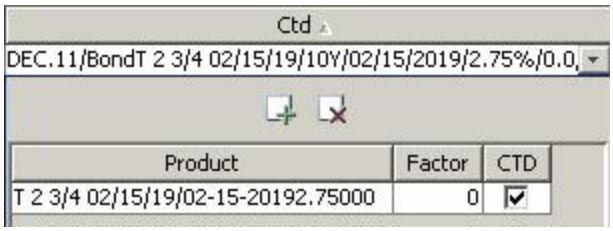
- For ERIS Swap Futures, which mature on the Expiry Date, select the “Matures on Expiry” checkbox.
- For LDX Constant Maturity Swap Futures, only the Maturity tenor is needed – the Start Date rule can be left blank. The Default Fixed Rate property is ignored.

7.2 Generating Future Products

Load a contract from the Search field. Then select a start date and click **Load** on the right-hand side.



- For Bond Futures, you need to select the cheapest-to-deliver bond from the "Ctd" column - This is needed regardless of the type of settlement method - It is used to compute PV01 for bond futures as CTD PV01 / CTD factor when FUTURE_FROM_QUOTE=false.



  - Click  to select a deliverable bond. You can add multiple bonds as needed.
  - Check CTD for the cheapest-to-deliver.
  - You can enter a factor as applicable. This is the conversion factor between the bond future and the deliverable bond.

» The product code Prompt Month is populated by the Comments of the manual expiration schedule if Future Option Name Month = "Prompt Month".

» Click **Save Futures** to save the actual future products that can be traded.

» For certain types of contracts, you can click **Save Curve Underlyings** to save underlying futures that can be used in curve construction.

» You can select **Config > Open Column Configurator** to configure the layout. Then you can select **Config > Save Current Column Config** to save the layout, otherwise it will be lost upon closing the window.

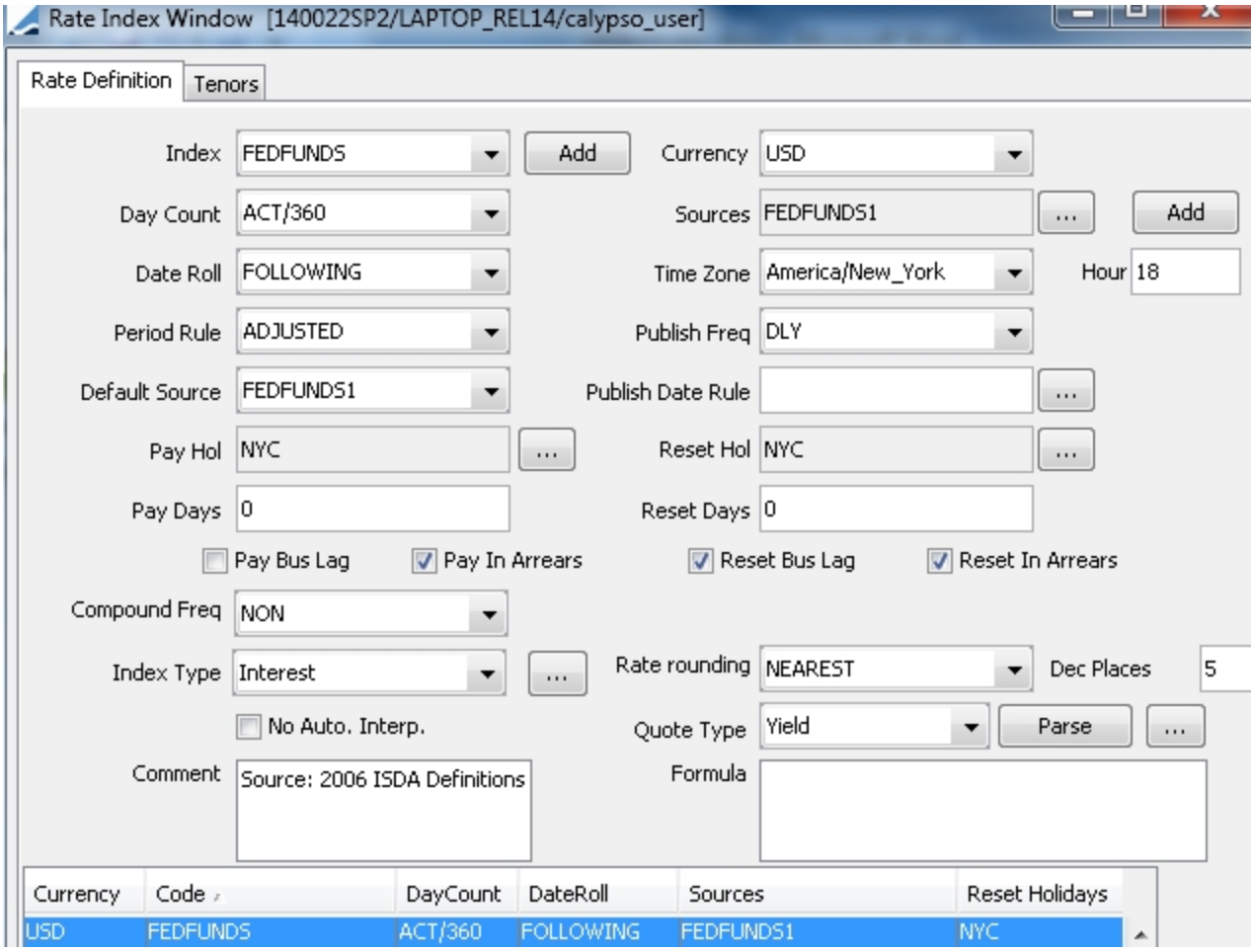
Details on Dates Generation

The dates of the Future products are set by default as follows - You can modify them as needed.

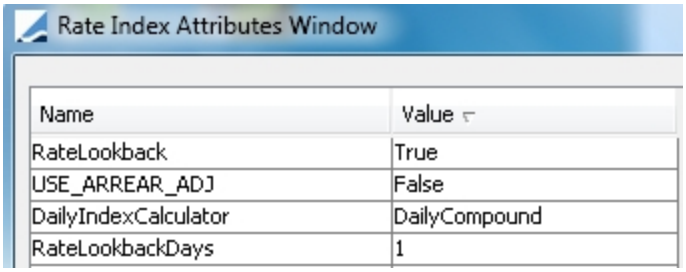
- First Trade Date: Set to the Expiration Date.
- Last Trade Date: Set to the previous date generated by "Last Trade Date Schedule", or to the Expiration Date if no schedule is set.
- First Delivery Date: Set to the next date generated by "First Delivery Date Schedule", or to the Expiration Date if no schedule is set.
- Last Delivery Date: Set to the next date generated by "Last Delivery Date Schedule", or to the Expiration Date if no schedule is set.
- First Notification Date:
  - Commodity: Set to the next date generated by "First Notification Date Schedule".
  - All other products: Set to the next date generated by "First Notification Date Schedule", or to the Expiration Date if no schedule is set.
- Last Notification Date:
  - For Commodity: Set to the next date generated by "Last Notification Date Schedule".
  - All other products: Set to the next date generated by "Last Notification Date Schedule", or to the Expiration Date if no schedule is set.
- Last CCP Date: Set to the Expiration Date + Last CCP Date Lag (number of business days).

7.3 Sample FedFund Future Setup

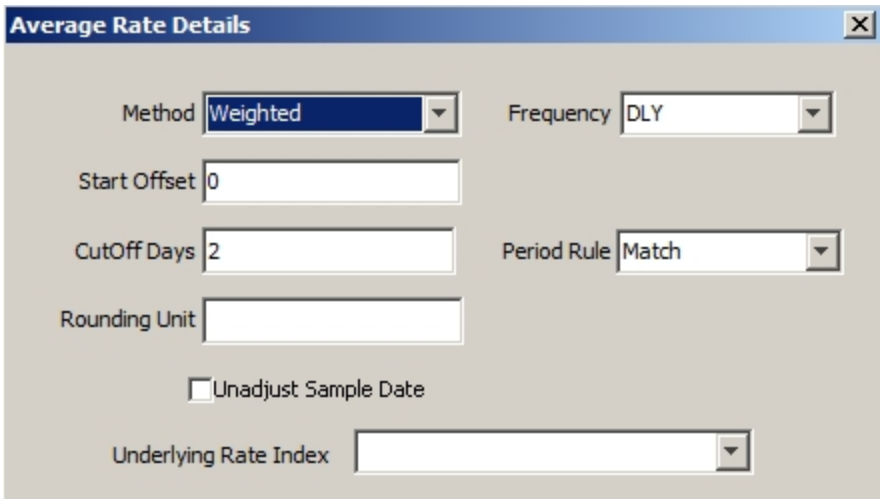
FedFund Rate Index Definition



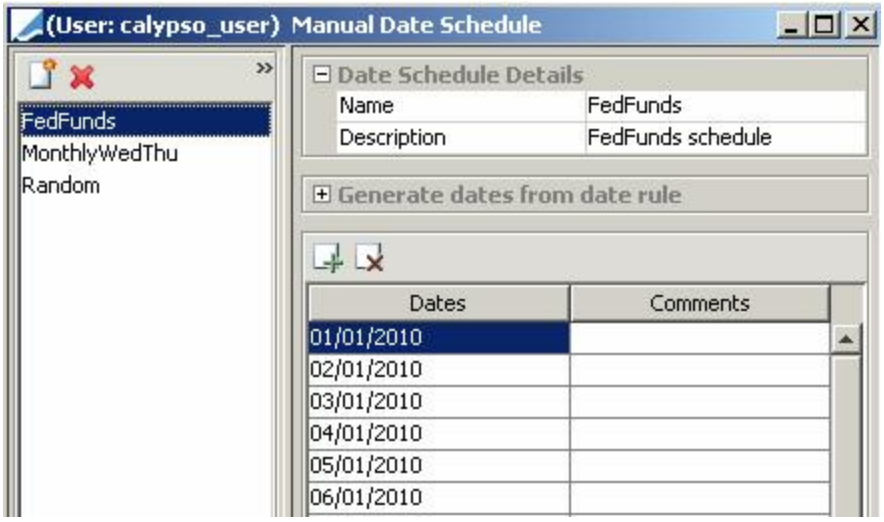
Attributes:



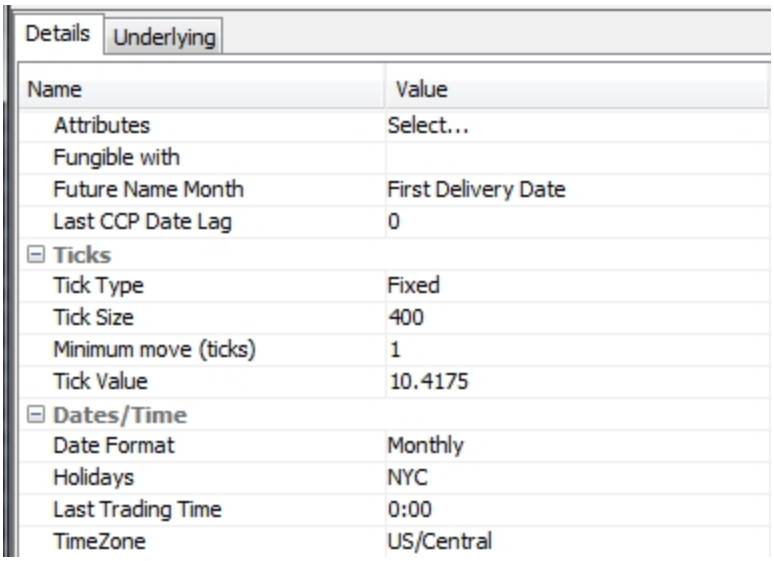
Average Rate Details:



FedFund Manual Date Schedule

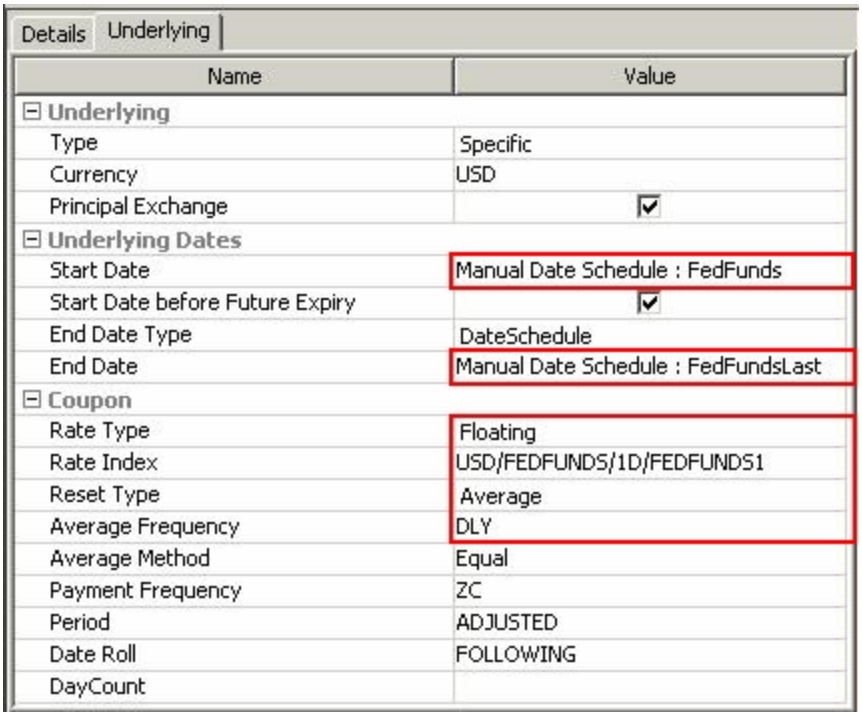


FedFund Contract Definition



Details | Underlying

Name	Value
Attributes	Select...
Fungible with	
Future Name Month	First Delivery Date
Last CCP Date Lag	0
Ticks	
Tick Type	Fixed
Tick Size	400
Minimum move (ticks)	1
Tick Value	10.4175
Dates/Time	
Date Format	Monthly
Holidays	NYC
Last Trading Time	0:00
TimeZone	US/Central



Details | Underlying

Name	Value
Underlying	
Type	Specific
Currency	USD
Principal Exchange	☑
Underlying Dates	
Start Date	Manual Date Schedule : FedFunds
Start Date before Future Expiry	☑
End Date Type	DateSchedule
End Date	Manual Date Schedule : FedFundsLast
Coupon	
Rate Type	Floating
Rate Index	USD/FEDFUNDS/1D/FEDFUNDS1
Reset Type	Average
Average Frequency	DLY
Average Method	Equal
Payment Frequency	ZC
Period	ADJUSTED
Date Roll	FOLLOWING
DayCount	

7.4 Sample DDI Future Setup

The DDI Future is a future on the spread between the CDI rate index and the USD / BRL exchange appreciation.

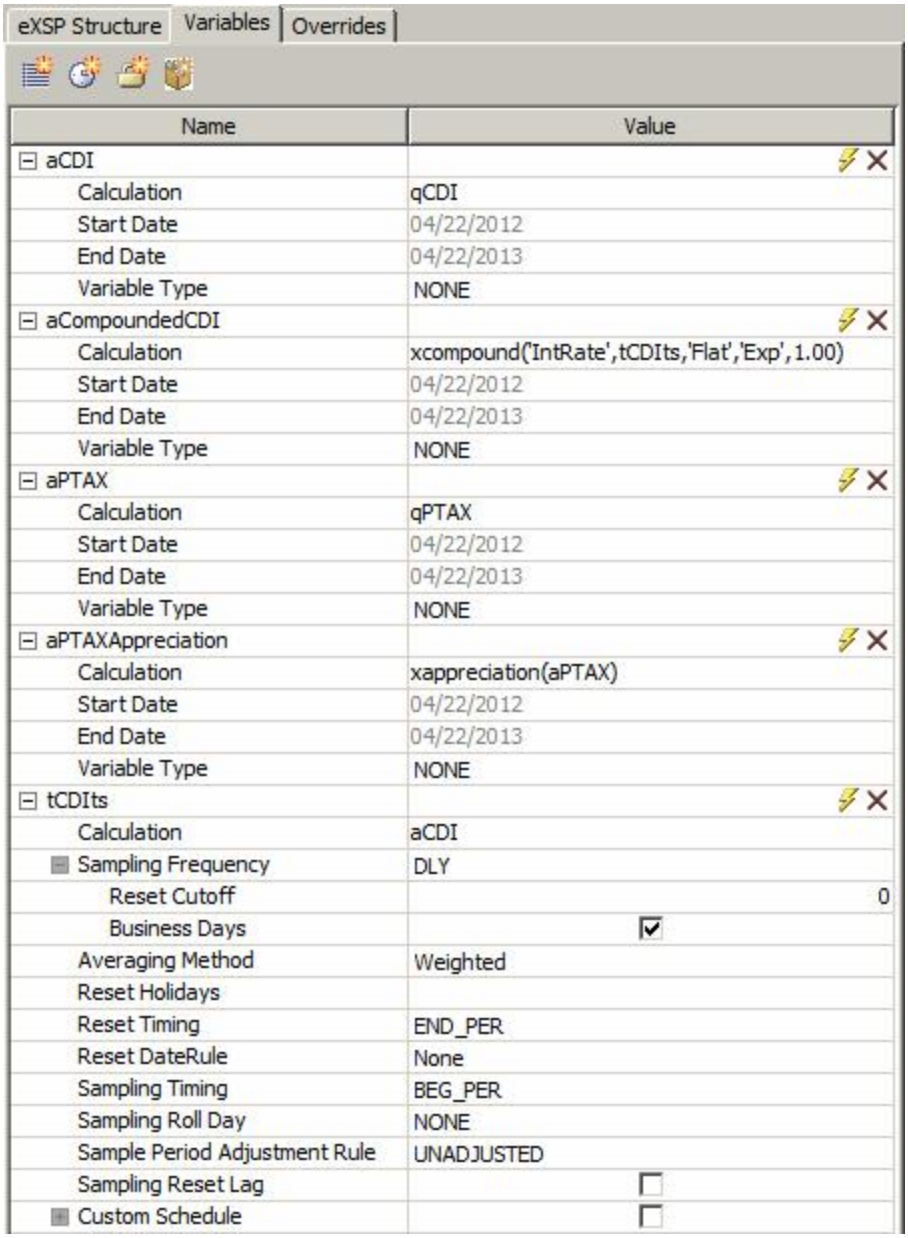
Exotic Structure

The spread between the CDI rate index and the USD / BRL exchange appreciation is defined as an exotic structure.

You first need to define the exotic variables qCDI (exotic variable on the CDI rate index), and qPTAX (exotic variable on the currency pair USD/BRL using **Configuration > Interest Rates > Exotic Variables** from the Calypso Navigator.

Then from the Calypso Navigator, navigate to **Configuration > Product > Exotic Type Creator** to define the exotic structure.

In the Variables panel, define the following variables:



In the eXSP Structure panel, define the following structure:

eXSP Structure | Variables | Overrides

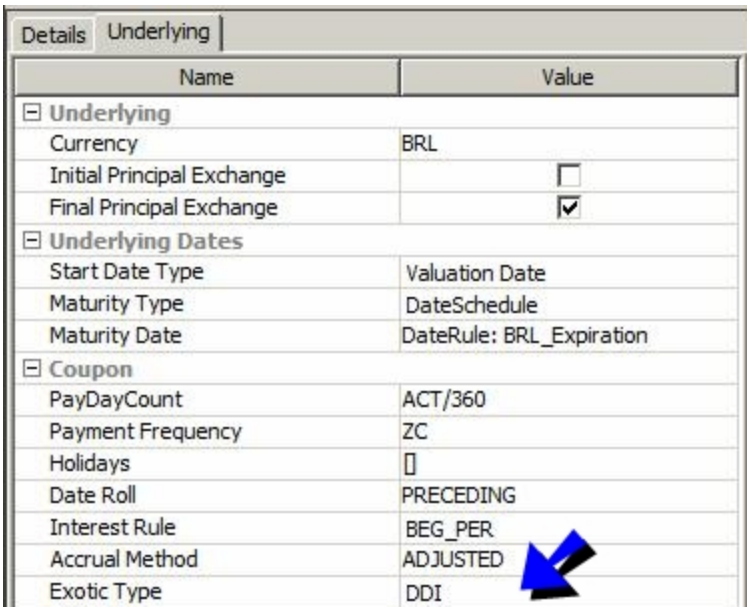
Name	Value
Direction	Receive
Start Date	04/22/2012
End Date	04/22/2013
Currency	USD
Initial Notional	1,000,000
Exotic Capital	1000000.00
Uncustomized Redemptions	
Coupon Formula	aCompoundedCDI-aPTAXAppreciation
Day Count	ACT/360
Payment Frequency	ZC
Payment Timing	END_PER
Date Roll	PRECEDING
Roll Day	DAY
Roll Day Val	1
Holiday	
Reset Date Roll	PRECEDING
Coupon Payoff Type	Coupon

Save the exotic structure and give it a name.

DDI Future Contract Details

Contract Summary	
Exchange	BMF
Currency	BRL
Name	DDI
Type	StructuredFlows
General	
Ticks	
Tick Type	Variable
Nominal Calculator	BRLNominalCalculator
Tick Size	0.001
Minimum move (ticks)	1

- Select the "StructuredFlows" type to allow selecting the exotic structure as an underlying.
- Select the tick type "Variable" and enter the nominal calculator "BRLNominalCalculator".



» Select the exotic structure that you have created which represents the spread between the CDI rate index and the USD / BRL exchange appreciation.

Once a DDI Future is defined, it can be traded as a standard future trade or as an FRC trade.

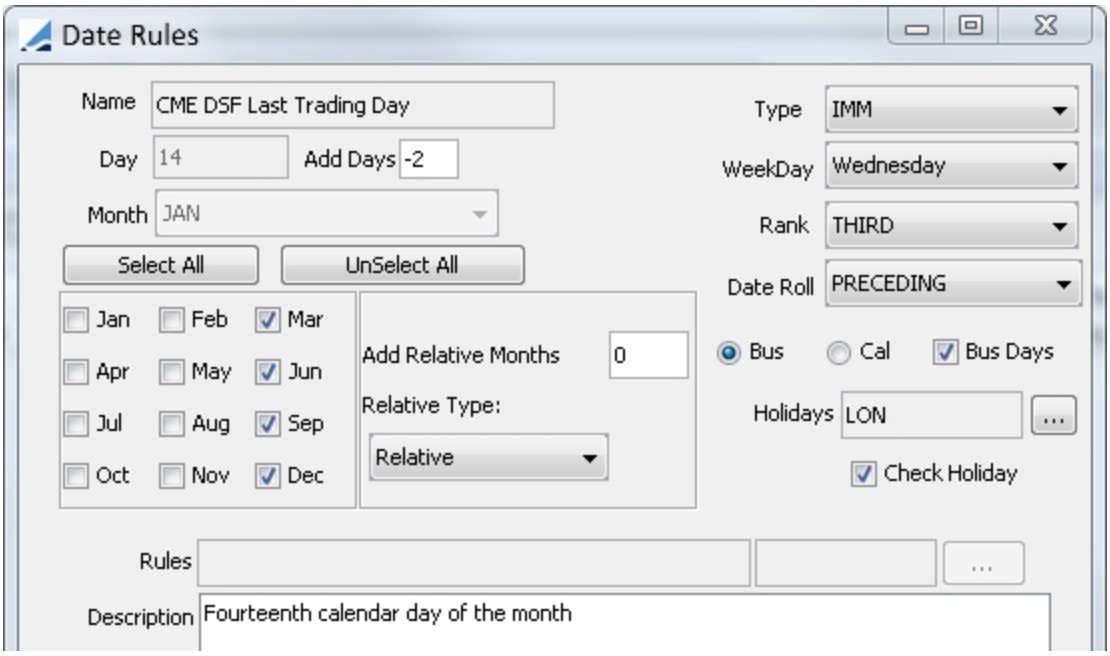
▶ See Capturing Future Trades for details.

7.5 Sample Swap Future Setup

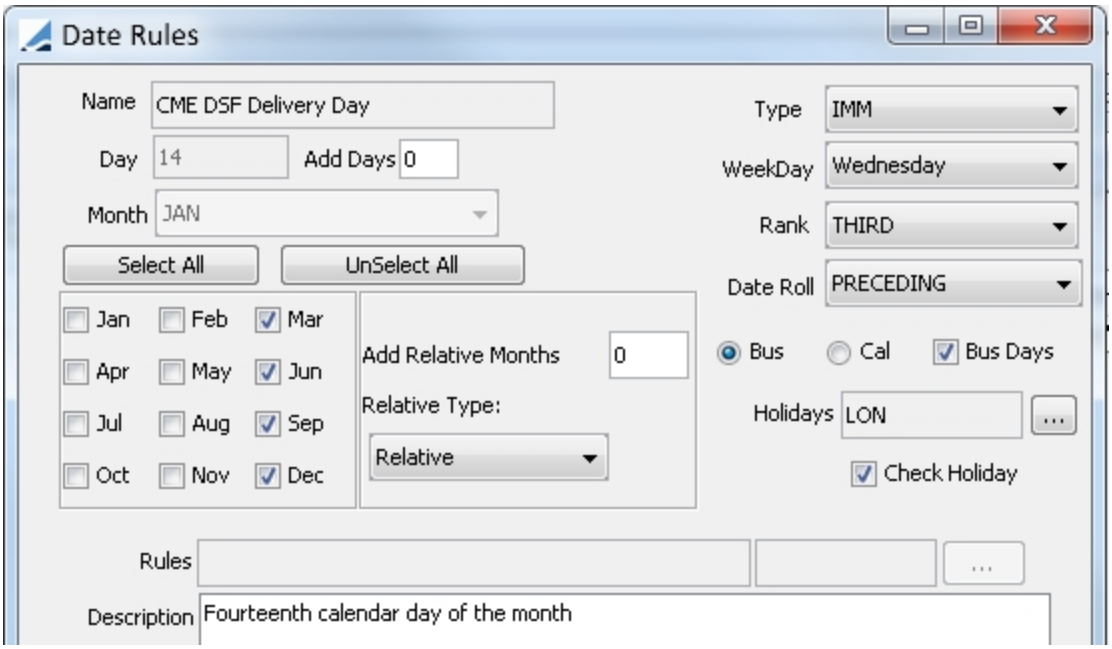
Swap Futures currently support the following products: the CME Deliverable Swap Future, the ERIS Swap Future and the EUREX LDX Constant Maturity Swap Future.

7.5.1 CME Deliverable Swap Future

Date Rules Setup

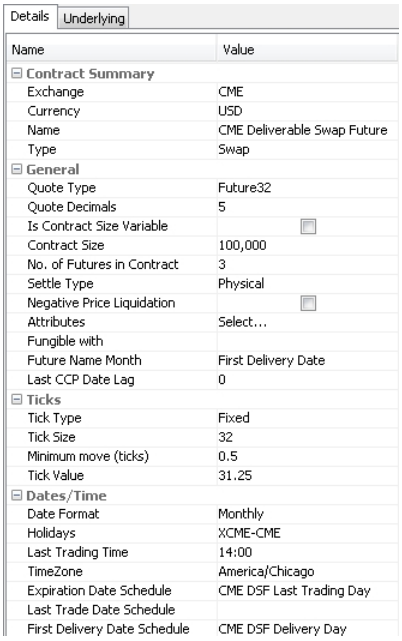


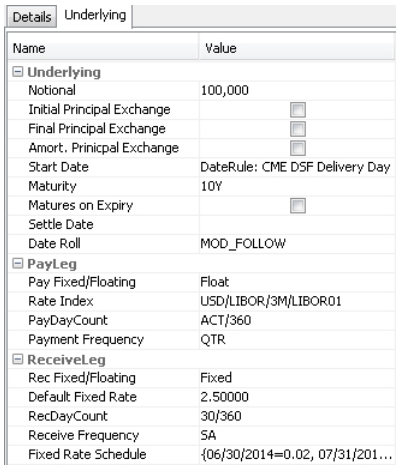
Sample date rule for Expiration Date.



Sample date rule for Delivery Date

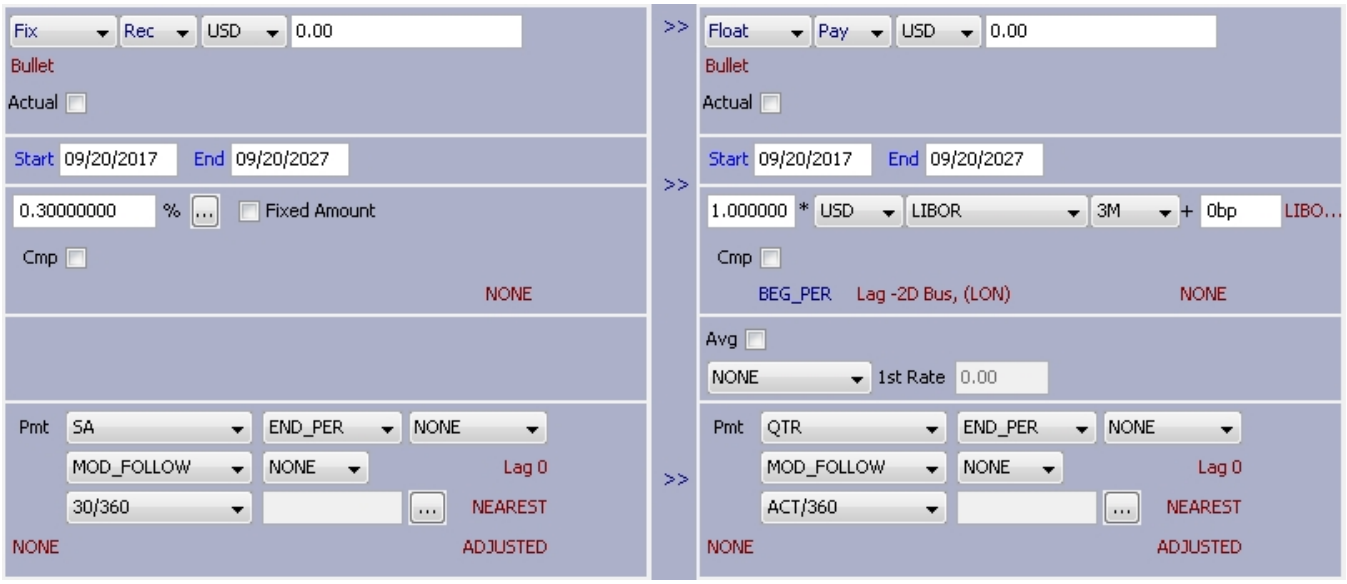
CME Deliverable Future Swap Contract Details





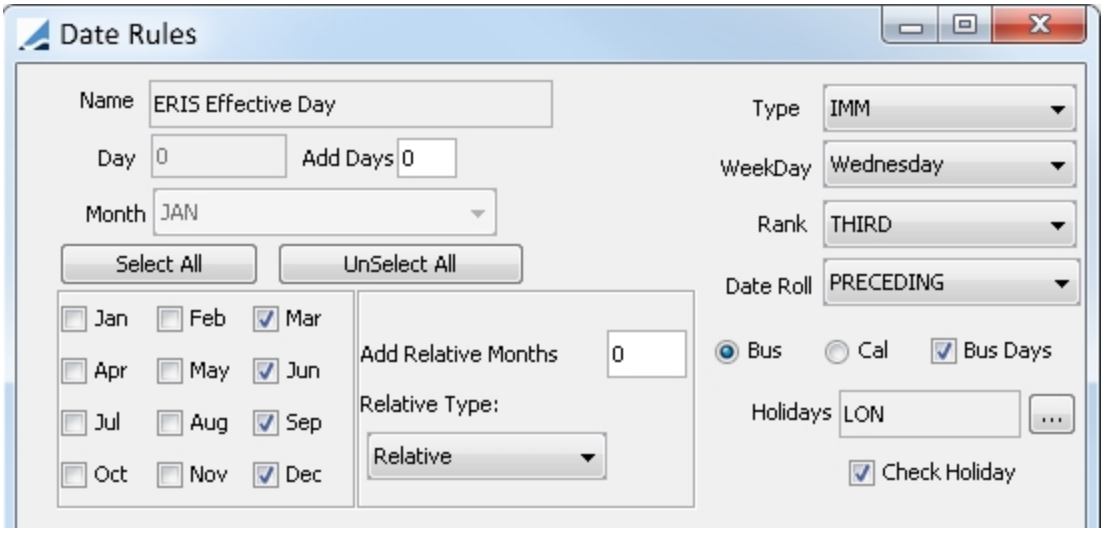
- Select "Swap" for the future Type.
- Select an Expiration Date and First Delivery Date schedule.
- Select the date rule for the Start Date.
- Select the tenor for Maturity.
- Configure details for Pay and Receive legs.

Swap Underlying

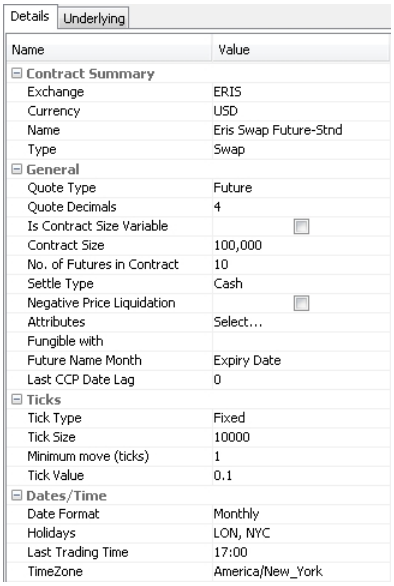


7.5.2 ERIS Swap Future

Date Rule for Start Date

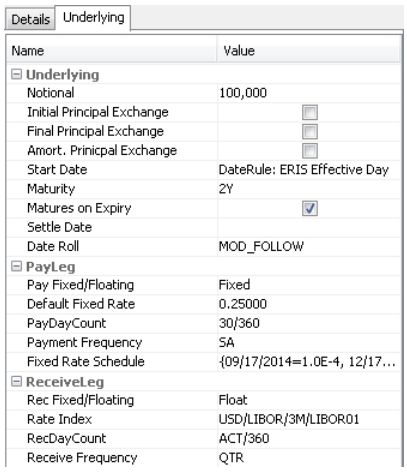


ERIS Future Contract Details



Name	Value
Contract Summary	
Exchange	ERIS
Currency	USD
Name	Eris Swap Future-Stnd
Type	Swap
General	
Quote Type	Future
Quote Decimals	4
Is Contract Size Variable	
Contract Size	100,000
No. of Futures in Contract	10
Settle Type	Cash
Negative Price Liquidation	
Attributes	Select...
Fungible with	
Future Name Month	Expiry Date
Last CCP Date Lag	0
Ticks	
Tick Type	Fixed
Tick Size	10000
Minimum move (ticks)	1
Tick Value	0.1
Dates/Time	
Date Format	Monthly
Holidays	LON, NYC
Last Trading Time	17:00
TimeZone	America/New_York

» Select "Swap" for the future Type.



Name	Value
Underlying	
Notional	100,000
Initial Principal Exchange	
Final Principal Exchange	
Amort. Prinicpal Exchange	
Start Date	DateRule: ERIS Effective Day
Maturity	2Y
Matures on Expiry	
Settle Date	
Date Roll	MOD_FOLLOW
PayLeg	
Pay Fixed/Floating	Fixed
Default Fixed Rate	0.25000
PayDayCount	30/360
Payment Frequency	SA
Fixed Rate Schedule	{09/17/2014=1.0E-4, 12/17...
ReceiveLeg	
Rec Fixed/Floating	Float
Rate Index	USD/LIBOR/3M/LIBOR01
RecDayCount	ACT/360
Receive Frequency	QTR

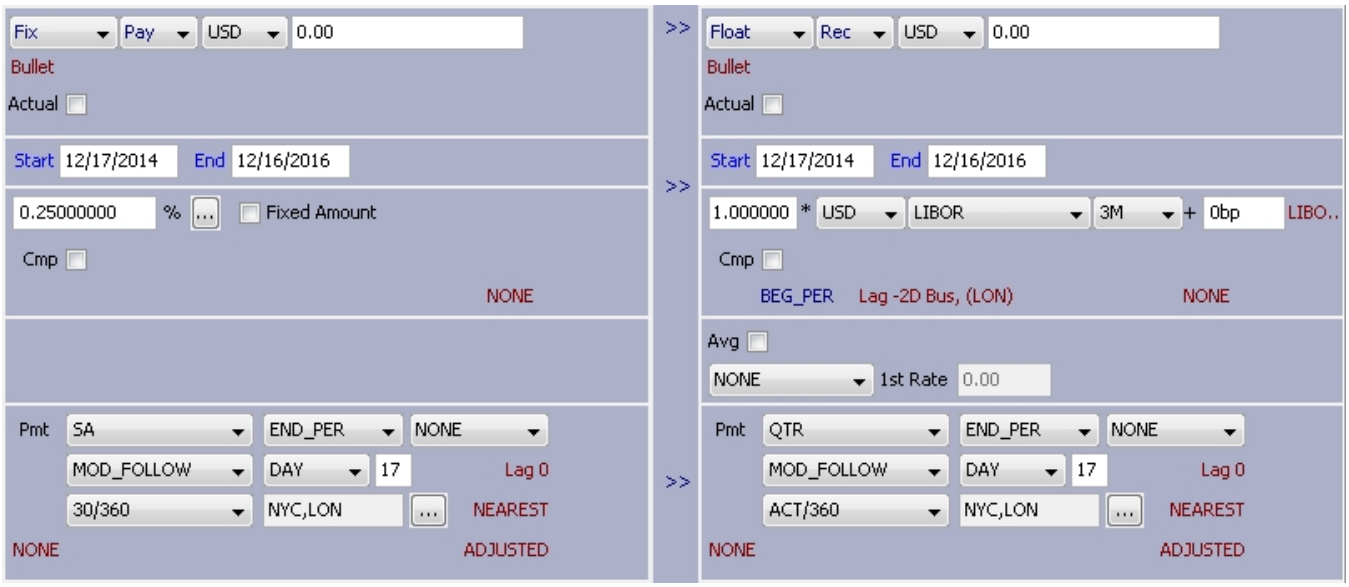
» Select the date rule for Start Date.

» Select the "Matures on Expiry" checkbox.

» Select the tenor for Maturity.

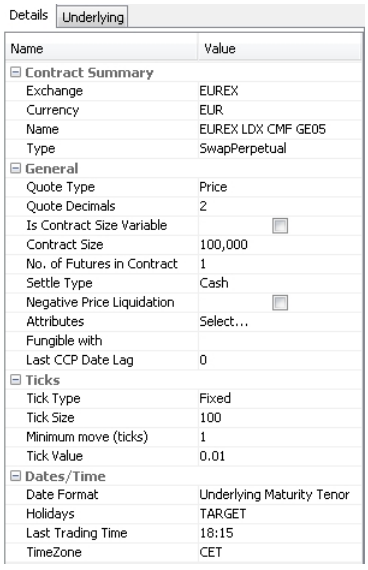
» Configure details for Pay and Receive legs.

Swap Underlying



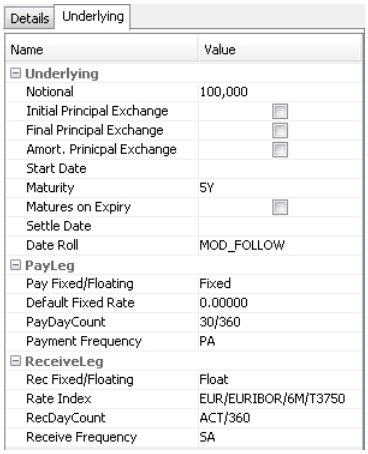
7.5.3 EUREX LDX Constant Maturity Swap Future

LDX Constant Maturity Swap Future Contract Details



» Select "SwapPerpetual" for the future Type.

» For "Date Format" select Underlying Maturity Tenor.



» Select the tenor for Maturity.

» Configure details for Pay and Receive legs.

Swap Underlying

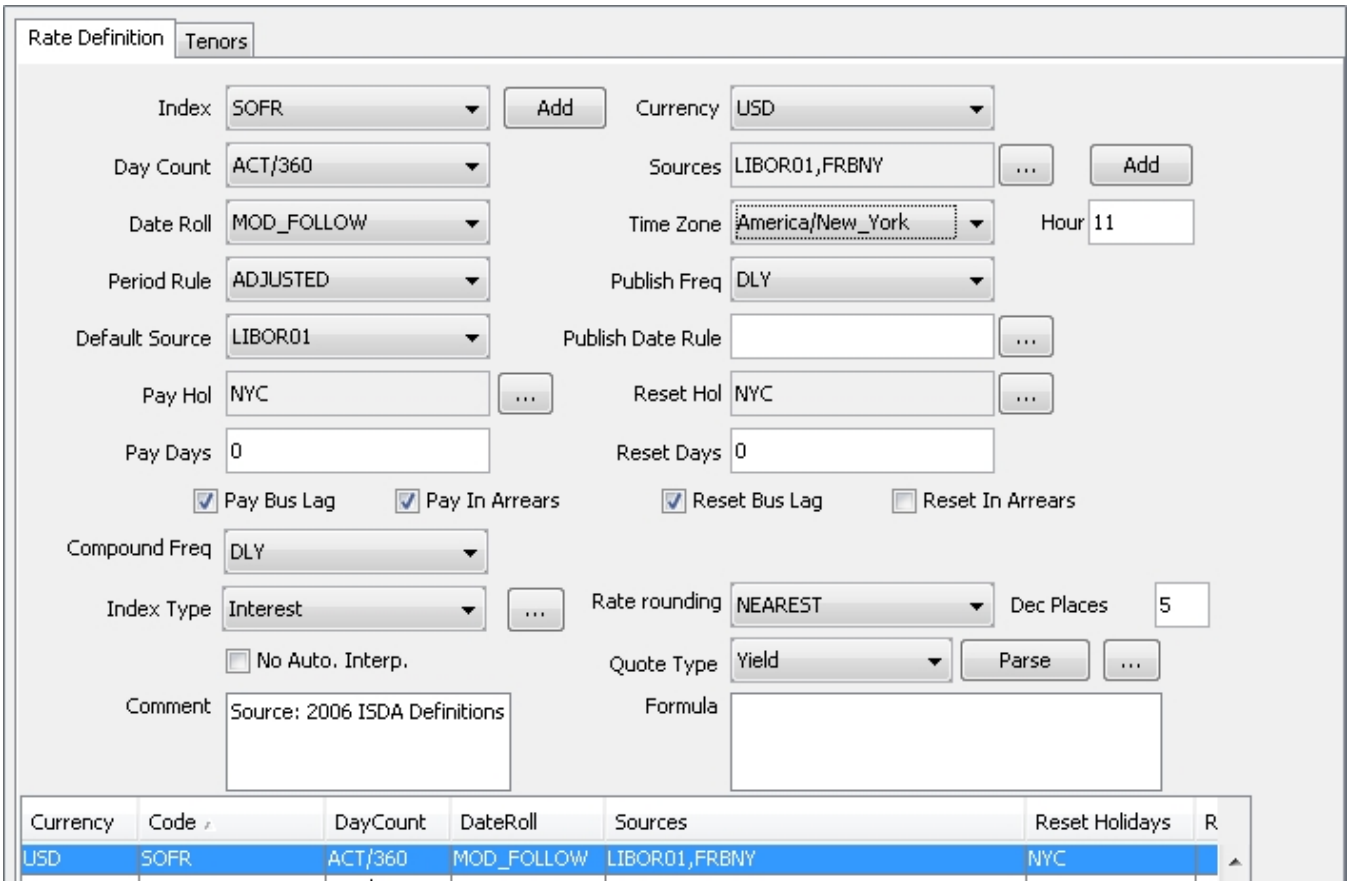
7.6 Sample SOFR Futures

SOFR futures are based on the Secured Overnight Financing Rate (SOFR), which is underpinned by the US Treasury overnight repurchase (repo) market. The futures are currently offered in 1-month and 3-month contracts. The sample setups here represent the recommended configurations for the SOFR rate index and futures in Calypso.

7.6.1 Rate Index for SOFR

Rate Definition Tab

The rate index definition for SOFR futures.



Rate Index Attributes

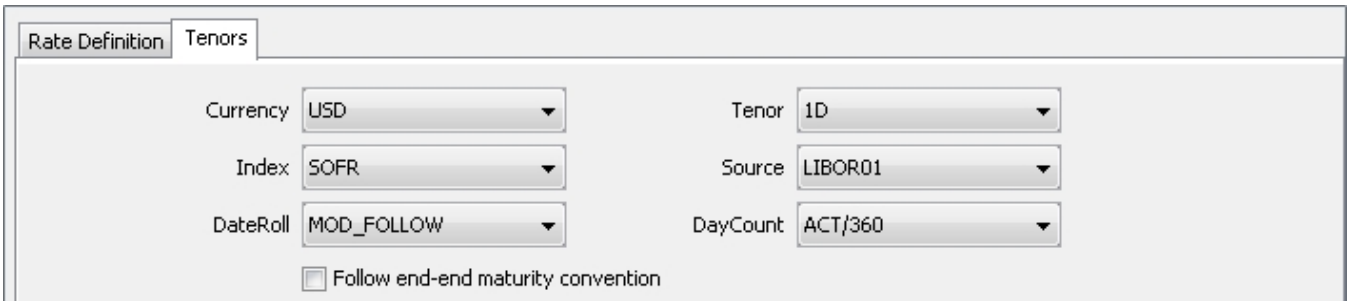
Rate Index Attributes Window

Name	Value
RateLookback	true
USE_ARREAR_ADJ	false
FINAL_RATE_ROUNDING_METHOD	NEAREST
DailyIndexCalculator	DailyCompound2
FINAL_RATE_DEC	5
RateLookbackDays	1

More details are provided in the Calypso Getting Started documentation if needed.

Tenors Tab

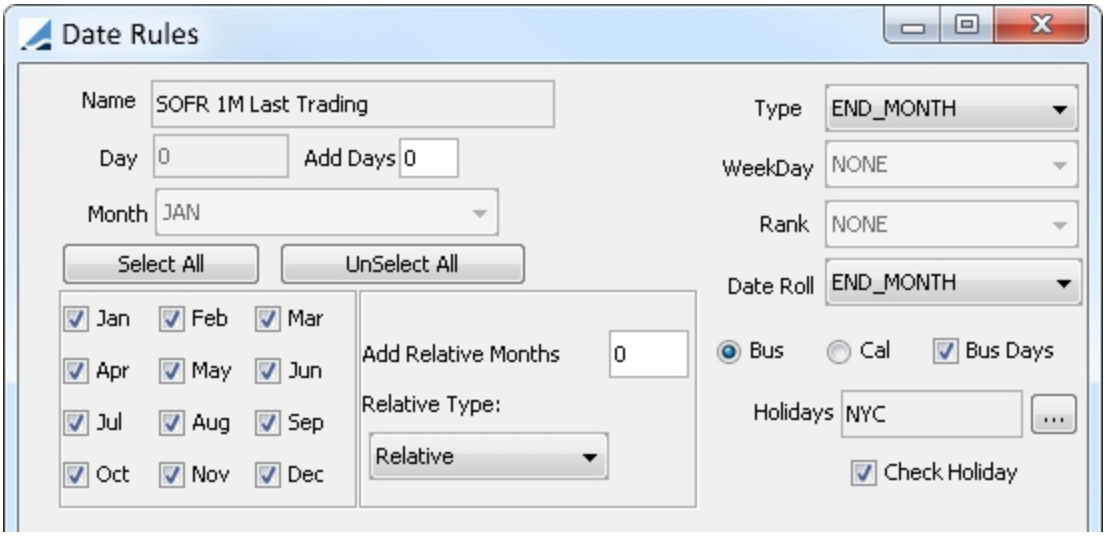
Only the 1D tenor is currently available in the market.



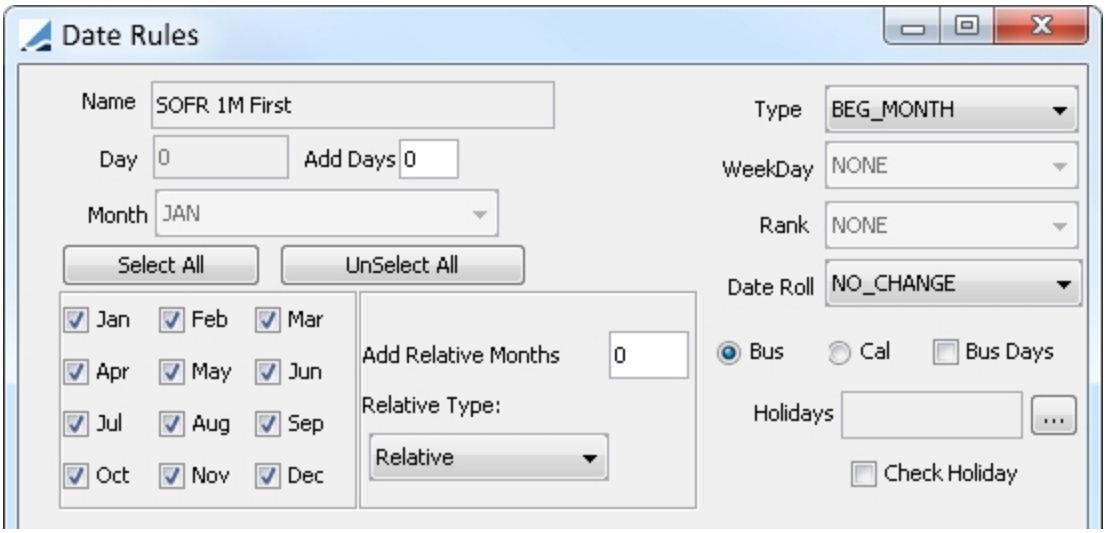
7.6.2 One-Month SOFR Futures

Date Rules

Last Trading Date is the last business day of the month.

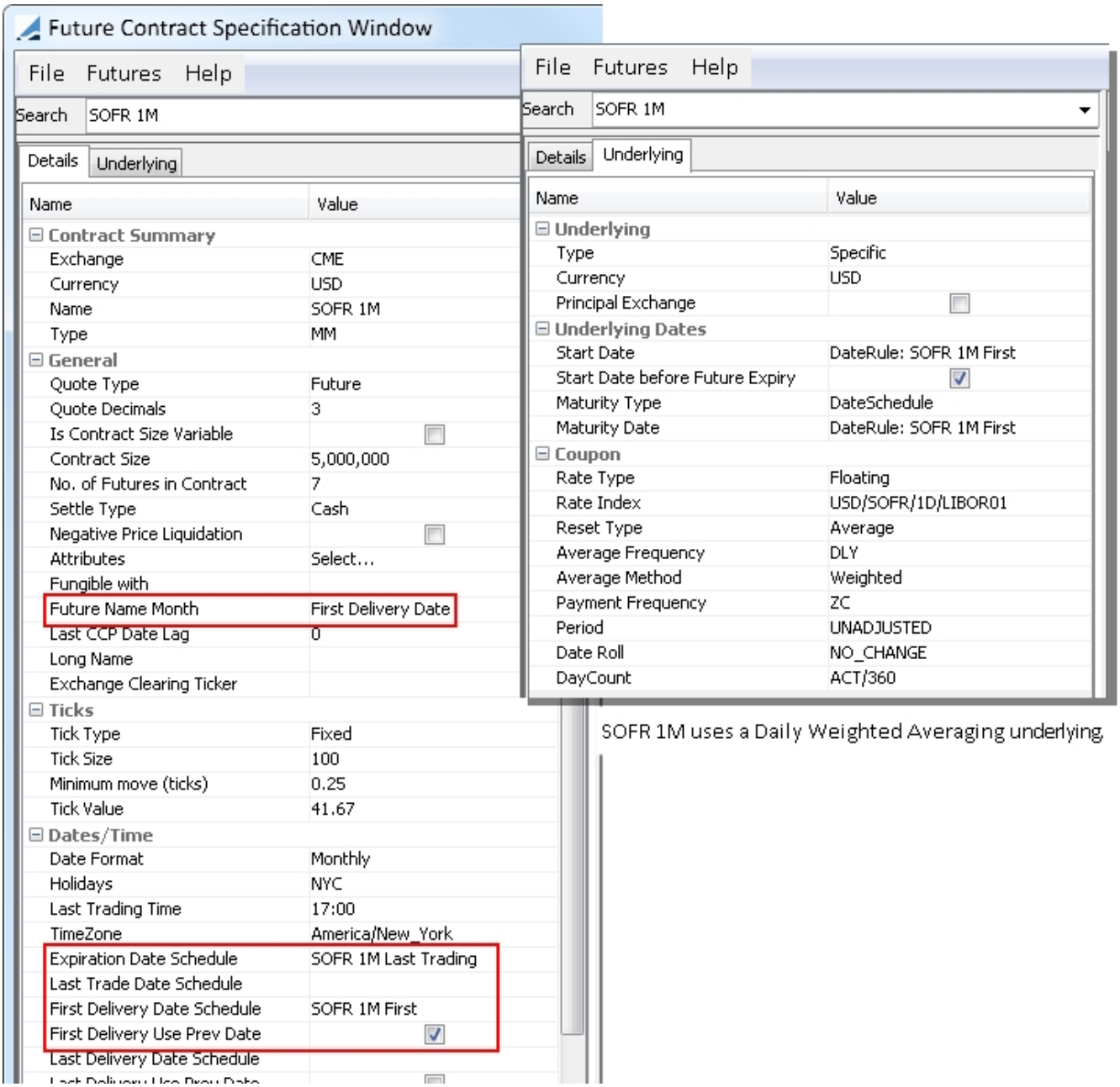


The Underlying Start and End Dates for SOFR 1M is the first calendar day of the month.



Future Contract Configuration

The Future Contract Configuration for SOFR 1M is similar to CBOT FedFunds 30D Futures. Note that the First Delivery Date is being used as the Future Name Month and is being set to equal the Start Date on the Underlying tab.



After loading the futures, the dates should appear similar to those below.

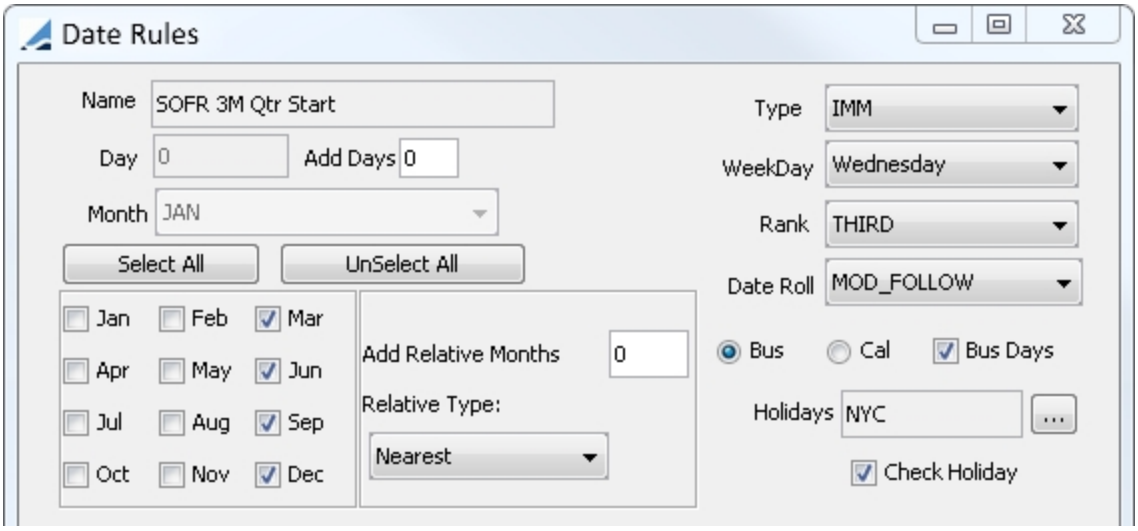
From Date May 16, 2018 Load

Quote Name	Product Description	Expiration Date	Last Trade Date	Underlying Start Date	Underlying End Date	First Delivery
Future.USD.CME.SOFR 1M.MAY.18	FutureMM/SOFR 1M/05/01/2018	05/31/2018	05/31/2018	05/01/2018	06/01/2018	05/01/2018
Future.USD.CME.SOFR 1M.JUN.18	FutureMM/SOFR 1M/06/01/2018	06/29/2018	06/29/2018	06/01/2018	07/01/2018	06/01/2018
Future.USD.CME.SOFR 1M.JUL.18	FutureMM/SOFR 1M/07/01/2018	07/31/2018	07/31/2018	07/01/2018	08/01/2018	07/01/2018
Future.USD.CME.SOFR 1M.AUG.18	FutureMM/SOFR 1M/08/01/2018	08/31/2018	08/31/2018	08/01/2018	09/01/2018	08/01/2018
Future.USD.CME.SOFR 1M.SEP.18	FutureMM/SOFR 1M/09/01/2018	09/28/2018	09/28/2018	09/01/2018	10/01/2018	09/01/2018
Future.USD.CME.SOFR 1M.OCT.18	FutureMM/SOFR 1M/10/01/2018	10/31/2018	10/31/2018	10/01/2018	11/01/2018	10/01/2018
Future.USD.CME.SOFR 1M.NOV.18	FutureMM/SOFR 1M/11/01/2018	11/30/2018	11/30/2018	11/01/2018	12/01/2018	11/01/2018

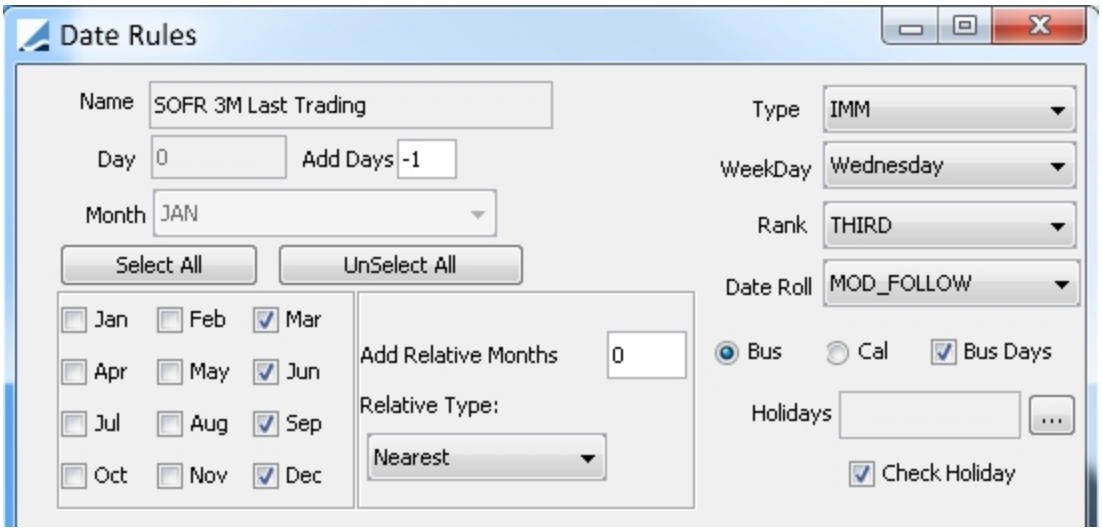
7.6.3 Three-Month SOFR Futures

Date Rules

The Underlying tab Start Date and End Date are quarterly from IMM Wed to IMM Wed.

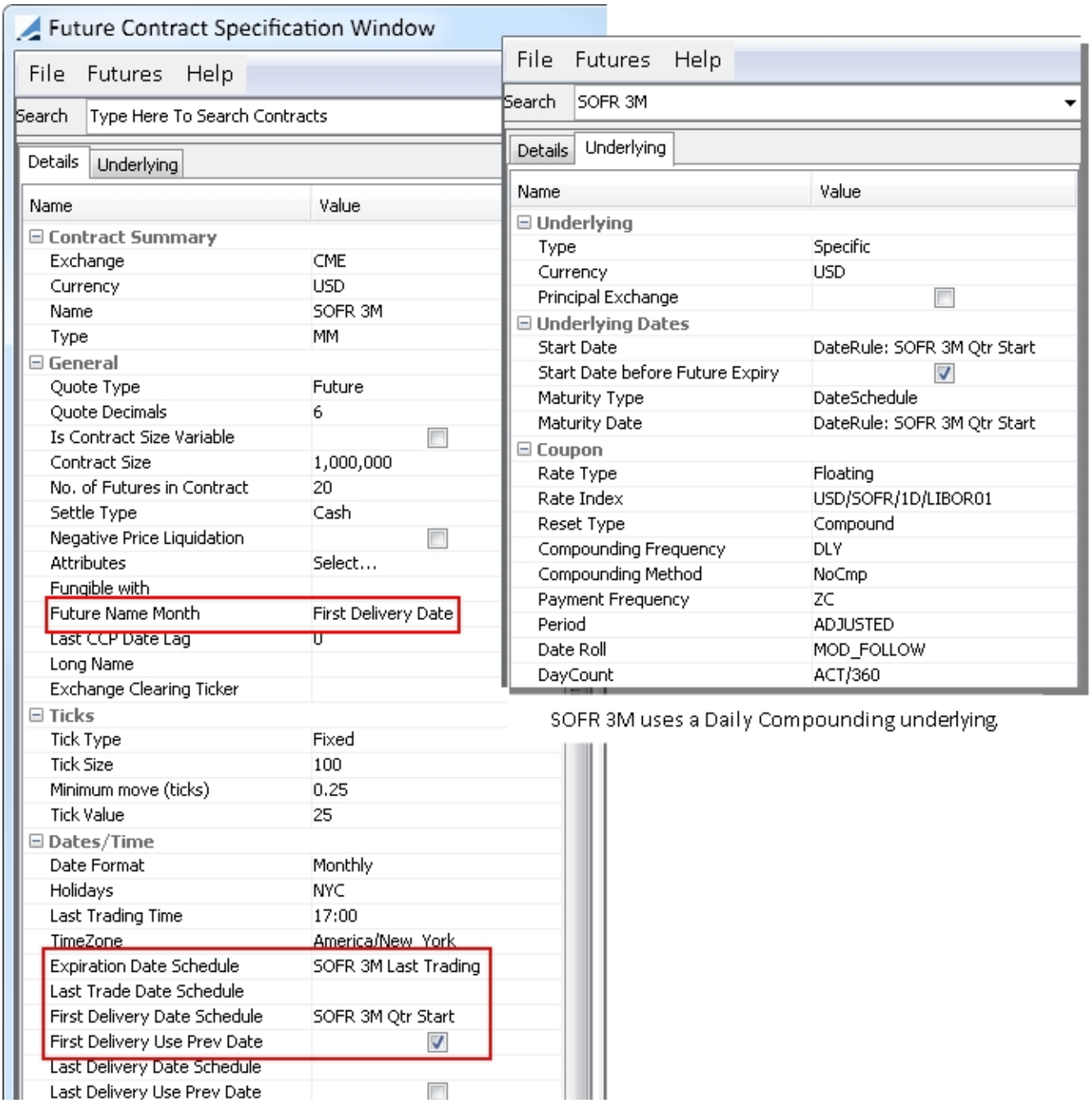


The Expiry/Last Trading Date is the last good business day before the delivery month's IMM Wed.



Future Contract Configuration

Note that the First Delivery Date is being used as the Future Name Month and is being set to equal the Start Date on the Underlying tab.



After loading the futures, the dates should appear similar to those below.

From Date May 16, 2018 Load Config

Quote Name	Product Description	Expiration Date	Last Trade Date	Underlying Start Date	Underlying End Date	First Delivery Dat
Future.USD.CME.SOFR 3M.MAR.18	FutureMM/SOFR 3M/03/21/2018	06/19/2018	06/19/2018	03/21/2018	06/20/2018	03/21/2018
Future.USD.CME.SOFR 3M.JUN.18	FutureMM/SOFR 3M/06/20/2018	09/18/2018	09/18/2018	06/20/2018	09/19/2018	06/20/2018
Future.USD.CME.SOFR 3M.SEP.18	FutureMM/SOFR 3M/09/19/2018	12/18/2018	12/18/2018	09/19/2018	12/19/2018	09/19/2018
Future.USD.CME.SOFR 3M.DEC.18	FutureMM/SOFR 3M/12/19/2018	03/19/2019	03/19/2019	12/19/2018	03/20/2019	12/19/2018
Future.USD.CME.SOFR 3M.MAR.19	FutureMM/SOFR 3M/03/20/2019	06/18/2019	06/18/2019	03/20/2019	06/19/2019	03/20/2019
Future.USD.CME.SOFR 3M.JUN.19	FutureMM/SOFR 3M/06/19/2019	09/17/2019	09/17/2019	06/19/2019	09/18/2019	06/19/2019
Future.USD.CME.SOFR 3M.SEP.19	FutureMM/SOFR 3M/09/18/2019	12/17/2019	12/17/2019	09/18/2019	12/18/2019	09/18/2019
Future.USD.CME.SOFR 3M.DEC.19	FutureMM/SOFR 3M/12/18/2019	03/17/2020	03/17/2020	12/18/2019	03/18/2020	12/18/2019
Future.USD.CME.SOFR 3M.MAR.20	FutureMM/SOFR 3M/03/18/2020	06/16/2020	06/16/2020	03/18/2020	06/17/2020	03/18/2020
Future.USD.CME.SOFR 3M.JUN.20	FutureMM/SOFR 3M/06/17/2020	09/15/2020	09/15/2020	06/17/2020	09/16/2020	06/17/2020
Future.USD.CME.SOFR 3M.SEP.20	FutureMM/SOFR 3M/09/16/2020	12/15/2020	12/15/2020	09/16/2020	12/16/2020	09/16/2020
Future.USD.CME.SOFR 3M.DEC.20	FutureMM/SOFR 3M/12/16/2020	03/16/2021	03/16/2021	12/16/2020	03/17/2021	12/16/2020
Future.USD.CME.SOFR 3M.MAR.21	FutureMM/SOFR 3M/03/17/2021	06/15/2021	06/15/2021	03/17/2021	06/16/2021	03/17/2021
Future.USD.CME.SOFR 3M.JUN.21	FutureMM/SOFR 3M/06/16/2021	09/14/2021	09/14/2021	06/16/2021	09/15/2021	06/16/2021
Future.USD.CME.SOFR 3M.SEP.21	FutureMM/SOFR 3M/09/15/2021	12/14/2021	12/14/2021	09/15/2021	12/15/2021	09/15/2021
Future.USD.CME.SOFR 3M.DEC.21	FutureMM/SOFR 3M/12/15/2021	03/15/2022	03/15/2022	12/15/2021	03/16/2022	12/15/2021
Future.USD.CME.SOFR 3M.MAR.22	FutureMM/SOFR 3M/03/16/2022	06/14/2022	06/14/2022	03/16/2022	06/15/2022	03/16/2022
Future.USD.CME.SOFR 3M.JUN.22	FutureMM/SOFR 3M/06/15/2022	09/20/2022	09/20/2022	06/15/2022	09/21/2022	06/15/2022
Future.USD.CME.SOFR 3M.SEP.22	FutureMM/SOFR 3M/09/21/2022	12/20/2022	12/20/2022	09/21/2022	12/21/2022	09/21/2022
Future.USD.CME.SOFR 3M.DEC.22	FutureMM/SOFR 3M/12/21/2022	03/14/2023	03/14/2023	12/21/2022	03/15/2023	12/21/2022

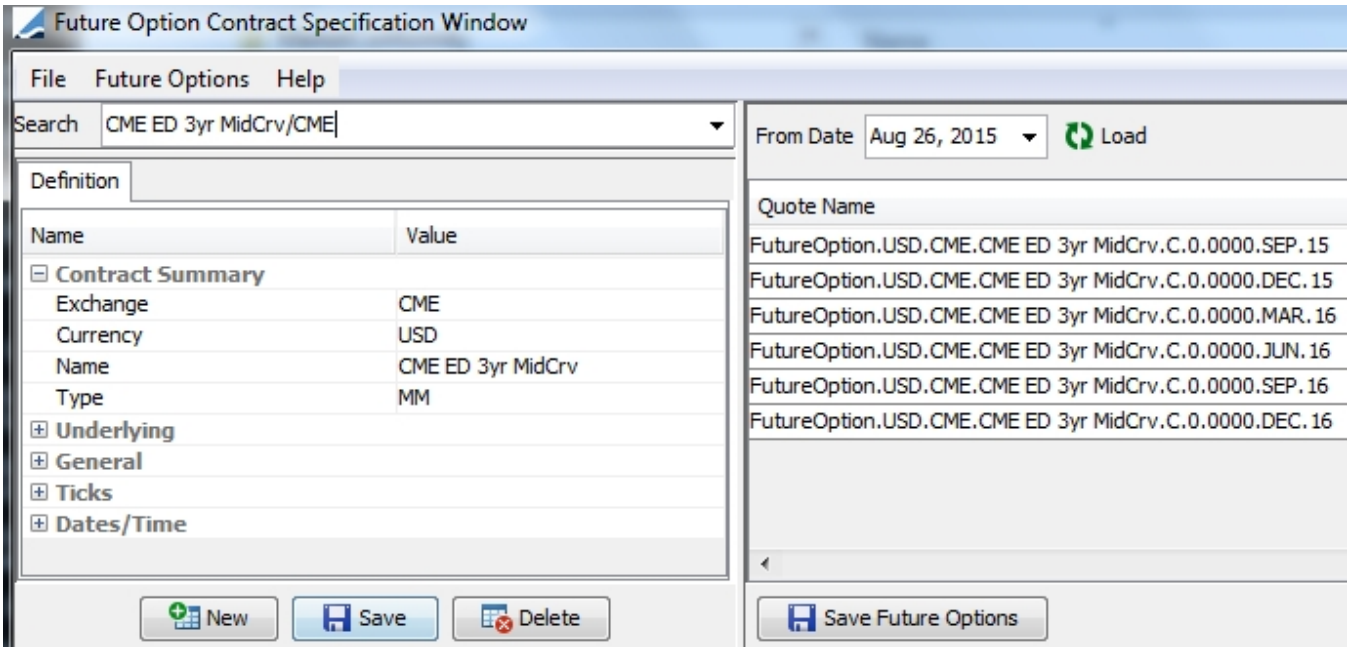
8. Defining Future Option contracts

A future option contract is a collection of future option products traded on a given exchange at a given expiry month. The future option products can be traded.

> ***Quick Reference***
>
> Creating future option contracts and products is a two-step process:
>
> - You first create the contract
> - Then you generate and save the actual future option products that can be traded

8.1 Editing and Creating Future Option Contracts

From the Calypso Navigator, navigate to **Configuration > Listed Derivatives > Future Option Contracts** (menu action `refdata.FutureOptionDefinitionWindow`) for creating future option contracts.



» To create a new contract, click **New**. Then enter the fields described below: Contract Summary and Definition.

» To load and edit an existing contract, type in a few letters in the Search field. All contracts that contain those letters will appear. You can select a contract from the list. You can then edit the fields described below as needed.

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

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

Enter the details of the contract.

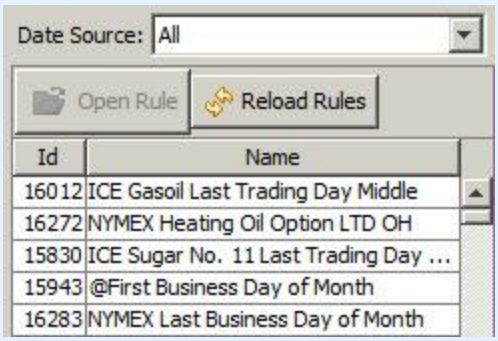
Contract Summary

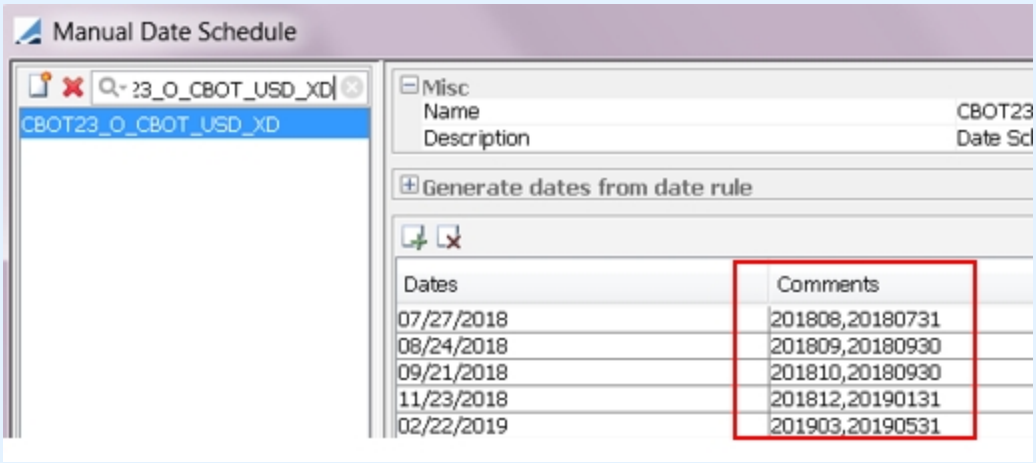
Fields	Description
Exchange	Select the exchange where the contract is traded. An exchange is a legal entity of role MarketPlace.
Currency	Select the currency in which the contract is traded.
Name	Enter the contract name. Note that a unique contract is defined by its combination of Name, Exchange and Currency, so that you cannot have an MM future option contract and a bond future option contract with the same name and currency on the same exchange.
Type	Select the type of future: Bond, Commodity, Dividend, EquityIndex, FX, MM (Money Market), Swap.

Underlying

The underlying is a future contract - Future contracts are created using **Configuration > Listed Derivatives > Future Contracts** from the Calypso Navigator.

Fields	Description
Exchange	Select the exchange where the underlying future contract is traded.
Currency	Select the currency in which the underlying future contract is traded.
Name	Select the name of the underlying future contract. You can choose **Future Options > Show Underlying Future** to view the corresponding future contract.
Underlying Dates	You can select from the following. ***Underlying Add Months*** Use this feature when the underlying future has a different maturity than the option expiration. Enter the number of months you want to add to the standard expiry months of the underlying future to link the future to the future option. ***Underlying Date Schedule*** Use this feature to map future options to special underlying futures. For example, the convention for LME Vanilla Exchange Traded Options is for monthly option expiration occurring on the first Wednesday of the month with physical exercise into the Future with a delivery date of the Third Wednesday of the month. For most future option contracts, this is no problem, because the monthly option expirations match the monthly

Fields	Description
	future expirations. However, due to the fact that the LME base metal future contracts have daily expirations, while the options have the monthly exercise described above, there needs to be a link between the future option to the correct underlying future. You can select a date rule, or you can select a manual date schedule.  » You can click **Open Rule** to view the selected date rule or manual date schedule. » You can sort the rules by ID or by Name by clicking the corresponding header. Date rules are created using **Configuration > Definitions > Date Schedule Definitions > Date Rule** from the Calypso Navigator - Help is available from that window. Manual date schedules are created using **Configuration > Definitions > Date Schedule Definitions > Manual Date Schedule** from the Calypso Navigator - Help is available from that window. ***Add Months on Product*** Use this feature to add months to each product individually using the product code UAM. If you select a manual date schedule for the expiration date schedule and enter the reference date in the Comments of the manual schedule in the form yyyyMMDD, the product code UAM will be set accordingly. If you use both “Prompt Month” and “Add Months on Product”, the Comments of the manual schedule must be set in the form <prompt month date>,<UAM date>.

Fields	Description
	

General Fields

Fields	Description
Quote Type	Select the quote type of the future option's price. For Future32 and Future64, the format is HHH-TTF. • H: whole points. • TT: number of whole 32nds or 64ths of a point • F: fractional values of 32nds or 64ths – For Future32, valid values are 0, 1 (1/8), 2 (1/4), 3 (3/8), 5 (1/2), 6 (5/8), 7 (3/4), 8 (7/8). – For Future64, valid values are 0, 2 (1/4), 5 (1/2), 7 (3/4).
Quote Decimals	Define the decimal precision at the contract level. The system uses this decimal precision in the Price field in the trade window and in quote rounding when calculating the NPV.
Exercise Type	Select the exercise type: American or European. You can also select Asian - It behaves as the European exercise type. It is only used for SPAN calculations in the context of ETD Clearing. Exercise types are defined in the domain "ExerciseType".
AutoExercise	Not applicable to future options.
Settle Type Option	Select the settlement type of the underlying product: Cash or Physical.
No. of Option Contract	Enter the total number of future option products traded in the contract.
Attributes	Optional. Click **Select...** to add attributes to the contract definition.

Fields	Description
	Out-of-the-box Attributes • DateFormat - You can set the attribute DateFormat to 'MMM yy' to display the contract in this format in the Future Option trade worksheet. The value is case sensitive.  Other available formats: – "dd MMM yy" for 10 Mar 08 for example – "dd MM yyyy" for 10 03 2008 for example – "dd.MM.yyyy" for 10.03.2008 for example – More examples can be found at http://download.oracle.com/javase/6/docs/api/java/text/SimpleDateFormat.html **[NOTE: For the nominal calculator SFEFutureNominalCalculator, the DateFormat attribute must be set to "MMM yy"]** • FutureRoundingMethod - You can set the attribute FutureRoundingMethod to NEAREST, UP, or DOWN. It will be applied to round (Trade Price * Tick Size * Tick Value) when computing the premium. • StrikeQuoteType - Provides a free text field for specifying a different quote type for the strike than the one used by the underlying future. ▶ For details on quote types used by the system, see "Quote Types" in Calypso *General Information* documentation.
Fungible with	Select a contract that can be liquidated with the current contract, if any.
Future Option Name Month	Select the reference date to identify the contract name: • First Delivery Date • Last Delivery Date • Last Trading Date • Expiry Date • Prompt Month - You need to select a manual date schedule for the expiration date schedule and enter the reference date in the Comments of the manual schedule in the form yyyyMM or yyyyMMDD. In the case where the Comments is monthly only, the date will default to the first calendar day of the month. This will populate the product code "Prompt Month" on the future option products.
Long Name	Contract long name.
Exchange Clearing Ticker	For ETD Clearing - Market standard contract symbol used by the exchange and trade interface.

<table>
<tr><th>Fields</th><th>Description</th></tr>
<tr><td>Premium Payment Convention</td><td>Type of premium:
Conventional - The premium is paid upfront at the time of the transaction.
VariationMargined – The future option is traded on margin. No premium/principal paid at the time of transaction. The future option commodity analytics use a discount rate of 0.0 (when using the Black model to come up with the option price).
If an exchange is defined in the FutureLiffeModel domain, then the variation margin method is used.
Following are the possible combinations and the pricing model that is used.<table><tr><th>Domain</th><th>Attribute</th><th>Pricing Model</th></tr><tr><td>Not set</td><td>Not set</td><td>Conventional</td></tr><tr><td>Not set</td><td>Conventional</td><td>Conventional</td></tr><tr><td>Not set</td><td>VariationMargined</td><td>Variation</td></tr><tr><td>Exchange</td><td>Not set</td><td>Variation</td></tr><tr><td>Exchange</td><td>Conventional</td><td>Conventional</td></tr><tr><td>Exchange</td><td>VariationMargined</td><td>Variation</td></tr></table></td></tr>
</table>

Ticks

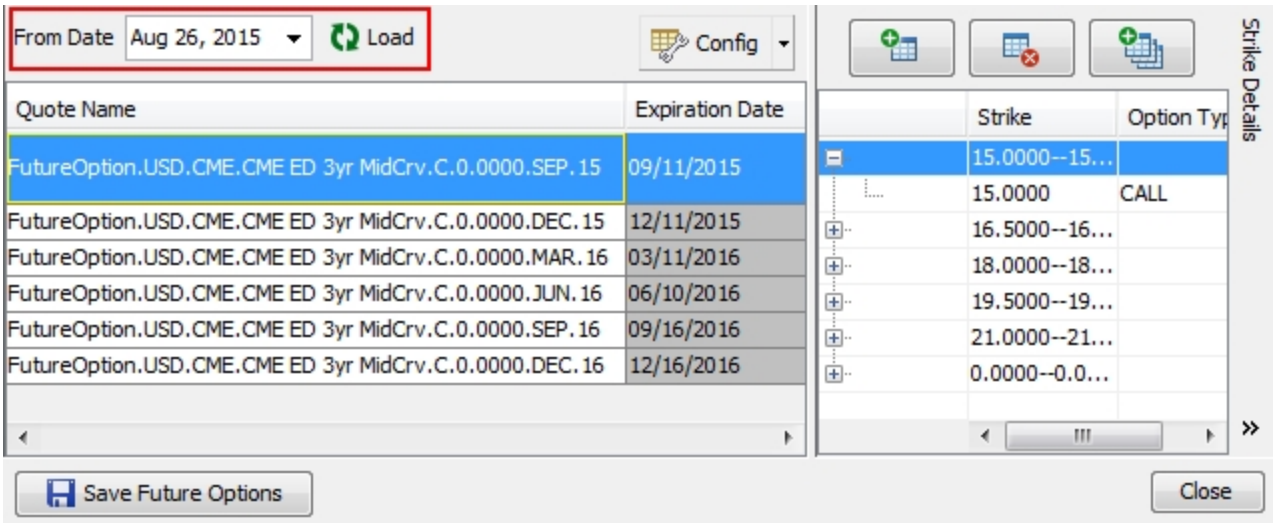
Fields	Description
Tick Type	Select the tick type: Fixed or Variable. When Variable is selected, a nominal calculator needs to be specified. See below.
Nominal Calculator	Only applies to variable ticks. The nominal calculator is used for computing the contract size. For NZD / AUD future options, specify the nominal calculator as "SFEFutureNominalCalculator." Otherwise, you need to implement a custom calculator for computing the contract size. To implement a custom calculator, create a class named `tk.util.<calculator name>` that implements `tk.product.util.FutureNominalCalculator`.
Minimum move (ticks)	Enter the minimum allowable price fluctuation for the contract, as defined by the exchange, in decimal format.
Tick Value	Only applies to fixed ticks. Enter the change in value of one contract, given a change in the contract's price equal to the Minimum Move (one tick). Tick Value = Contract Size / Tick Size
Tick Size	The Tick Size is the denominator of the fractional representation of the Minimum Move. For instance, a minimum move of 0.01, or 1/100, gives a Tick Size of 100. You can add tick size values to the dropdown menu through the domain "tickSize".

Dates/Time

Fields	Description
Date Format	Select the date format for the quote names of the future option products: • Daily - The quote name contains the day, month and year. • Monthly - The quote name contains the month and year. **[NOTE: So called "Flex" options - bespoke products allowed by some exchanges for trading and clearing by the clearinghouse, and which sometimes have multiple expiration dates - are referenced by a day, month, and year to conform to date formatting conventions in quotes. To match formats, you can use the Daily setting for the Date Format and then specify the appropriate day/month/year arrangement by using the DateFormat contract attribute. See Attributes above.]**
Last Trading Time	Enter the time of day that trading will end on the last trading day. Use twenty-four hour time notation (for example 16:30 is four-thirty in the afternoon).
Time Zone	Select the time zone of the trading time.
Expiration Date Schedule Last Trade Date Schedule First Delivery Date Schedule Last Delivery Date Schedule	Type in a few letters (at least 2) in a date schedule field. All date schedules that contain those letters will appear. You can select a date schedule from the list. A date schedule can be a date rule or a manual date schedule. Date rules are created using **Configuration > Definitions > Date Schedule Definitions > Date Rule** from the Calypso Navigator - Help is available from that window. Manual date schedules are created using **Configuration > Definitions > Date Schedule Definitions > Manual Date Schedule** from the Calypso Navigator - Help is available from that window.

8.2 Generating Future Option Products

Load a contract from the Search field. Then select a start date and click **Load** on the right-hand side.



- In the Strike Details panel, click  to generate a set of strikes for each future option expiration. You can generate strikes between 2 values, or ATM strikes. A future option product is created for each combination of expiration and strike.

  You can also click  to add strike rows as needed, and enter the strike and option type.
- The product code Prompt Month is populated by the Comments of the manual expiration schedule if Future Option Name Month = "Prompt Month".
- If "Underlying Dates = Add Months on Product" on the Future Option Contract, you can add months to each product individually using the product code UAM.
- You can click **Select...** in the Attributes column to view the attributes of the future option contracts.
- Click **Save Futures Options** to save the actual future option products that can be traded.
- You can select **Config > Open Column Configurator** to configure the layout. Then you can select **Config > Save Current Column Config** to save the layout, otherwise it will be lost upon closing the window.

Details on Dates Generation

The dates of the Future Option products are set by default as follows - You can modify them as needed.

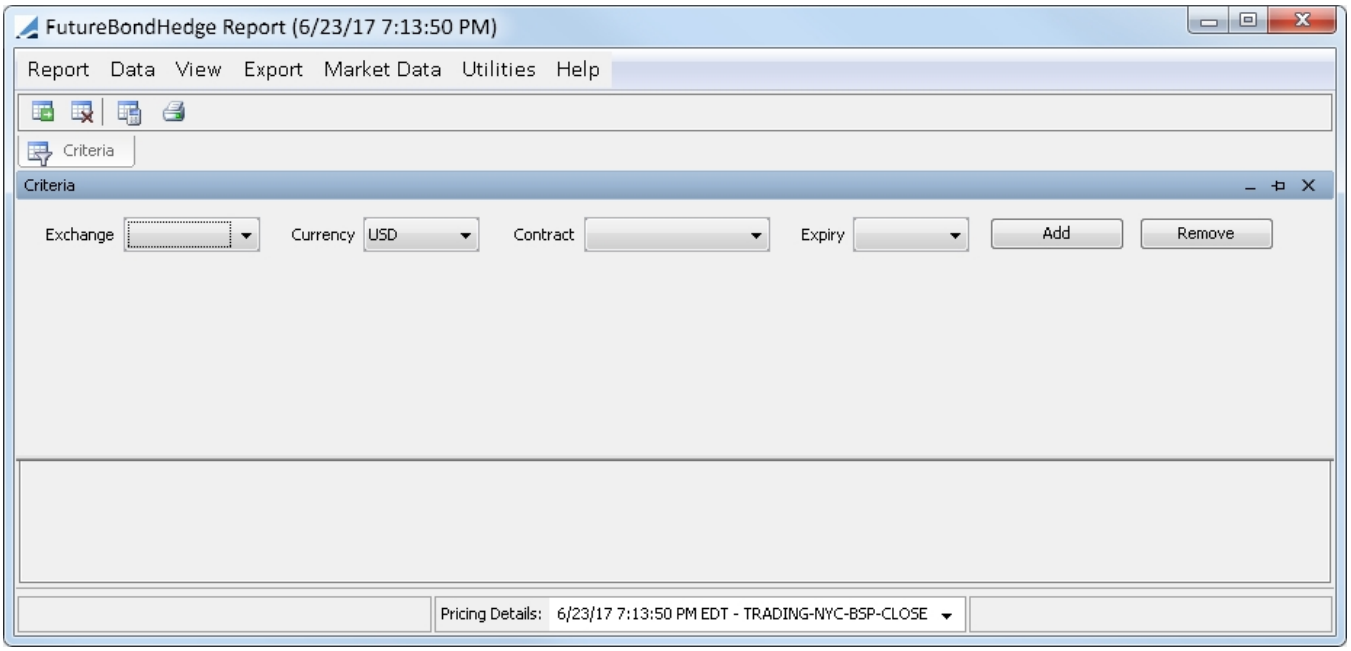
- First Trade Date: Set to the Expiration Date.
- Last Trade Date: Set to the previous date generated by "Last Trade Date Schedule", or to the Expiration Date if no schedule is set.
- First Delivery Date: Set to the next date generated by "First Delivery Date Schedule", or to the Expiration Date if no schedule is set.
- Last Delivery Date: Set to the next date generated by "Last Delivery Date Schedule", or to the Expiration Date if no schedule is set.

9. Future Bond Hedge Report

The Future Bond Hedge Report allows users to load Future Bond products and view measures such as PV01 and MODIFIED_DURATION. The report can then be saved as a template, which can be used in trade windows. This document describes how to use the report.

Future Bonds are created in the Future Contract Specification Window. You can open this window by pointing to **Configuration > Listed Derivatives > Future Contracts**.

From the Calypso Navigator, point to **Reports > Securities Reports > Future Bond Hedge Report** (menu action `reporting.ReportWindow$FutureBondHedge`) to open the report.



- Select the Criteria tab, enter search criteria using the fields described below, and click **Add** to load the corresponding future bond product to the report (click the Criteria tab again to show future bonds in the report). Repeat this step to add multiple future bonds to the report. You can click **Remove** to remove a future bond from the report.
- To save a number of future bonds as a template, point to **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.
- To load a template, point to **Report > Load Template**. Select the template in the Report Template window, then click **OK**. Finally, click to display the future bonds in the report.

- Before loading a report, you can select a template as described above and click to display the number of objects that will be loaded from the database.
- Click to print the report results.
- Click to clear the report and any loaded templates.

▶ For details on menu items in reports, see "Report Menu Items" in Calypso *Getting Started* documentation.

Search Criteria

Search Field	Description
Exchange	Select the exchange where the contract is traded.
Currency	Select the currency in which the contract is traded.
Contract	Enter the future contract name.
Expiry	Select the expiration for the future.

Error Count	Hedge Id	Prd Description	Contract. Name	Product Currency	PRICE	PV01	MODIFIED_DURATION	Contract. CTD
0	1	FutureBond/Future Bond 1/06/21/2017	Future Bond 1	USD	0.00	0.00	0.00	JUN.17/BondT 2 1/4 08/15/46/30Y/08/15/
0	2	FutureBond/Future Bond 2/12/07/2017	Future Bond 2	EUR	153.190	-1.23	7.80800	DEC.17/BondT 1 5/8 05/15/26/10Y/05/15/
0	3	FutureBond/Future Bond 1/12/19/2017	Future Bond 1	USD	152.30000000	-290.02	19.55077	DEC.17/BondT 2 7/8 11/15/46/30Y/11/15/

Sample output for Future Bond Hedge Report

10. Capturing Future Trades

The Future trade worksheet is the same for all types of futures, except for FX futures (refer to FX Documentation for FX Futures).

Prior to trading futures, you need to define future contracts and generate future products.

▶ See Defining Future Contracts for details.

[NOTE: For Listed Derivatives Clearing, please refer to Calypso ETD Clearing documentation for information on fees and trade capture]

Futures 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: The trade counterparty must be a clearer, so you must have defined a legal entity of role Clearer – See Specifying Clearers for details]

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 appears in the title bar of the trade worksheet, a trade id is assigned to the trade, and the status of the trade is modified according to the workflow configuration.

[NOTE: Even though the subtype is not visible on the trade window, the subtype is set to the contract name]

Pricing a Trade

» Click **Price** to price the trade or you can hit F4.

» You can choose **Pricing Env > Check** to check if all required pricing data are available in the Pricing Environment.

- Bond Futures - Bond futures use PricerFutureBond. It requires futures quotes if FUTURE_FROM_QUOTE is true, or a zero curve if FUTURE_FROM_QUOTE is false.

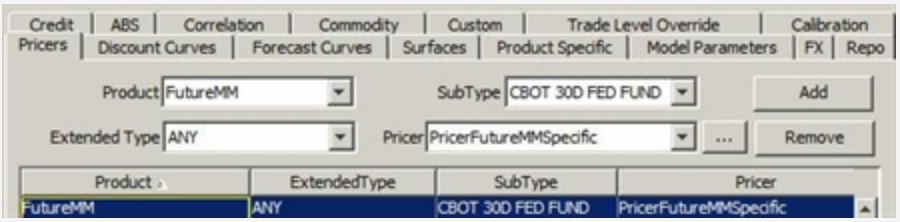
  Bond futures with relative underlying require bond quotes for the cheapest-to-deliver bond if BOND_FROM_QUOTE is true, or a zero curve if BOND_FROM_QUOTE is false.

- BRL and Money Market Futures - A money market future requires future quotes, and a discount curve.

  For a BRL future, use PricerFutureMMBRL.

  For a Relative MM future (Relative underlying), use PricerFutureMM.

  For a Specific MM future (Specific underlying such as daily compounding futures FedFunds, EONIA, DDI, etc.), use PricerFutureMMSpecific. You can accomplish that by setting the pricer per subtype (contract name) in the Pricer Configuration.



- Commodity Futures - A commodity future trade requires the following market data: a zero curve for discounting the cash flows, a commodity forward curve for forecasting the price. The future quote is not used in pricing when the FUTURE_FROM_QUOTE pricing parameter is set to false.
- CDS Index Futures - A CDS index future requires future quotes, underlying CDS Index quotes, and a discount curve.
- Equity and Equity Index Future - An equity or equity index future requires future quotes, underlying equity or equity index quotes, a discount curve, and a dividend curve for the underlying.
- Swap Futures - Swap futures use PricerFutureSwap, while the LDX IRD Constant Maturity Future uses PricerSwapPerpetual. They require future quotes, a discount curve, and a forecast curve.

Trade Lifecycle

» You can allocate the trade to multiple books using **Back Office > Allocate**

» You can terminate the trade using **Back Office > Terminate**, or terminate cash trades in bulk using **Trade Lifecycle > Termination > Terminate** from the Calypso Navigator

» You can liquidate the trade manually using **Back Office > Manual Liquidation**

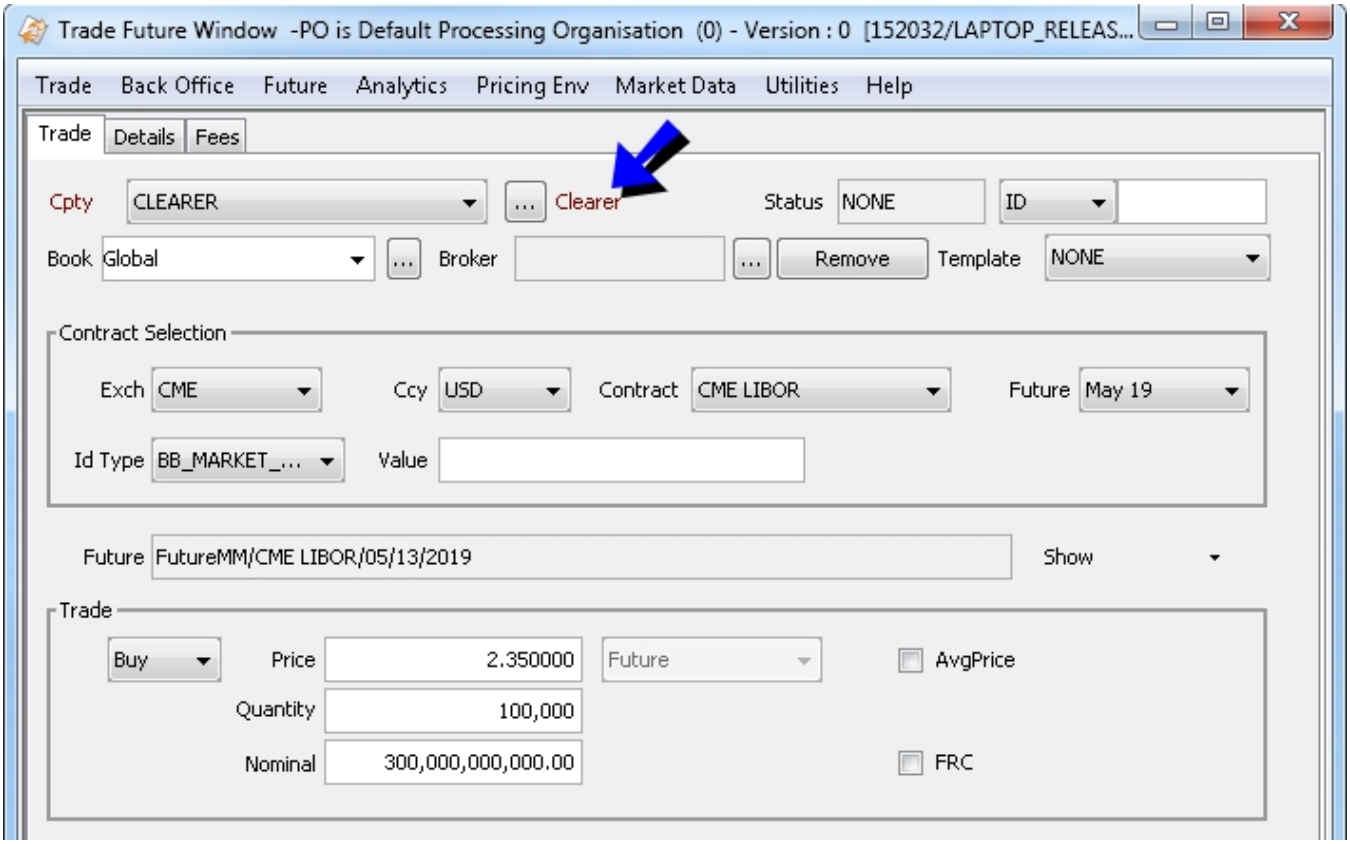
» You can expire futures using **Trade Lifecycle > Expiration & Exercise > Future Expiry**

from the Calypso Navigator, or the FUTURE_POSITION_EXPIRY scheduled task

» You can compute margin calls on the clearing accounts in real-time or in batch mode

10.1 Sample Money Market Future Trade

From the Calypso Navigator, navigate to **Trade > Money Market > Interest Rate Futures**.



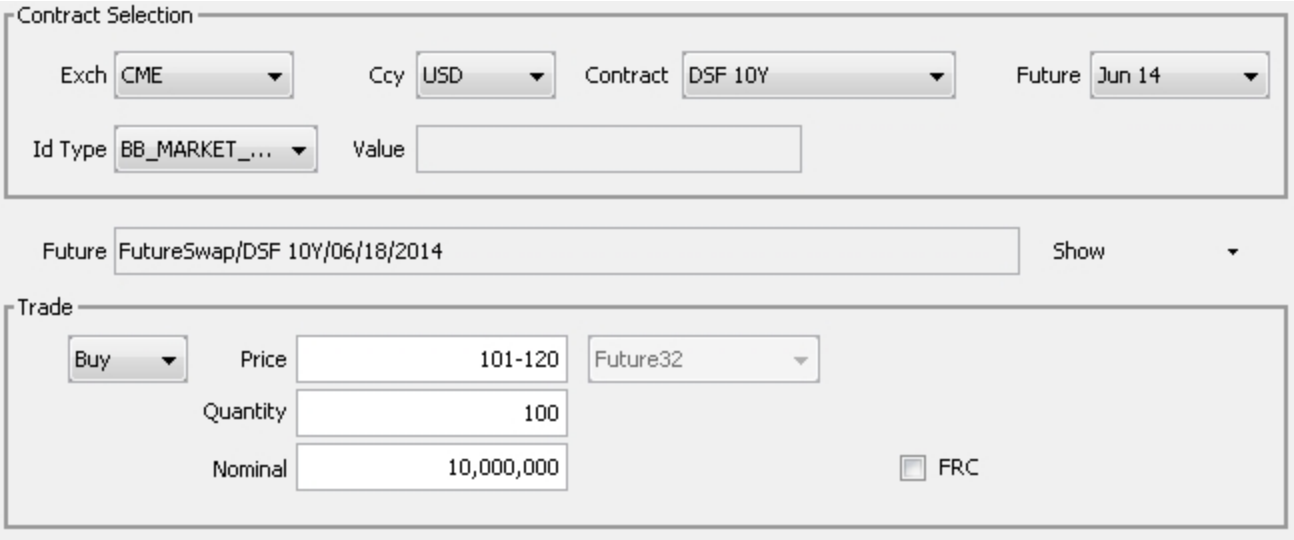
Average Price

You can select the AvgPrice checkbox to preserve the trade price without rounding, regardless of the Quote Type or Quote Decimals specified on the given Future Option contract. Any trade price based calculations, including Nominal and relevant pricer measures, will use the full decimals of the trade price.

10.2 Sample Future Swap Trade

From the Calypso Navigator, navigate to **Trade > Money Market > Interest Rate Futures**.

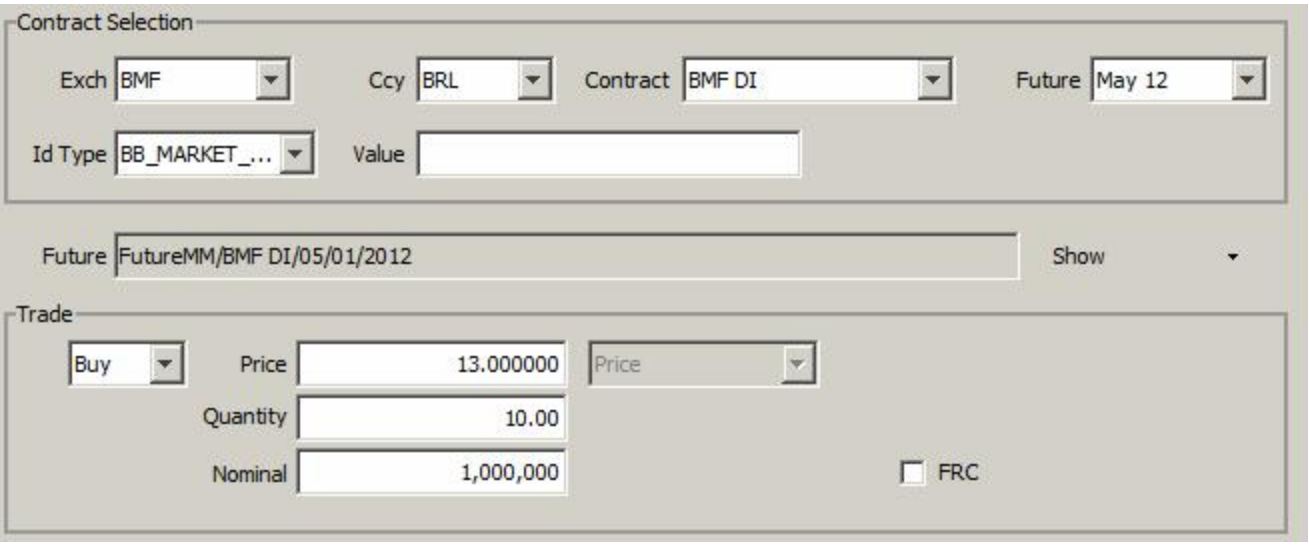
The Future Swap trade is used for both the FutureSwap and FutureSwapPerpetual products.



10.3 Sample BRL Future Trade

From the Calypso Navigator, navigate to **Trade > Money Market > Interest Rate Futures**.

This is used for the standard Brazilian future on CDI.



NPV is calculated using 100,000/(1+r)^(nwd/252).

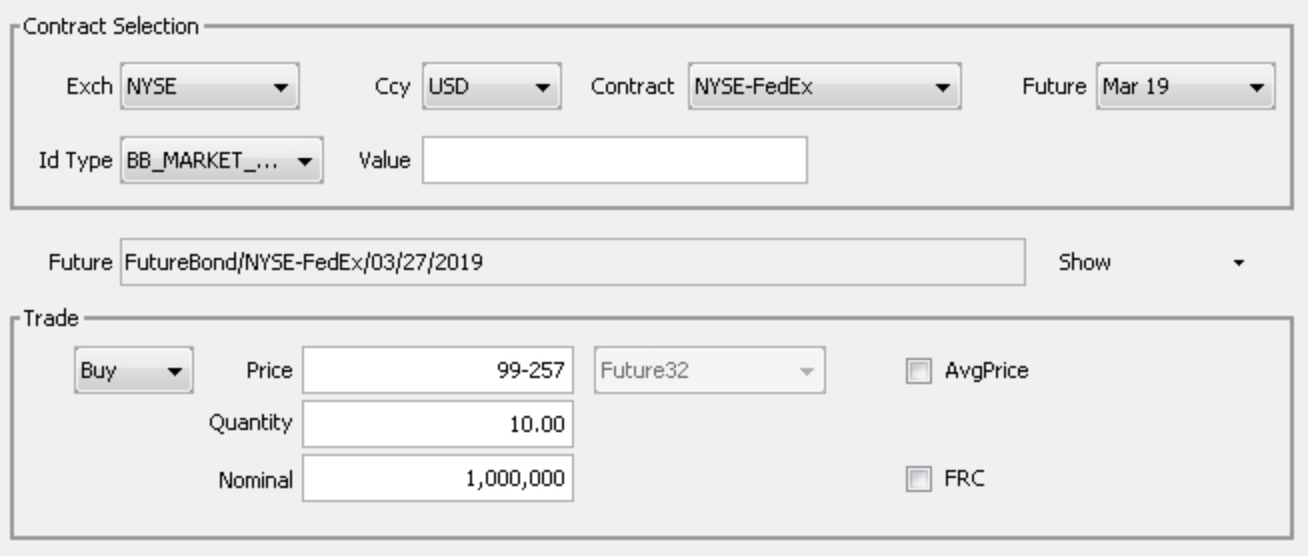
Future_From_Quote=False: Trade Price=Yield=Price (pricer measure), and is used for NPV calculation.

Future_From_Quote=True: Yield=Price (Pricer measure) represents the future quote saved in quote set which is used for NPV calculation.

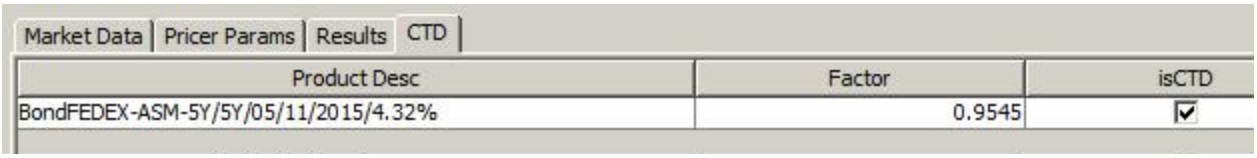
Pricer measure DELTA_01 represents PVBP by specifying Min Move(Tick)=0.001 in future contract window.

10.4 Sample Bond Future Trade

From the Calypso Navigator, navigate to **Trade > Fixed Income > Bond Future**.



» You can select the CTD panel in the pricing area to specify cheapest-to-deliver information on the fly.



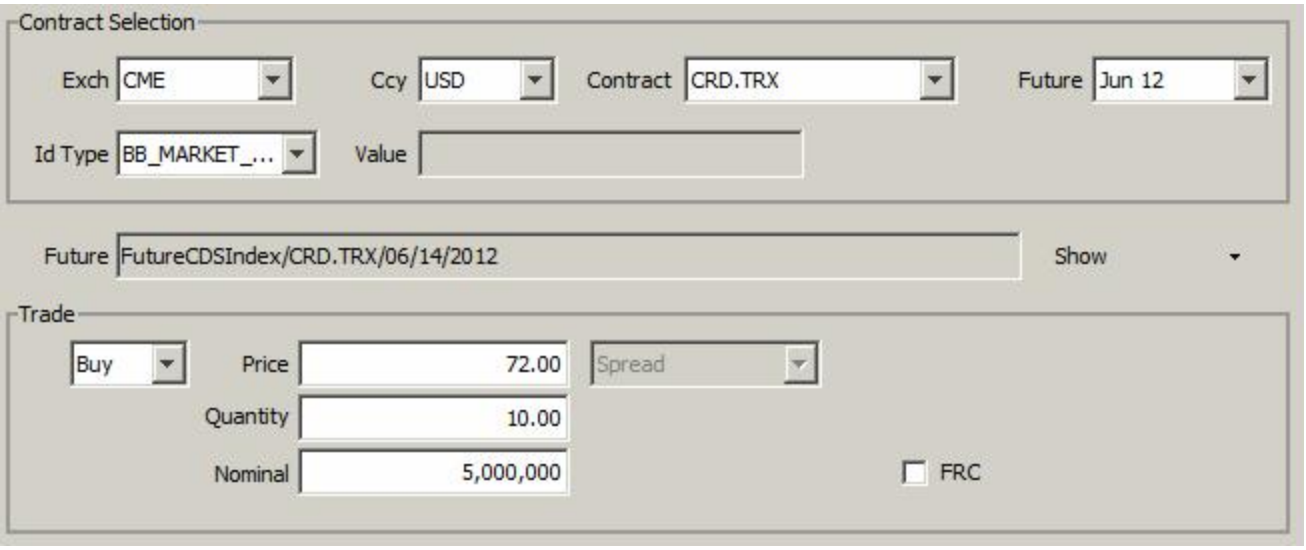
» You can select the AvgPrice checkbox to preserve the trade price without rounding, regardless of the Quote Type or Quote Decimals specified on the given Future Option contract. Any trade price based calculations, including Nominal and relevant pricer measures, will use the full decimals of the trade price.

10.5 Sample Commodity Future Trade

From the Calypso Navigator, navigate to **Trade > Commodities > Listed Future**.

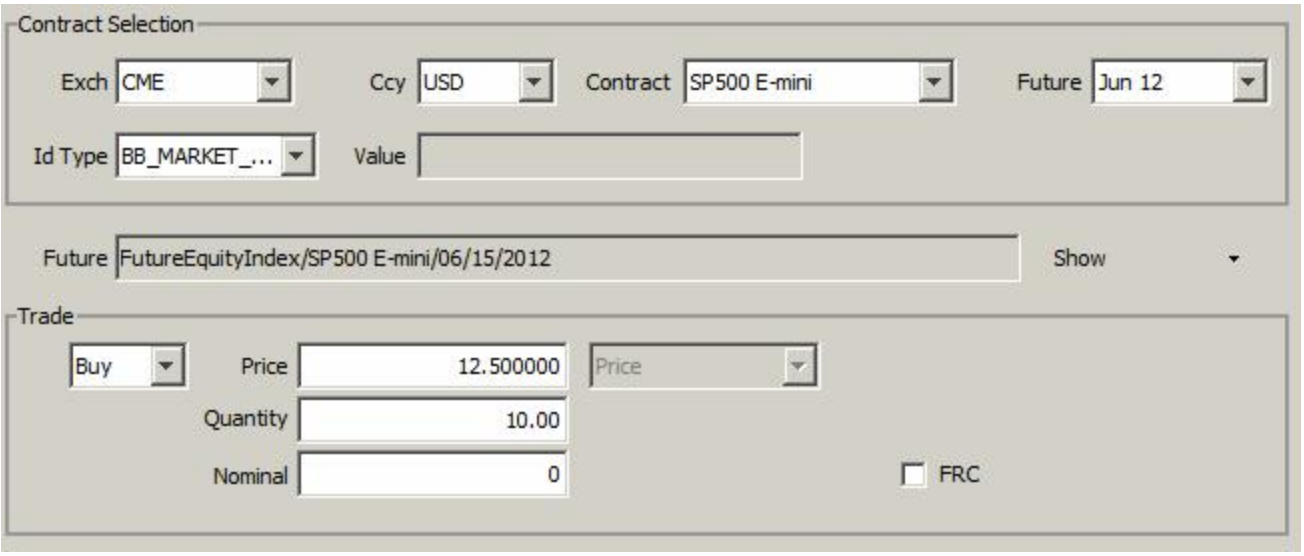
10.6 Sample CDS Index Future Trade

From the Calypso Navigator, navigate to **Trade > Credit Derivatives > Credit Futures**.



10.7 Sample Equity / Equity Index Future Trade

From the Calypso Navigator, navigate to **Trade > Equity > Stock/Index Futures**.

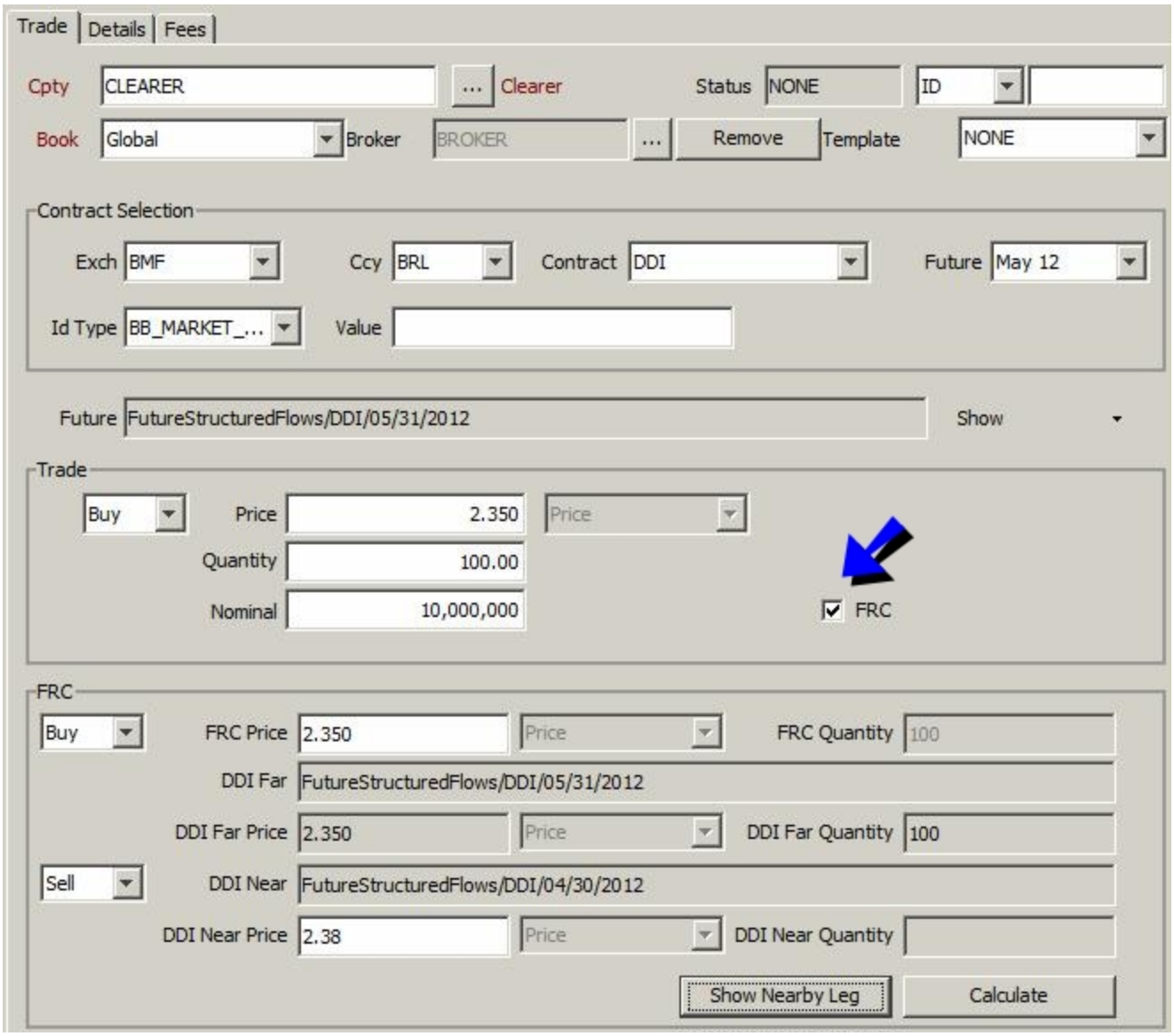


10.8 Sample Structured Flows Future Trade

Structured flows are exotic legs - This can be used for defining Brazilian DDI futures.

The DDI Future can be traded as a standard future trade or as an FRC trade.

An FRC future is a future with two legs.



- Check the FRC checkbox to define the second leg.
- You can enter the FRC Price and DDI Near Price as needed, or click **Calculate** to compute the theoretical price.
- You can click **Show Nearby Leg** to view the details of the second leg.

Pricing

The DDI futures should use PricerFutureMMSpecific.

10.9 Fields Details

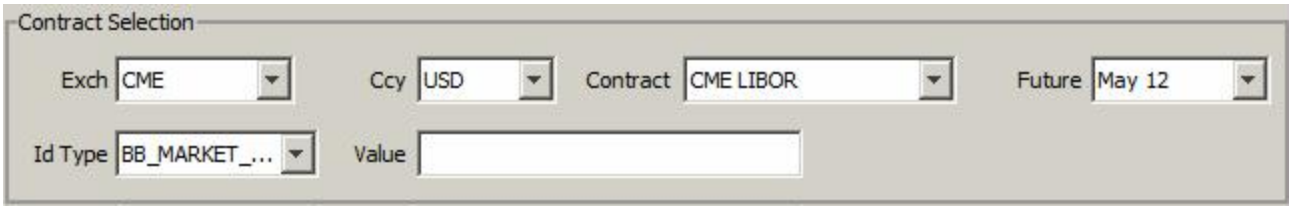
Trade Details

Fields	Description
Role/Cpty	The first two fields of the worksheet identify the trade counterparty: legal entity and role. The role of the trade counterparty for a future trade should be set to Clearer. You can either choose **Utilities > Set Default Role** to set the default role to Clearer, or double-click the CounterParty label and select the role Clearer. Then select a legal entity of role Clearer. 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. ***Automatic Fees*** You can define automatic fees for the Clearer. Define the fee types with the default calculator FeeGrid – Define a fee grid – Set the rule AutomaticFees on a trade workflow transition (for example PENDING – AUTHORIZED – VERIFIED). Sample fees – Automatic fees are created upon saving the trade. 
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 setup 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.
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.
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.

Type	Date	Start Date	End Date	Currency	Amount	Legal Entity	Pay/Rec	Known Date	Method	Input	External Id	Role
BRK	07/31/2007	07/25/2007	07/25/2007	USD	300	Futures Broker	PAY		FeeGrid	15	9159	Broker
Execution Fee	07/25/2007	07/25/2007	07/25/2007	USD	160	Futures Clearer	PAY		FeeGrid	8	9197	Clearer
Clearing Fee	07/25/2007	07/25/2007	07/25/2007	USD	240	Futures Clearer	PAY		FeeGrid	12	9160	Clearer

Fields	Description
Broker	You can select a broker after you have selected the contract. Click ... to select a broker. A broker is a legal entity of role Broker. ***Automatic Fees*** You can define automatic fees for the Broker. Define the fee BRK with the default calculator FeeGrid – Define a fee grid – Set the rule AutomaticFees on a trade workflow transition (for example PENDING – AUTHORIZED – VERIFIED).
Template	You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.

Contract Selection



Fields	Description
Exch Ccy Contract Future	A future product is uniquely identified by an exchange, a currency, a contract name, and an expiration month. Select an exchange, a currency, a contract name, and the window displays the first available future product on the trade date. The Trade Date of the Future trade is based on the timezone defined in the User Defaults. It converts the Trade Date to the timezone defined in the future contract, and then compares it to the Last Trading Date. The Future field displays a list of future products using the Future Name Month and DateFormat attribute defined in the contract. Future products are created using **Configuration > Listed Derivatives > Future Contracts** from the Calypso Navigator (menu action `refdata.FutureContractWindow`). **[NOTE: For the SwapPerpetual product, the Future expiry property will display the maturity tenor instead of the expiry Month/Year (e.g., 5Y, 7Y, 10Y).]**
Id Type Value	Defaults to the product code selected in the User Defaults, and displays its value if any. The values are set on the Future products. You can select another product code as applicable.

Future

Fields	Description
Future	Displays the description of the selected future product. You can click **Show** to display the product's details. For Structured Flows trades, you can select **Show > Show Underlying Trade** to view details of the structured flow.

Trade

Fields	Description
Buy/Sell	Direction of the trade. Double-click the Buy label to switch to Sell as applicable.
Price	Enter the unit price. The type of price is displayed in the following field. It comes from the future definition.
Quantity	Enter the number of futures and the nominal will be calculated accordingly. Or enter the nominal and the quantity will be calculated accordingly.
Nominal	Enter the nominal and the quantity will be calculated accordingly. Or enter the quantity and the nominal will be calculated accordingly. Depending of the contract size type, the nominal / notional of the futures trades are computed differently. ***Fixed Contract Size*** Nominal = Tick Size * Tick Value * Trade Quantity Current Notional(T) = Tick Size * Tick Value * Future Price(T) * Trade Quantity ***Variable Contract Size*** Nominal = Tick Size * Tick Value * Trade Price * Trade Quantity Current Notional(T) = Tick Size * Tick Value * Future Price(T) * Trade Quantity Where: • Trade Price is the price at which the future is bought or sold, the price entered in the trade. • Future Price(T) is the market price of the future at date T, the future quote.
Asian Fixings	This button is displayed for future commodity trades defined with Asian price fixings. On the underlying future contract, the type is "Commodity" and the pricing fixing "Asian" is selected. Click to display the Asian fixing details.

Fields	Description
AvgPrice (Average Price)	Select the AvgPrice checkbox to preserve the trade price without rounding, regardless of the Quote Type or Quote Decimals specified on the given Future contract. Any trade price based calculations, including Nominal and relevant pricer measures, will use the full decimals of the trade price. Selecting this checkbox populates the "Trade Average Price" trade attribute with the value for the average price.
FRC	Check to capture an FRC trade. ▶ See Sample Structured Flows Future Trade for details.

11. Capturing Future Option Trades

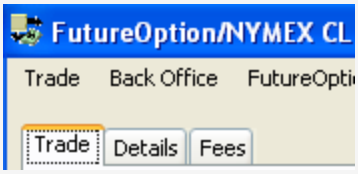
The Future Option trade worksheet is the same for all types of future options.

Prior to trading future options, you need to create future option contracts and generate future option products.

▶ See Defining Future Option Contracts for details.

[NOTE: For Listed Derivatives Clearing, please refer to Calypso ETD Clearing documentation for information on fees and trade capture]

Future Options 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.

[The trade counterparty must be a clearer, so you must have defined a legal entity of role Clearer - See Specifying Clearers for details]

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 appears in the title bar of the trade worksheet, a trade id is assigned to the trade, and the status of the trade is modified according to the workflow configuration.

[NOTE: Even though the subtype is not visible on the trade window, the subtype is set to the contract name]

Pricing a Trade

» Click **Price** to price the trade or you can hit F4.

» You can choose **Pricing Env > Check** to check if all required pricing data are available in

the Pricing Environment.

- Bond future options require future options quotes, bond quotes, a zero curve, and a BONDFUTURE volatility surface.
- Commodity future options requires the following market data: a zero curve for discounting the cash flows, a commodity forward curve for forecasting the price, a COMMODITY volatility surface. The future price quote is not used in pricing when the FUTURE_FROM_QUOTE pricing parameter is set to false.
- Money Market future options require the following market data: a zero curve for discounting the cashflows, and an MMFUTUTRE volatility surface.

  Note that the pricing parameters NUMBER_OF_TIME_STEPS and USE_CONTROL_VARIATE affect PricerFutureOptionMM.

  If you use, PricerFutureOptionMMBpVol, you need to provide a bp volatility surface (simple or derived), or a transient bp volatility.
- Options on index / dividend futures use a standard black&scholes model using the index / dividend future price (in index points) as input.

  The options on dividend futures are European only.

  You can define a vol surface for the underlying product (EquityIndex) of a FutureOptionEquityIndex product in Product Specific for VOL usage.

When pricing from quotes (NPV_FROM_QUOTE=true), the volatility depends on the pricing parameter USE_IMPLIED_VOL.

If USE_IMPLIED_VOL is set to true, the system computes the implied volatility of the price. In this case, you do not need a volatility surface to price the trade.

The system uses an upper boundary and a lower boundary to find a solution for the price: pricing parameters MAX_IMPLIED_VOL (default is 1000%) and MIN_IMPLIED_VOL (default is -1000%).

If USE_IMPLIED_VOL is set to false, the volatility is retrieved from the volatility surface.

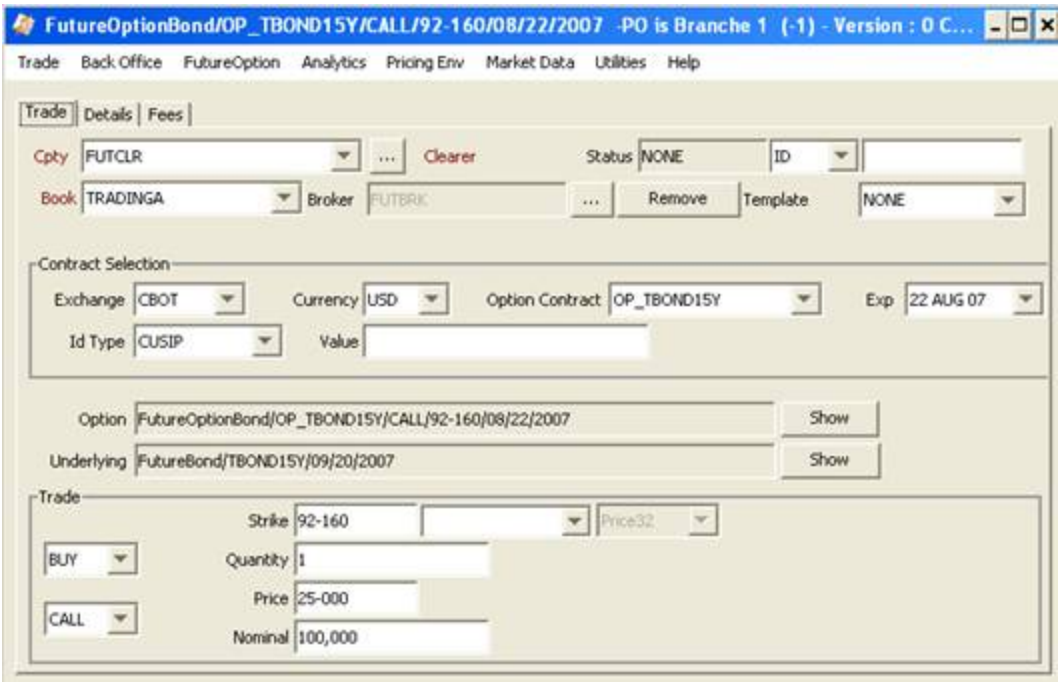
[NOTE: For Greeks computation, if NPV_FROM_QUOTE is set to true, USE_IMPLIED_VOL must be set to true as well]

Trade Lifecycle

- You can allocate the trade to multiple books using **Back Office > Allocate**
- You can terminate the trade using **Back Office > Terminate**, or terminate cash trades in bulk using **Trade Lifecycle > Termination > Terminate** from the Calypso Navigator
- You can liquidate the trade manually using **Back Office > Manual Liquidation**
- You can exercise the trade using **Trade Lifecycle > Expiration & Exercise > Fut Opt / ETO Exercise** from the Calypso Navigator
- You can compute margin calls on the clearing accounts in real-time or in batch mode

11.1 Sample Bond Future Option Trade

From the Calypso Navigator, navigate to **Trade > Fixed Income > Listed Future Options**.

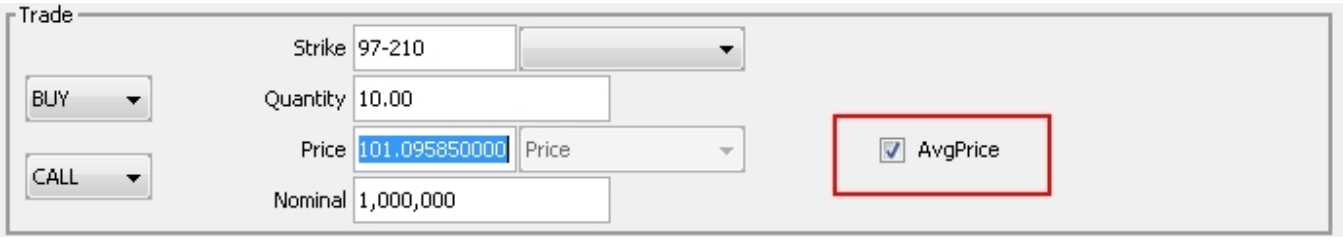


The following pricer measures are calculated.

Pricer Measures	Bond Future Option
NPV Delta Vega Gamma Theta	For European options, the NPV and Greeks are calculated using the Black 76 model. For American options, NPV is calculated using the CRR binomial model is used. Greeks for American options are not available yet. All Greeks are multiplied by the quantity, tick value and nominal of the underlying future.
Price	Equal to calculated NPV.
Break Even	Corresponds to the price of the underlying. The price of the underlying is directly picked up from future quote or calculated. It depends of pricing parameters specified in Pricing Environment (FUTURE_FROM_QUOTE and/or BOND_FROM_QUOTE).
Implied Vol	Implied Volatility.
Notional	Quantity * Contract Size.

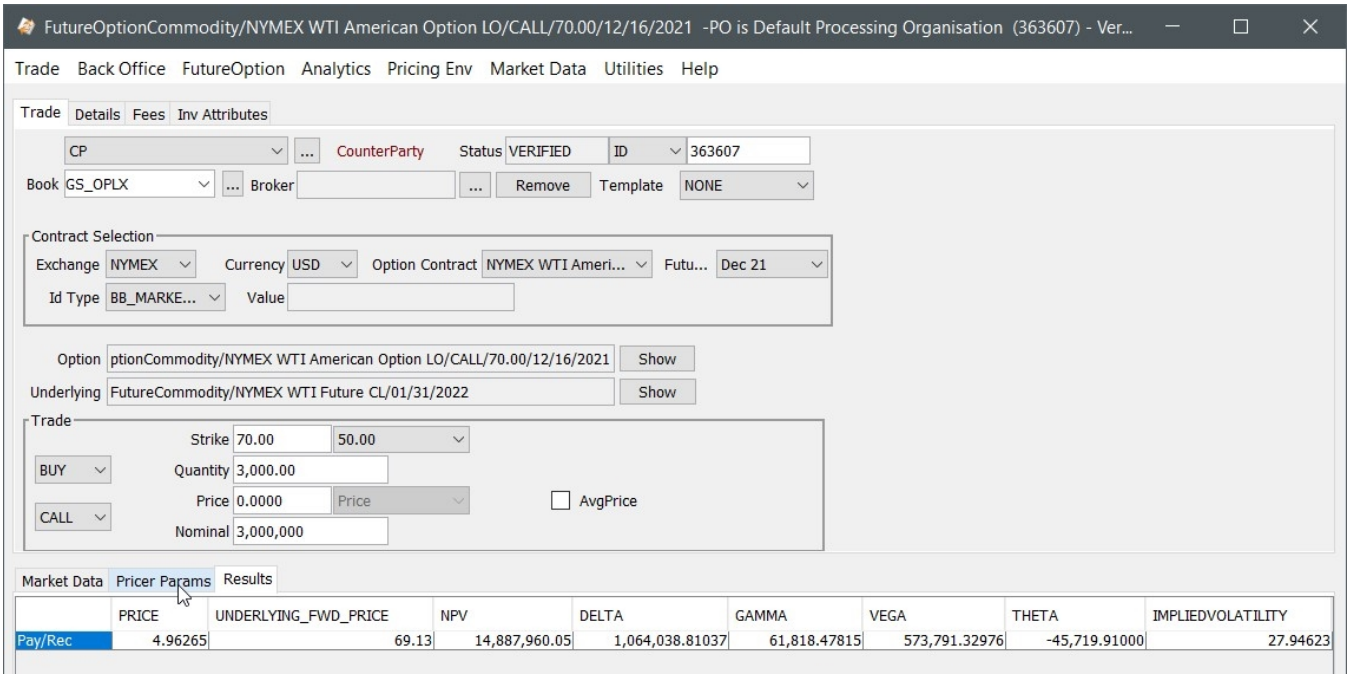
Average Price

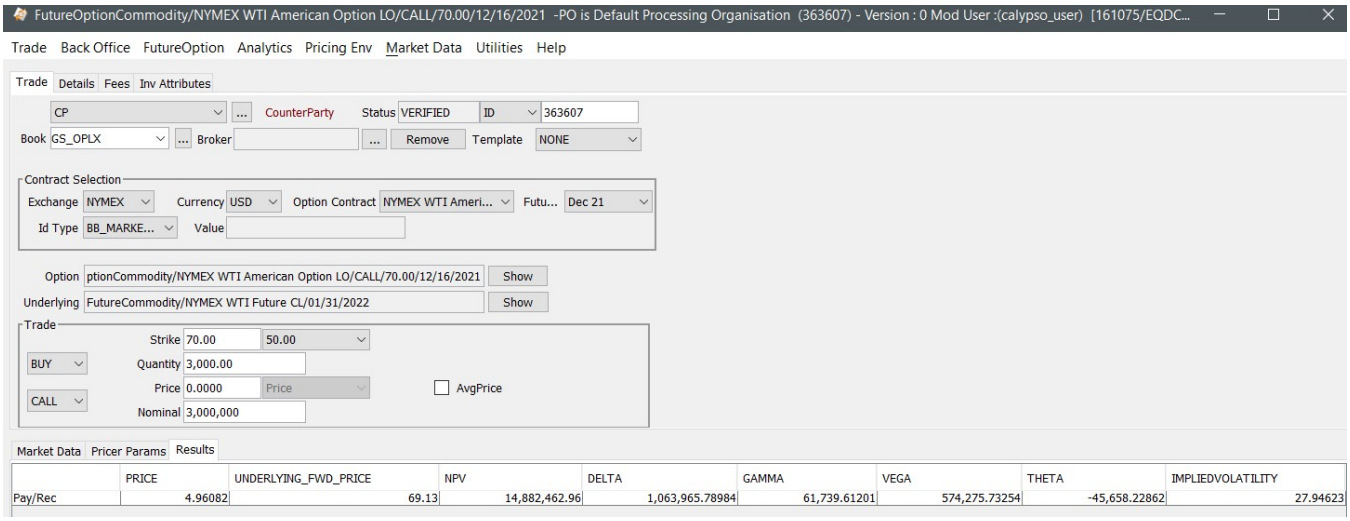
You can select the AvgPrice checkbox to preserve the trade price without rounding, regardless of the Quote Type or Quote Decimals specified on the given Future Option contract. Any trade price based calculations, including Nominal and relevant pricer measures, will use the full decimals of the trade price.



11.2 Sample Commodity Future Option Trade

From the Calypso Navigator, navigate to **Trade > Commodities > Listed Future Options**.



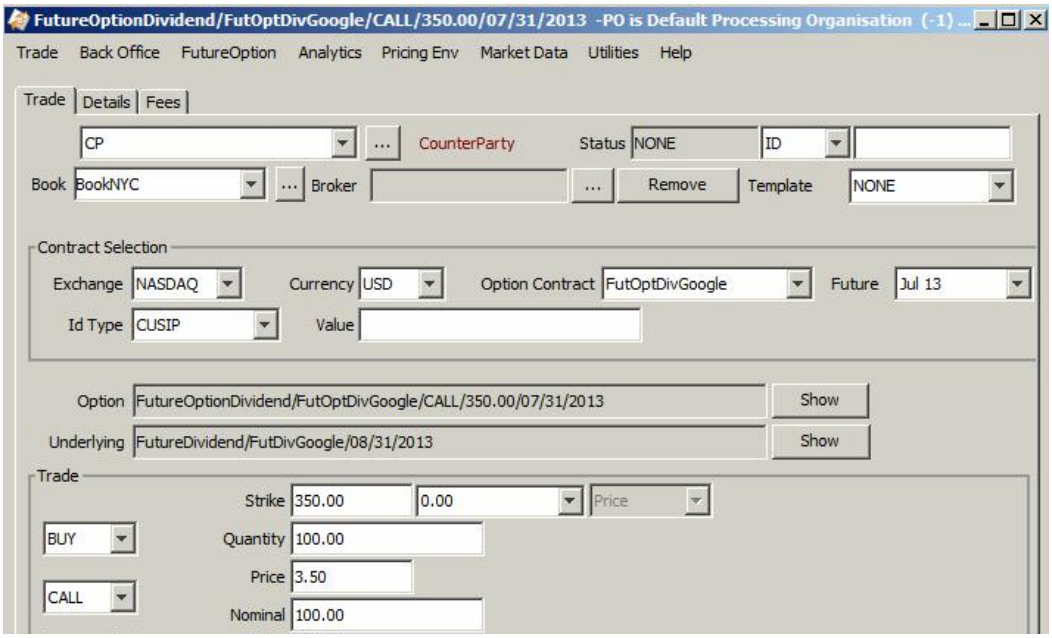


The following pricer measures are calculated.

Pricer Measures	Commodity Future Option
NPV Delta Vega Gamma Theta	For European options, the NPV and Greeks are calculated using the Black 76 model. For American options, NPV is calculated using the CRR binomial model. All Greeks are multiplied by the quantity, tick value and nominal of the underlying future.
Price	Equal to calculated NPV.
Break Even	Corresponds to the price of the underlying. The price of the underlying is directly picked up from quote or calculated. It depends of pricing parameters specified in Pricing Environment used (FUTURE_FROM_QUOTE).
Implied Vol	Implied Volatility.
Notional	Quantity * Contract Size.

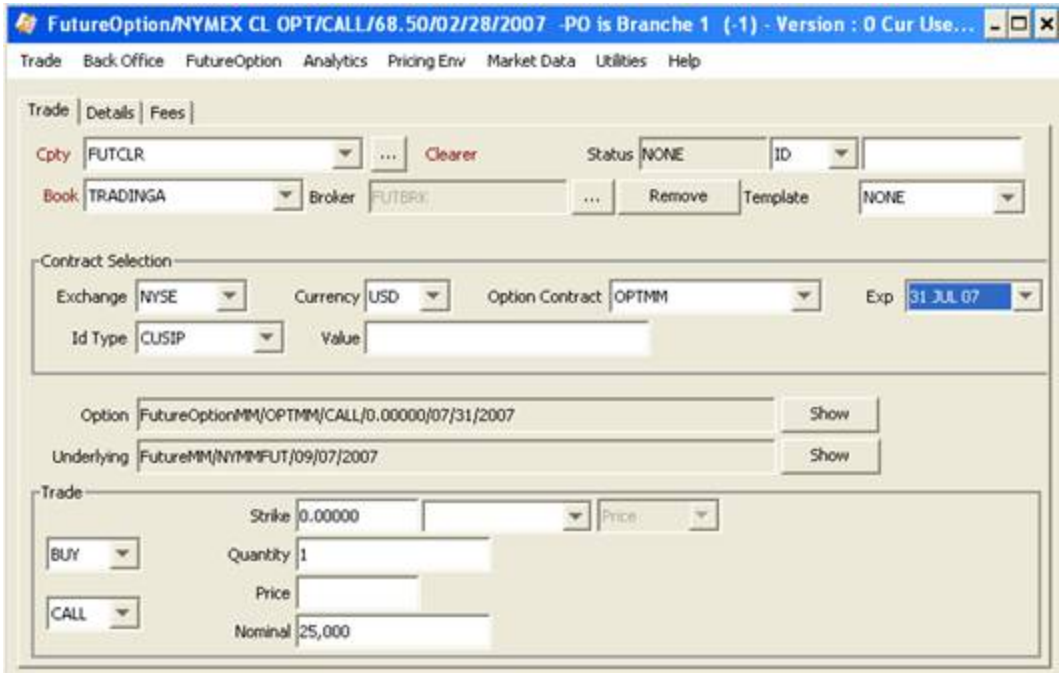
11.3 Sample Dividend Future Option Trade

From the Calypso Navigator, navigate to **Trade > Equity > Listed Future Options**.



11.4 Sample Money Market Future Option Trade

From the Calypso Navigator, navigate to **Trade > Money Market > Interest Rate Future Options**.



The following pricer measures are calculated.

Pricer Measures	MM Future Option
NPV Delta Vega Gamma Theta	For European options, the NPV and Greeks are calculated using the Black 76 model. For American options, NPV is calculated using the CRR binomial model is used. Greeks for American options are not available yet. All Greeks are multiplied by the quantity, tick value and nominal of the underlying future.
Price	Equal to calculated NPV.
Break Even	Corresponds to the price of the underlying. The price of the underlying is directly picked up from quote or calculated. It depends of pricing parameters specified in Pricing Environment used (FUTURE_FROM_QUOTE).
Implied Vol	Implied Volatility.
Notional	Quantity * Contract Size.

11.5 Fields Details

Trade Details

Fields	Description
Role/Cpty	The first two fields of the worksheet identify the trade counterparty: legal entity and role. The role of the trade counterparty for a future trade should be set to Clearer. You can either choose **Utilities > Set Default Role** to set the default role to Clearer, or double-click the CounterParty label and select the role Clearer. Then select a legal entity of role Clearer. 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. ***Automatic Fees*** You can define automatic fees for the Clearer. Define the fee types with the default calculator FeeGrid – Define a fee grid – Set the rule AutomaticFees on a trade workflow step (for example PENDING – AUTHORIZED – VERIFIED). Refer to the *Calypso Futures User Guide* for complete details. Sample fees – Automatic fees are created upon saving the trade. 

Type	Date	Start Date	End Date	Currency	Amount	Legal Entity	Pay/Rec	Known Date	Method	Input	External Id	Role
BRK	07/31/2007	07/25/2007	07/25/2007	USD	300	Futures Broker	PAY		FeeGrid	15	9159	Broker
Execution Fee	07/25/2007	07/25/2007	07/25/2007	USD	160	Futures Clearer	PAY		FeeGrid	8	9197	Clearer
Clearing Fee	07/25/2007	07/25/2007	07/25/2007	USD	240	Futures Clearer	PAY		FeeGrid	12	9160	Clearer

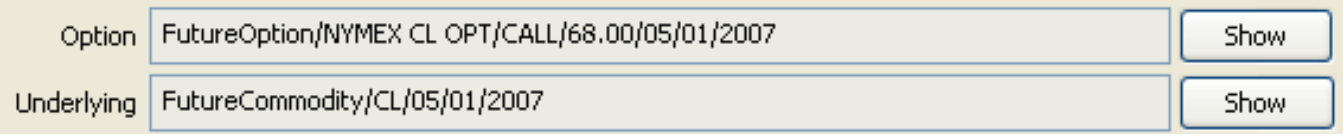
Fields	Description
Book	Trading book to which the trade belongs. Defaults to the book selected in the User Defaults. You can modify as applicable. You can select a book provided you have setup favorite books. Favorite books are specified using **Utilities > Configure Favorite Books**. Otherwise, click ... to select a book. The owner of the book (a processing organization) identifies your side of the trade.
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 can be selected in the User Defaults. The internal reference and external reference can be set in the Details panel of the trade worksheet.
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.
Broker	You can select a broker after you have selected the contract. Click ... to select a broker. A broker is a legal entity of role Broker. ***Automatic Fees*** You can define automatic fees for the Broker. Define the fee BRK with the default calculator FeeGrid – Define a fee grid – Set the rule AutomaticFees on a trade workflow step (for example PENDING – AUTHORIZED – VERIFIED). ▶ See Defining Trading Fees for details.
Template	You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.

Contract Selection

Fields	Description
Exchange	A future option product is uniquely identified by an exchange, a currency, a contract name and an expiration month.

Fields	Description
Currency Option Contract Exp / Future	Select an exchange, a currency, a contract name and an expiration month to select a future option product. Future option products are created using **Configuration > Listed Derivatives > Future Options** from the Calypso Navigator (menu action `product.FutureOptionWindow`).
Id Type Value	Defaults to the product code selected in the User Defaults, and displays its value if any. The values are set on the Future Option products. You can select another product code as applicable.

Products



Fields	Description
Option	Displays the description of the selected future option product. You can click **Show** to display the future option's details.
Underlying	Displays the description of the underlying future of the selected future option product. You can click **Show** to display the future's details.

Trade

Fields	Description
Buy / Sell	Select the direction of the trade from the book's perspective: BUY or SELL.
Call / Put	Select the direction of the option from the book's perspective: CALL or PUT.
Strike	You can select a strike from the future option products already existing, or you can enter a strike, and the corresponding future option product will be created on-the-fly.
Quantity	Enter the number of options and the nominal will be calculated accordingly. Or enter the nominal and the quantity will be calculated accordingly.
Price	Enter the unit price of the option.

Fields	Description
Nominal	Enter the nominal and the quantity will be calculated accordingly. Or enter the quantity and the nominal will be calculated accordingly.
AvgPrice (Average Price)	Select the AvgPrice checkbox to preserve the trade price without rounding, regardless of the Quote Type or Quote Decimals specified on the given Future Option contract. Any trade price based calculations, including Nominal and relevant pricer measures, will use the full decimals of the trade price. Selecting this checkbox populates the "Trade Average Price" trade attribute with the value for the average price.

11.6 Sample Precious Metal / FX Option Trade

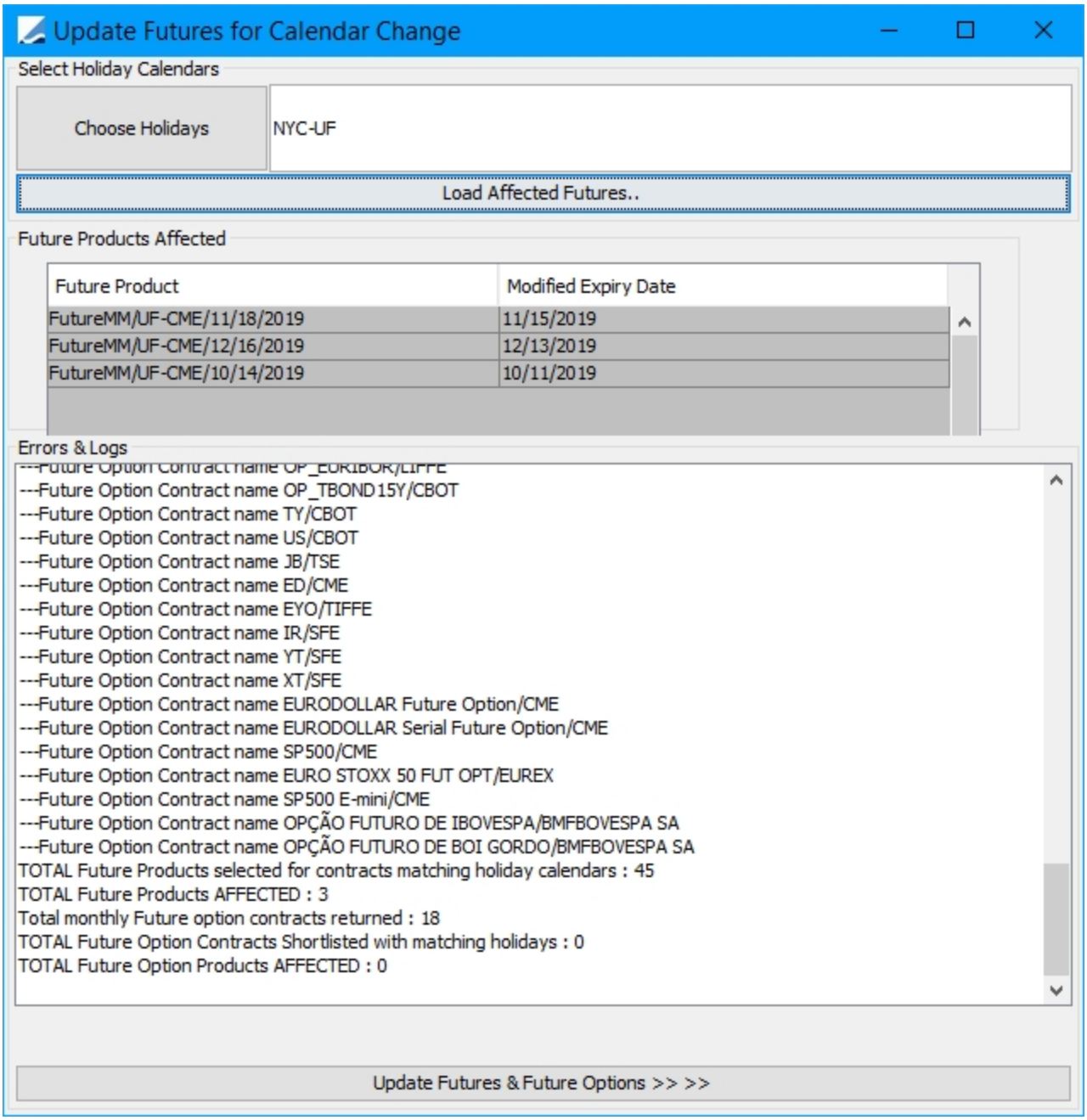
Precious Metal Option trades and FX Option trades are captured using the Pricing Sheet.

▶ Please refer to Calypso Pricing Sheet - "Future Option FX" documentation for details

12. Updating Futures Based on Holiday Calendar Changes

The "Update Futures for Calendar Change" window provides a way to update Future or Future Option trades whose contract specifies a holiday calendar that has been amended. The Update Futures window identifies those products in need of being updated and then carries out the relevant updates to future expiry dates and positions and prevents inconsistencies in the affected positions.

You can add the "Update Futures for Calendar Change" window to Navigator by adding the menu action `util.UpdateFutureWindow`.



Sample Update Futures for Calendar Change window with updated future products and expiry dates

Future Products Supported

The Future and FutureOption products supported for updating are as follows.

- Future Products - FutureMM, FutureBond, FutureEquity, FutureCDSIndex, FutureCommodity, FutureDividend, FutureEquityIndex, FutureFX, FutureMarketIndex, FutureVolatility, FutureSwap, FutureStructuredFlows

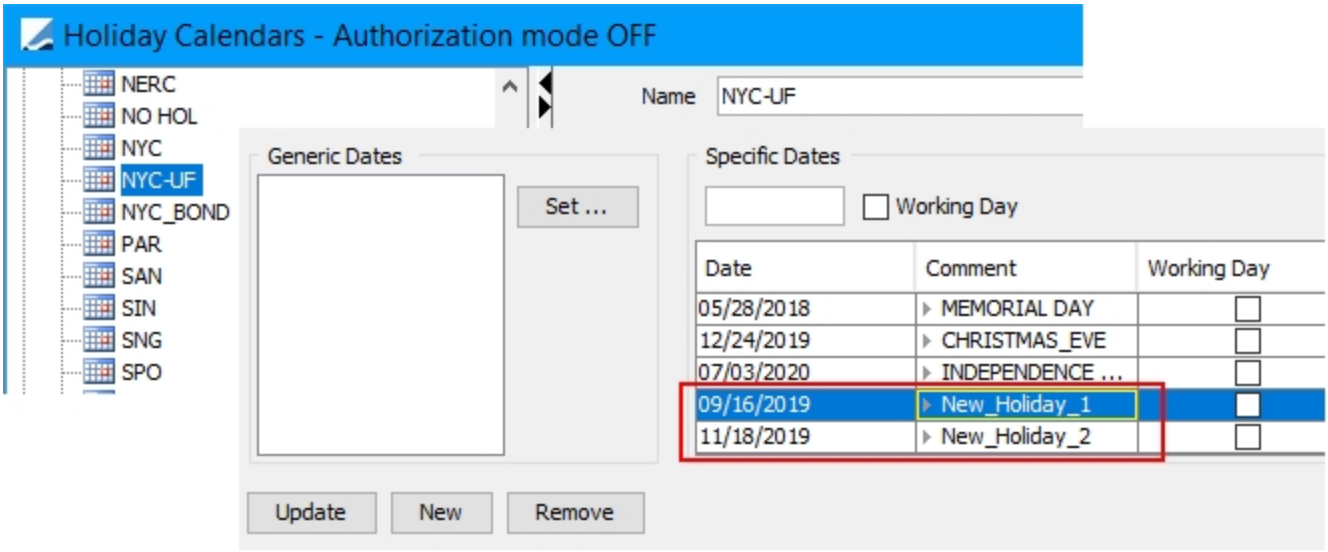
- Future Option Products - FutureOptionMM, FutureOptionBond, FutureOptionEquity, FutureOptionIndex, FutureOptionCommodity, FutureOptionDividend, FutureOptionEquityIndex, FutureOptionFX, FutureOptionVolatility, FutureOptionSwap

12.1 Modifying a Holiday Calendar

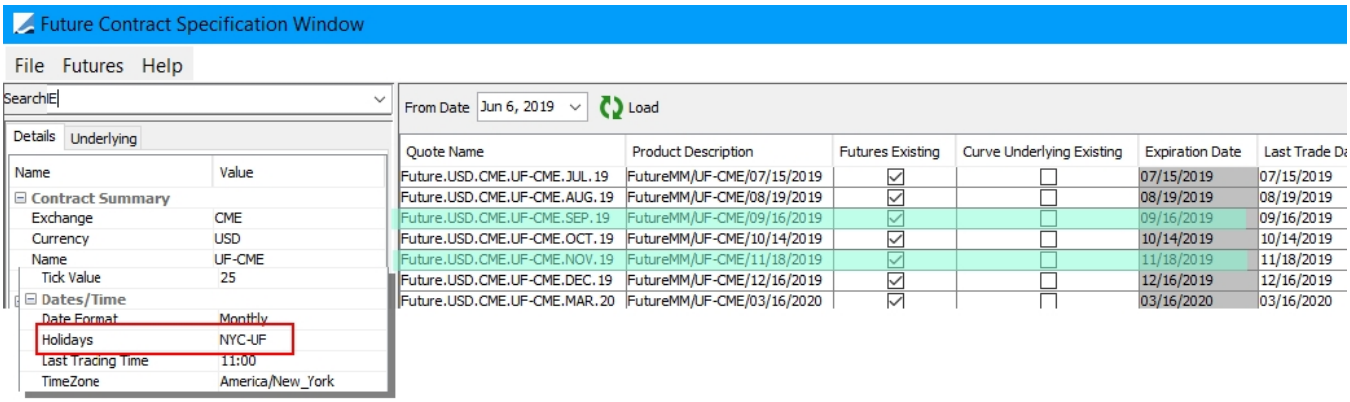
Changes to holiday calendars can be made to holiday rules or specific dates in the calendar.

▶ For details on making changes to holiday calendars, see "Defining Holiday Calendars" in Calypso *Getting Started* documentation.

For the purpose of demonstrating the use of the Update Futures window, two new holidays are added here to the existing holiday calendar "NYC-UF" as an example. After modifying the calendar, update and save it.



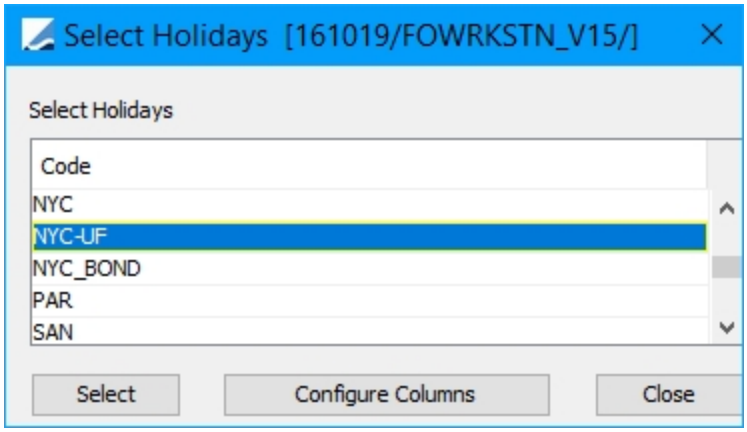
These new holidays coincide with expiration dates for futures associated with a future contract that specifies the modified holiday calendar above.



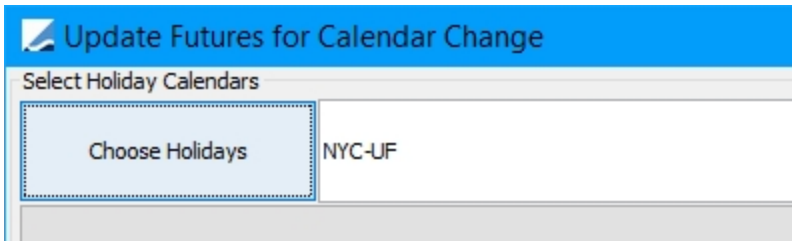
12.2 Updating Futures

To update futures using the "Update Futures for Calendar Change" window, follow the steps below.

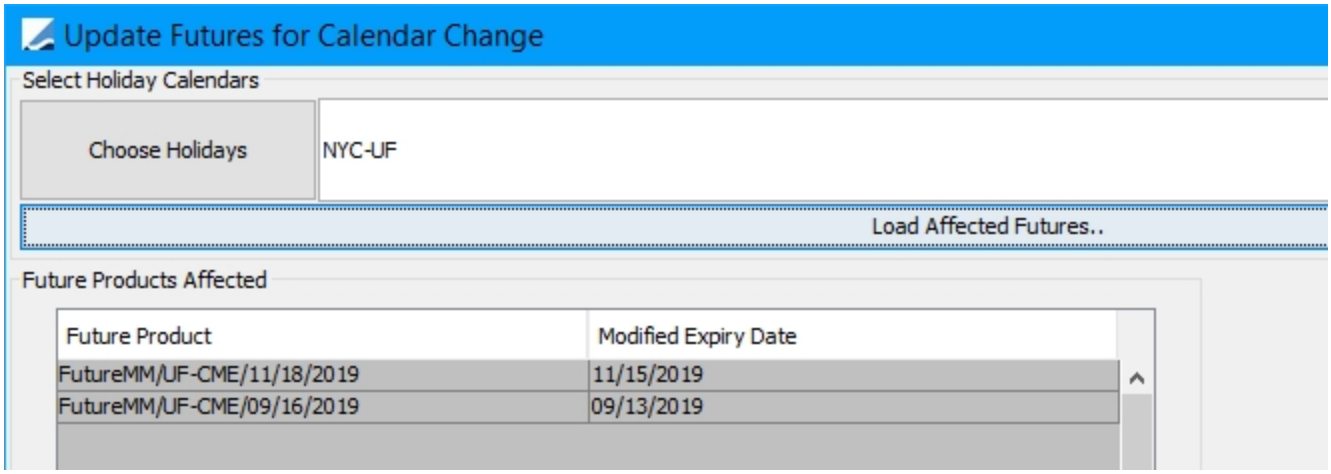
Step 1 - In the "Select Holiday Calendars" section of the window, click **Choose Holidays** to open the "Select Holidays" pop-up window.



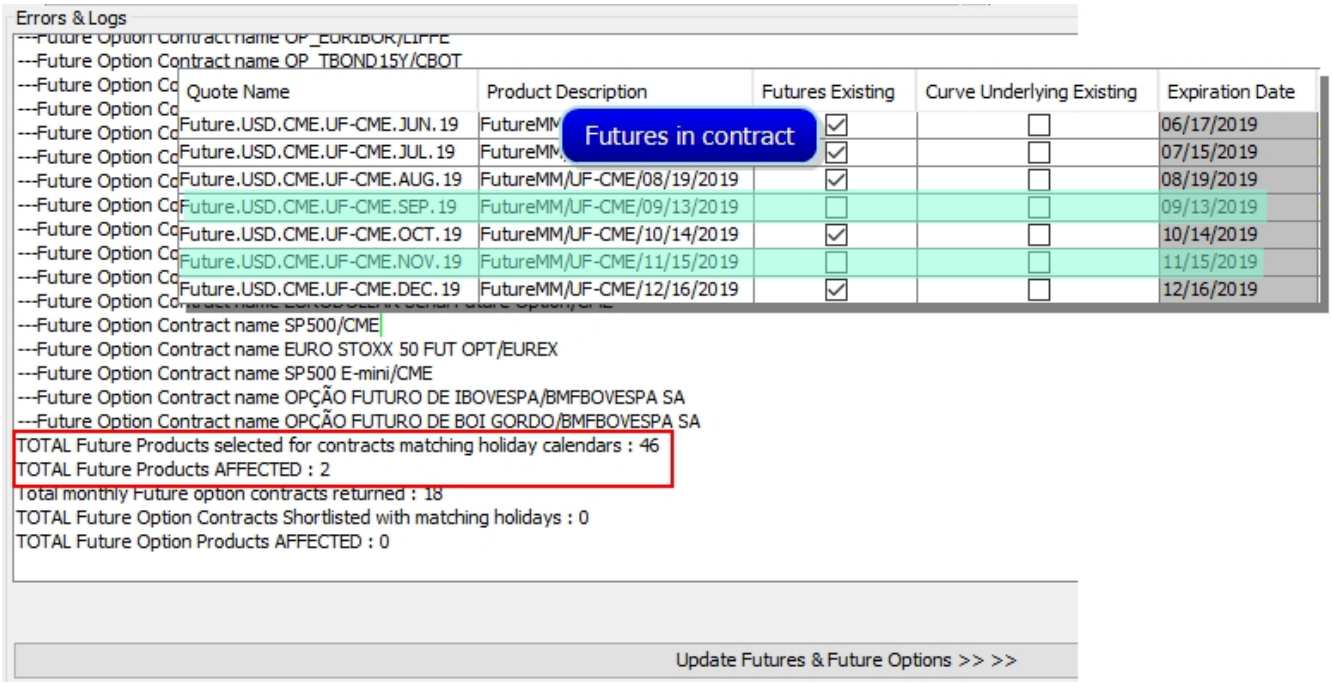
Select the modified holiday calendar(s) as in the example above. You can select one or multiple calendars. Once a calendar is selected and highlighted, click **Select**. The calendar is populated in the Select Holiday Calendars field.



Step 2 - Click **Load Affected Futures** to populate the "Future Products Affected" field. The products affected by modifications to the holiday calendar are listed along with changes to their expiry dates.

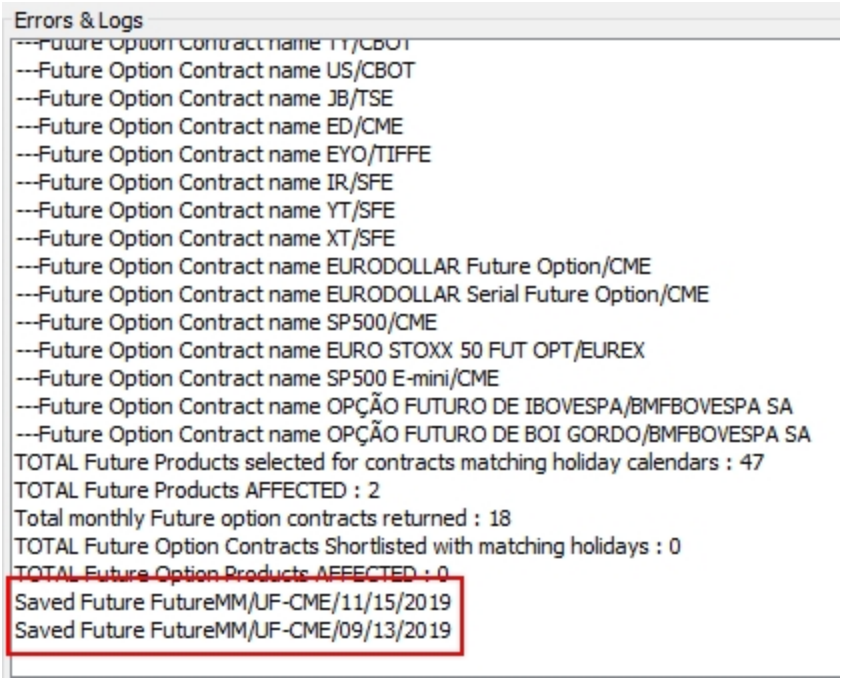


In the "Errors & Logs" field, the total number of futures whose contract uses the modified holiday calendar are displayed along with the total number of futures affected by the holiday calendar changes.



The same changes to expiration dates are reflected in the futures contract.

Step 3 - At the bottom of the window, click **Update Futures & Future Options**. The updated futures are saved with the modified expiration dates.



Results of the updates are confirmed and displayed in the "Errors & Logs" field.

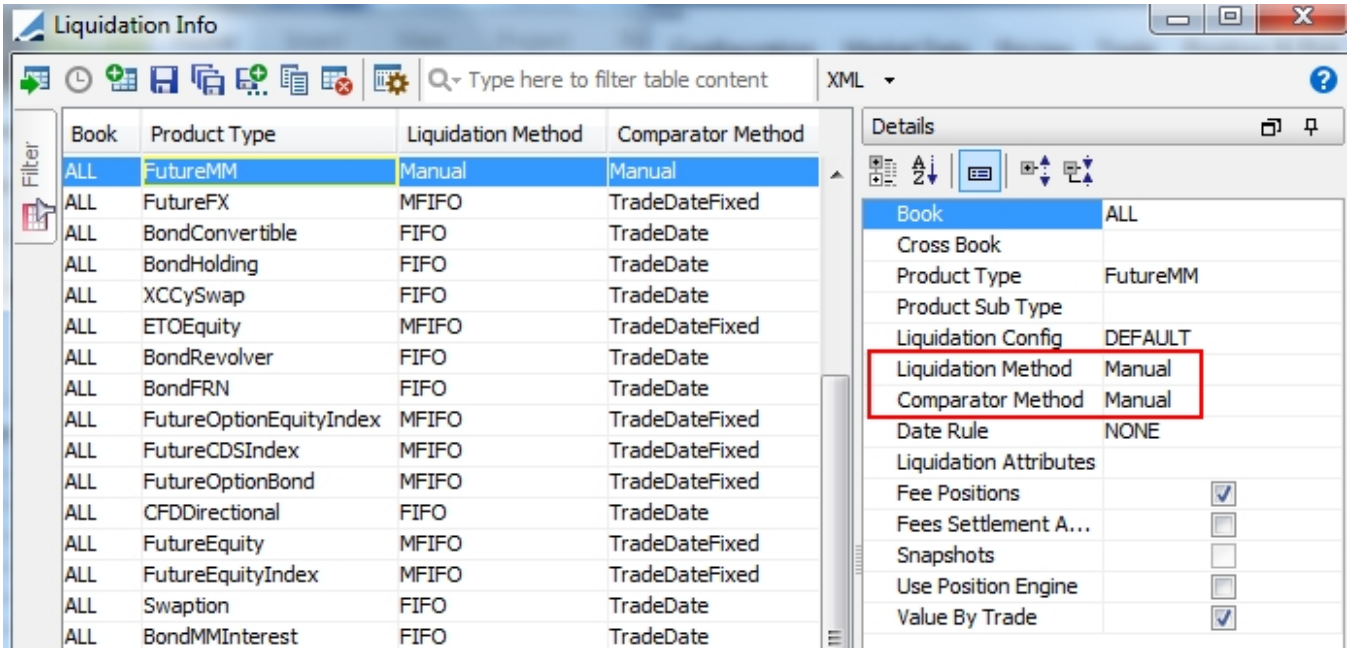
▶ See also "Defining Future Contracts" and "Defining Future Option Contracts" in Calypso *Futures* documentation for trade setup details.

13. Manual Liquidation

If the liquidation method is set to Manual for future and future option trades, you can manually liquidate the trades.

13.1 Liquidation Configuration

Liquidation methods are specified using **Configuration > Books & Bundles > Liquidation Configuration** from the Calypso Navigator (menu action `refdata.LiquidationInfoWindow`).



If the liquidation method is set to Manual, the Liquidation engine will NOT liquidate the trades, however it will compute the open positions by aggregating the trades by book and product, and any liquidation attribute if any – They will be liquidated manually.

If the liquidation method is not set to Manual but MFIFO for example, the Liquidation engine will liquidate the trades automatically (MFIFO - Modified First In First Out liquidation method - Applies the FIFO method on intraday trades first, then the standard FIFO method. The MFIFO method can only be used in conjunction with the comparator method TradeDateFixed).

The account number is set by the liquidation engine on an open position. It searches the SDI attached to the trade transfer rule of type SECURITY, and then retrieves the agent and account number. Note that if the liquidation method is not manual, you have to set the environment property UseAccInFutureExplode to true (or ALWAYS) to set the account number.

It can also be set to NEVER to support not setting the account number of trade open quantities for allowing manual liquidation between two PO accounts.

Contract positions are built by book / product / liquidation attribute, however the liquidation is performed by legal entity clearer and account number.

Once the liquidation configuration has been done, you can start the Liquidation engine. The liquidation engine generates LIQUIDATED_POSITION and UNLIQUIDATED_POSITION events for the realized P&L.

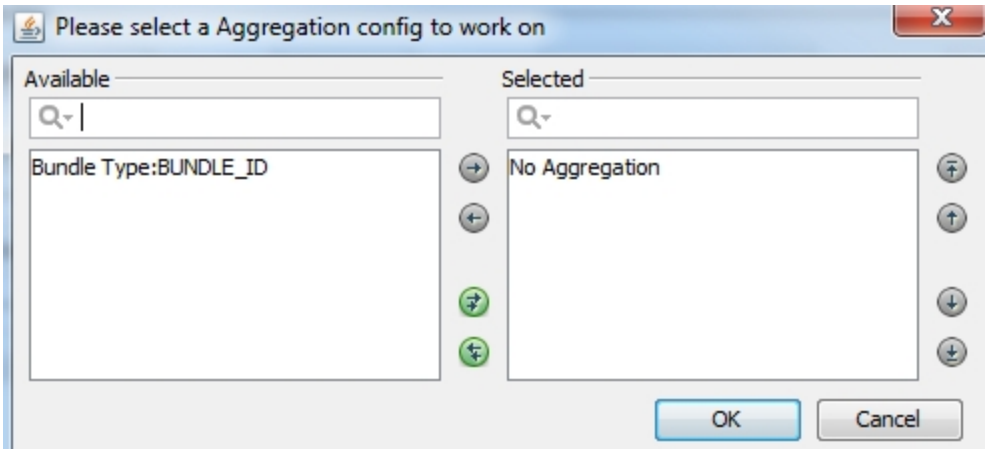
▶ Refer to the Calypso Positions Management documentation for details on starting the Liquidation engine and for more information on the liquidation configuration.

13.2 Manual Liquidation

[NOTE: You can only perform manual liquidation once the open positions have been computed]

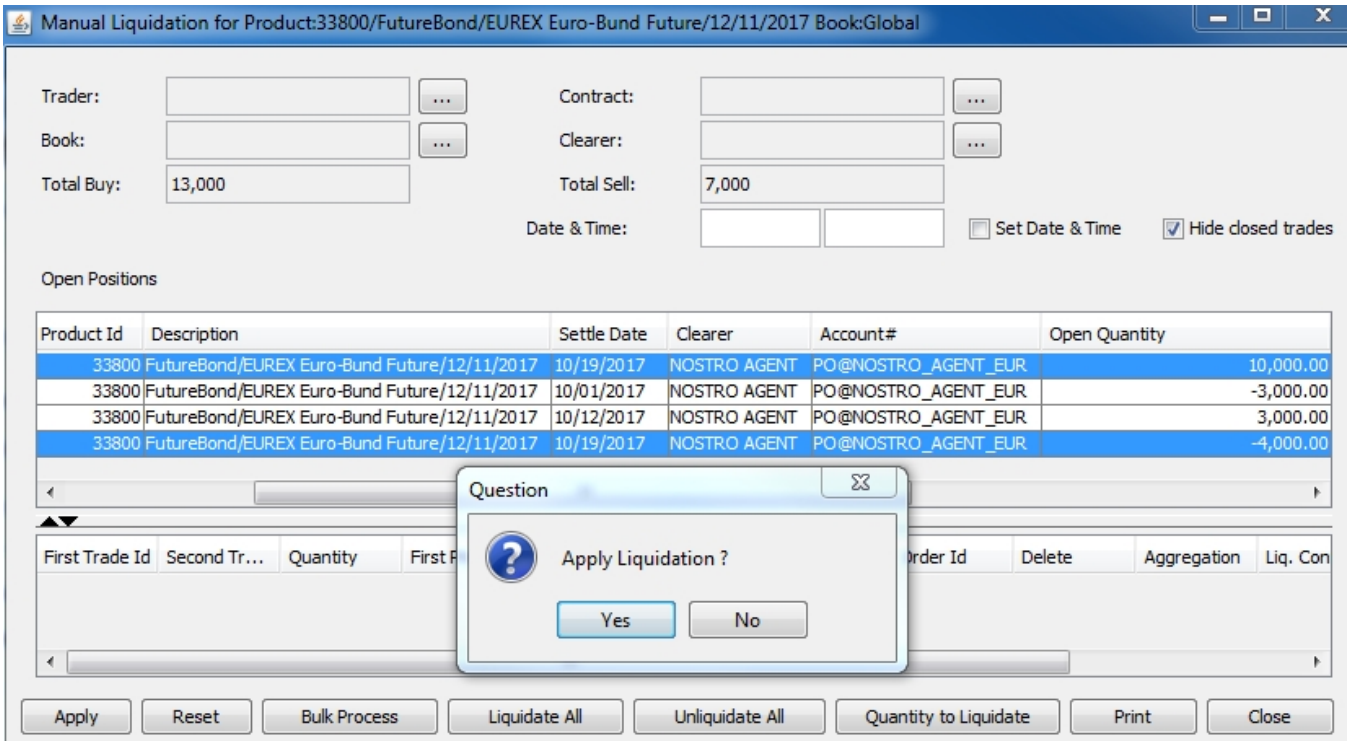
Choose **Back Office > Manual Liquidation** from a future or future option trade worksheet to liquidate the trades manually.

You will be prompted to select an aggregation config if any.



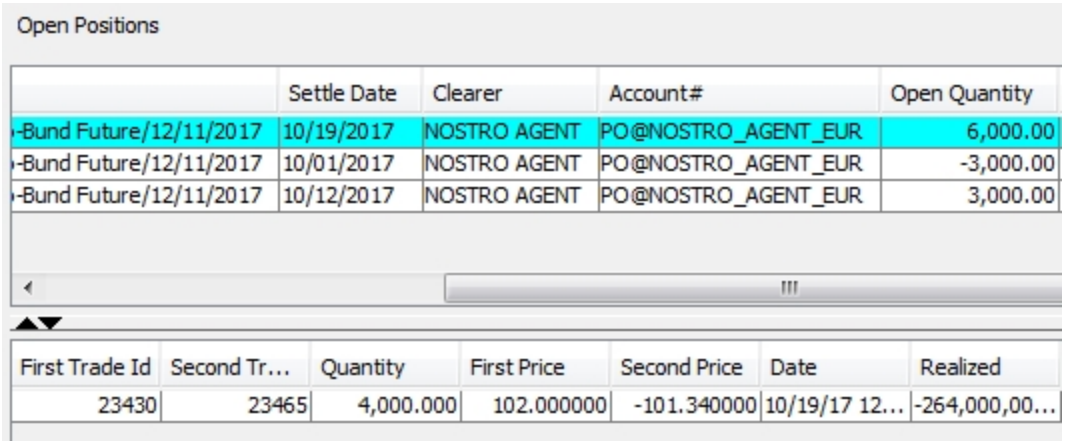
» Select an aggregation config as needed, and/or "No Aggregation" to select positions with no aggregation.

The corresponding positions are loaded into the Manual Liquidation window.



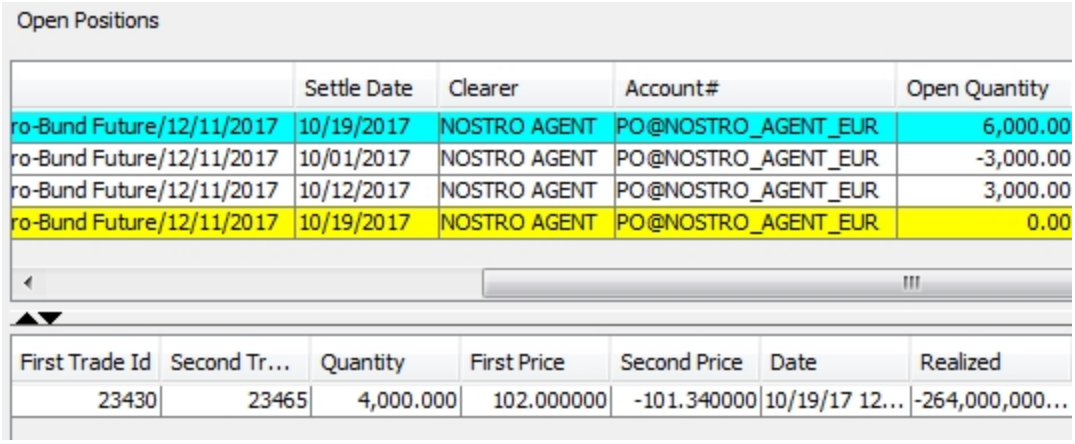
» You can select two open positions to liquidate them together, or click **Liquidate All** to liquidate all open positions. In any case, you will be prompted to confirm the liquidation.

The liquidation will be processed as shown below.



Open positions partially closed are displayed in blue.

Closed trades are hidden by default from the Open Positions - You can clear "Hide closed trades" to display closed trades. Closed trades are displayed in yellow.



» Click **Apply** to save the liquidations.

You can also click **Reset** to undo liquidations that have not yet been saved.

You can define column filtering. When a filter is defined, **Liquidate All** only applies to the filtered positions.

You can click **Quantity to Liquidate** to define the quantity to be liquidated. When a quantity to liquidate is defined, **Liquidate All** only applies to the quantity to liquidate.

To liquidate more than two open positions but not all open positions, check the “Bulk Set-Off” checkbox as applicable and click **Bulk Process** to liquidate the corresponding open positions.

Where the total number of long and short units does not match, the bulk process will leave the residual units on the final contract on a FIFO basis.

To cancel a saved liquidation, you can check the Delete checkbox and click **Apply**, or you can click **Unliquidate All** to cancel all liquidations.

For reference - The field Traded Yield only applies to Bond trades where a yield has been entered with the trade, or Bond trades with quote type Yield. The field is 0 otherwise.

You can also manually liquidate trades using the Positions report - See below.

13.3 Viewing the Positions

From the Calypso Navigator, navigate to **Position & Risk > Position Keeper** (menu action `reporting.PositionKeeperJFrame`).

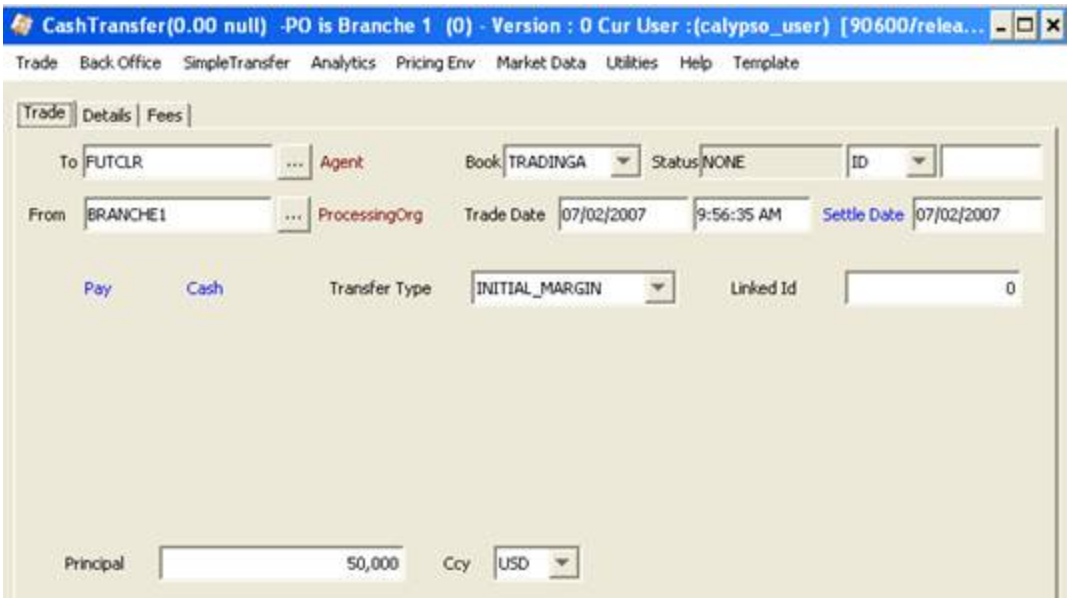
Provided the liquidation is manual, you can right-click multiple positions and choose "Manual Liquidation" to perform manual liquidations between the selected positions.

Troubleshooting Tip: If your positions do not appear, make sure that the selection criteria include your positions under **Tools > Configure Tabs**: Books, Products, Contracts.

14. Capturing Simple Transfers

You can capture simple transfers to make cash movements on the clearing accounts.

From the Calypso Navigator, navigate to **Processing > Accounting Operations > Simple Transfers**.



Only the following types of transfers will be reported on the clearing statement.

Transfer Types	Broker Statement Category
PRINCIPAL	Option Premium
INTEREST	Interest
TAX	Tax
COMMISSION	Commission
OTHER_1	Other 1
OTHER_2	Other 2
OTHER_3	Other 3
NPV	Future option NPV
MARGIN_CALL	Trade Open Equity
REALIZED	Profit & Loss
DEPOSIT	Deposit / withdrawal
WITHDRAWAL	Deposit / withdrawal
INITIAL_MARGIN	Initial Margin

Any unknown flow will fall into the “Other 3” category.

15. Updating Clearing Accounts (Corporate Action Method)

The legacy methods for computing variation margins will be deprecated in an upcoming release. It is recommended to use the scheduled task CLEARING_VM_CALC instead, along with the associated account structure, as described in the Calypso ETD Clearing Setup Guide.

The EOD_BROKER_VALUATION scheduled task allows updating clearing accounts with P&L and margin calls. It is based on positions computed by the Liquidation engine and it generates FUTURE corporate action trades for each Book/Product Id/Clearer/Account. The amounts are attached as fees to the corporate action trades.

15.1 Setup Requirements

Environment Property

Note that if the liquidation method is not manual, you have to set the environment property UseAccInFutureExplode to true to set the account number.

You can also set it to NEVER to support not setting the account number of trade open quantities for allowing manual liquidation between two PO accounts.

Clearer

Make sure that you have setup the market place and the clearer as described in the Futures Setup.

▶ See Defining Clearers and Defining Market Places for details.

Fees

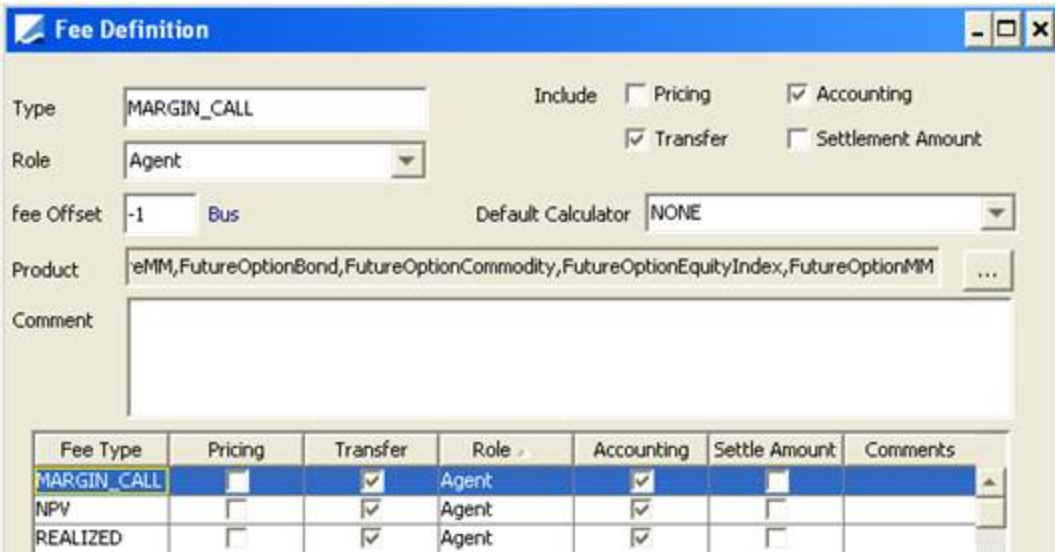
The following fees must be specified in the Fee Definition window.

- MARGIN_CALL — Variation Margin for all non-TSE, non-TIFFE Futures and non-LIFFE Options.
- SUBST_MARGIN — Subtracted Margin for TSE and TIFFE Futures.
- RENEWAL_MARGIN — Renewal Margin for TSE and TIFFE Futures.
- NPV — Net present value of Option Premiums.

Note that for NPV and MARGIN_CALL, the fees created are reversed the following business day.

The INITIAL_MARGIN is not computed and is not automatically reversed. Both the initial margin and initial margin reversal are input as a Simple Transfer. The reversal of the initial margin can be input at the same time as the initial margin.

These fees must be added using the Fee Definition window for the Agent role. There is no need to set a calculator, the scheduled task will compute the fees.

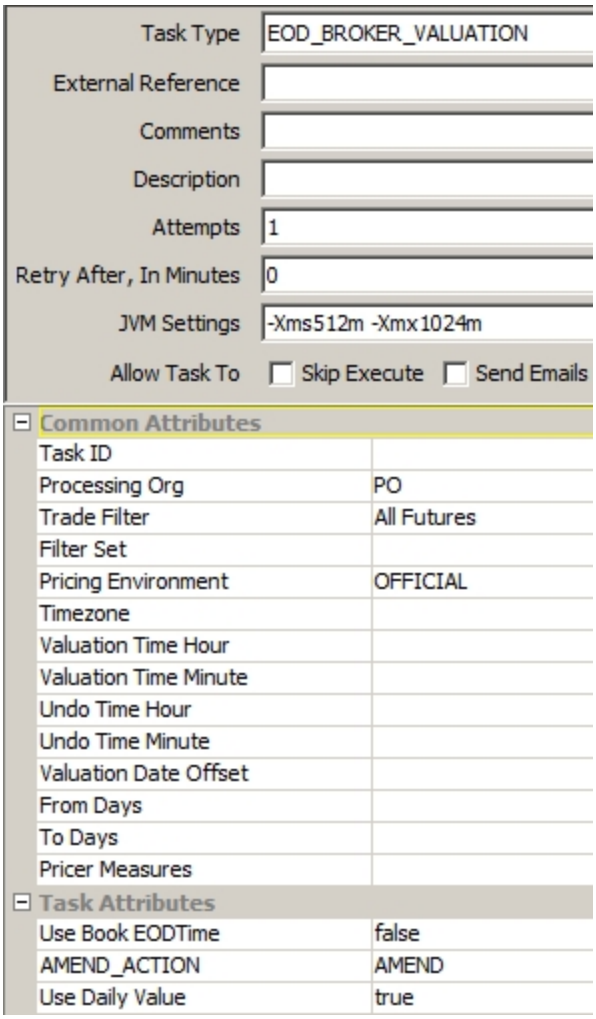


Quotes and Market Data

Make sure that you have quotes and market data for the futures, futures options, and underlying instruments.

15.2 Running the EOD_BROKER_VALUATION Scheduled Task

From the Calypso Navigator, navigate to **Configuration > Scheduled Tasks** (menu action `scheduling.ScheduledTaskListWindow`), and select the type EOD_BROKER_VALUATION.



Task Type	EOD_BROKER_VALUATION
External Reference	
Comments	
Description	
Attempts	1
Retry After, In Minutes	0
JVM Settings	-Xms512m -Xmx1024m
Allow Task To	☐ Skip Execute ☐ Send Emails

Common Attributes	
Task ID	
Processing Org	PO
Trade Filter	All Futures
Filter Set	
Pricing Environment	OFFICIAL
Timezone	
Valuation Time Hour	
Valuation Time Minute	
Undo Time Hour	
Undo Time Minute	
Valuation Date Offset	
From Days	
To Days	
Pricer Measures	
Task Attributes	
Use Book EODTime	false
AMEND_ACTION	AMEND
Use Daily Value	true

Scheduled Task EOD_BROKER_VALUATION

» Select a Trade Filter, Pricing Env and a Processing Org.

Note that the trade filter must contain product types.

» Set the attributes as needed.

- Use Book EOD Time - If set to true, the "valDatetime" is set to the Book EOD Time when loading the positions.
- AMEND_ACTION – Select the action to be applied in case of amendment. The AMEND action is applied by default.
- Use Daily Value - If set to true, the fee RENEWAL_MARGIN is calculated based on the difference between yesterday's quote and today's quote. Otherwise, RENEWAL_MARGIN is calculated based on the difference between today's quote and the original trade price.

» Save the task, and execute it.

15.3 Viewing the Results

You have multiple possibilities to view the results.

You can view the corporate actions trades from the Trade Browser – The fees associated with the corporate actions in the Fee report – The transfers associated with the fees in the Transfer report.

Sample Fee report - In this example, there is no realized P&L, only an open position.

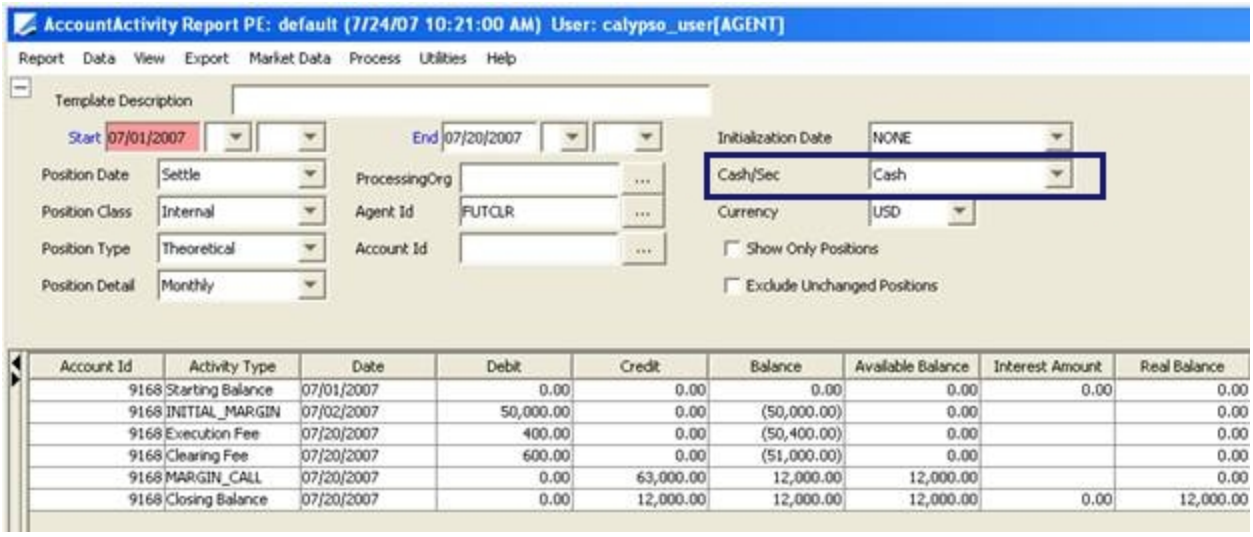
Fee Type	Fee Date	Fee Start Date	Fee End Date	Fee Currency	Fee Amount	Fee Legal En...	Fee Pay/Rec	Trade Id
MARGIN_CALL	07/20/2007	07/20/2007	07/20/2007	USD	63,000.00	FUTCLR	REC	8767
MARGIN_CALL	07/23/2007	07/23/2007	07/23/2007	USD	(63,000.00)	FUTCLR	PAY	8767

The MARGIN_CALL fee is reversed the day after the fee date.

16. Generating a Clearing Statement

You can generate a statement for a clearing account to report all the activity on the account: deals, fees, and margin calls.

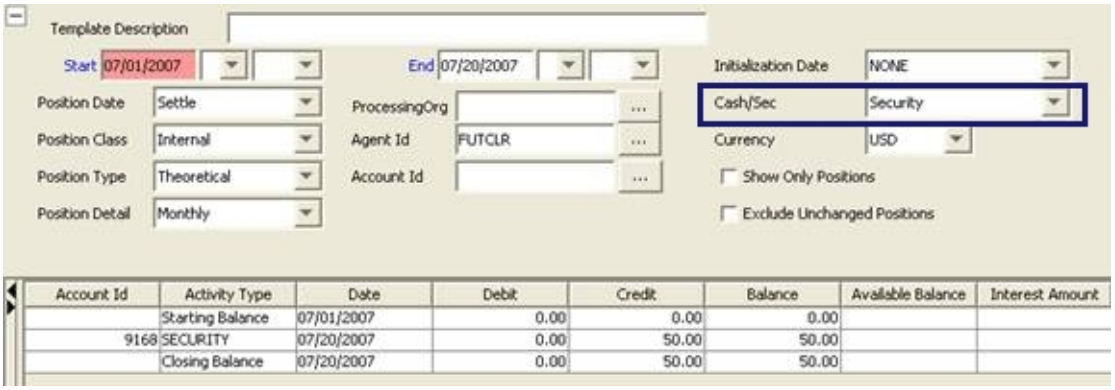
You can also run the Activity Report on the clearing account to view all the activity on the account. From the Calypso Navigator, navigate to **Reports > Nostro / Custodian Positions > Account Activity**.



Account Id	Activity Type	Date	Debit	Credit	Balance	Available Balance	Interest Amount	Real Balance
9168	Starting Balance	07/01/2007	0.00	0.00	0.00	0.00	0.00	0.00
9168	INITIAL_MARGIN	07/02/2007	50,000.00	0.00	(50,000.00)	0.00		0.00
9168	Execution Fee	07/20/2007	400.00	0.00	(50,400.00)	0.00		0.00
9168	Clearing Fee	07/20/2007	600.00	0.00	(51,000.00)	0.00		0.00
9168	MARGIN_CALL	07/20/2007	0.00	63,000.00	12,000.00	12,000.00		0.00
9168	Closing Balance	07/20/2007	0.00	12,000.00	12,000.00	12,000.00	0.00	12,000.00

In this example, there was an initial margin for $50,000.00 entered as a simple transfer, then a future trade with clearing fees and execution fees, and a margin call computed by the EOD_BROKER_VALUATION scheduled task.

The trade is visible on the Security side of the report.

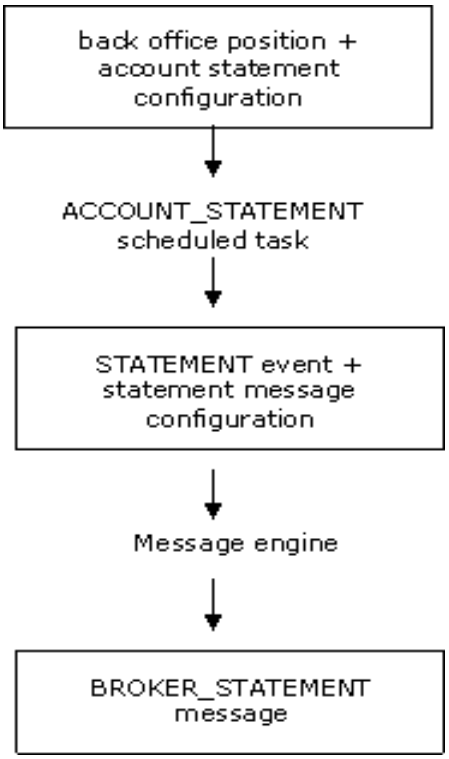


Account Id	Activity Type	Date	Debit	Credit	Balance	Available Balance	Interest Amount
	Starting Balance	07/01/2007	0.00	0.00	0.00		
9168	SECURITY	07/20/2007	0.00	50.00	50.00		
	Closing Balance	07/20/2007	0.00	50.00	50.00		

The activity on the clearing account is computed by the inventory engine based on all the transfers registered on the clearing account (inventory position / back office position).

Refer to the *Calypso Cash Management User Guide* for information on computing inventory positions.

Clearing Statement Generation Flow

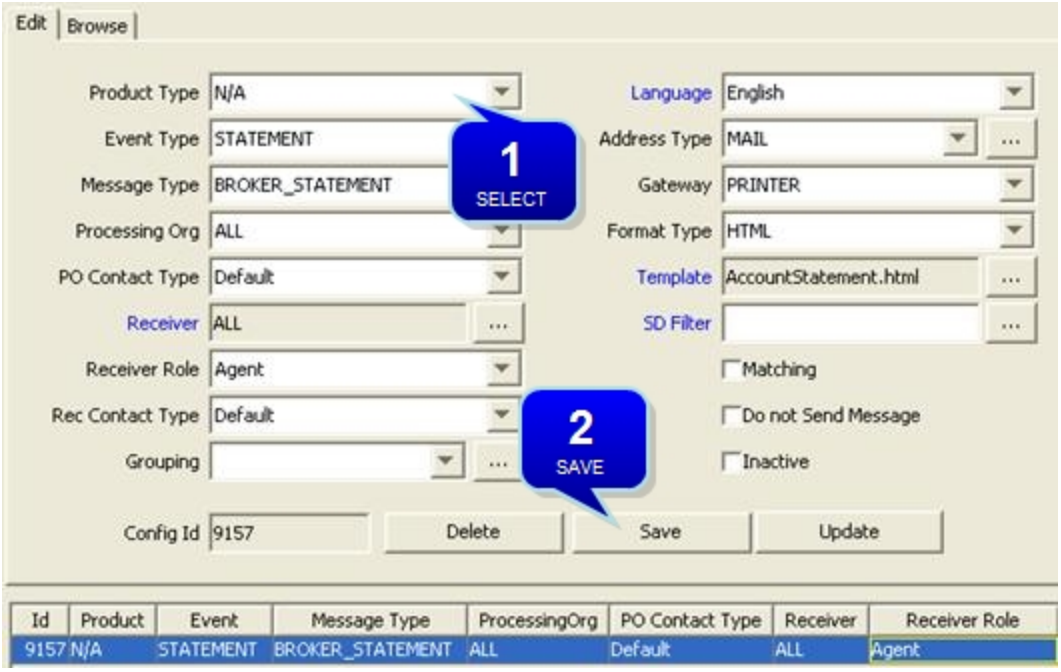


16.1 Setup Requirements

The clearing account requires additional setup in order to generate a statement: you need to indicate the message configuration to be used to generate the statement.

16.1.1 Message Configuration

From the Calypso Navigator, navigate to **Configuration > Messages & Matching > Message Set-Up** (menu action `refdata.AdviceSetupWindow`).



Step 1 - Select the product type "N/A", the event type STATEMENT, the message type BROKER_STATEMENT, and the role Agent.

Fill in the other fields as needed.

Step 2 - Click **Save** to save the configuration.

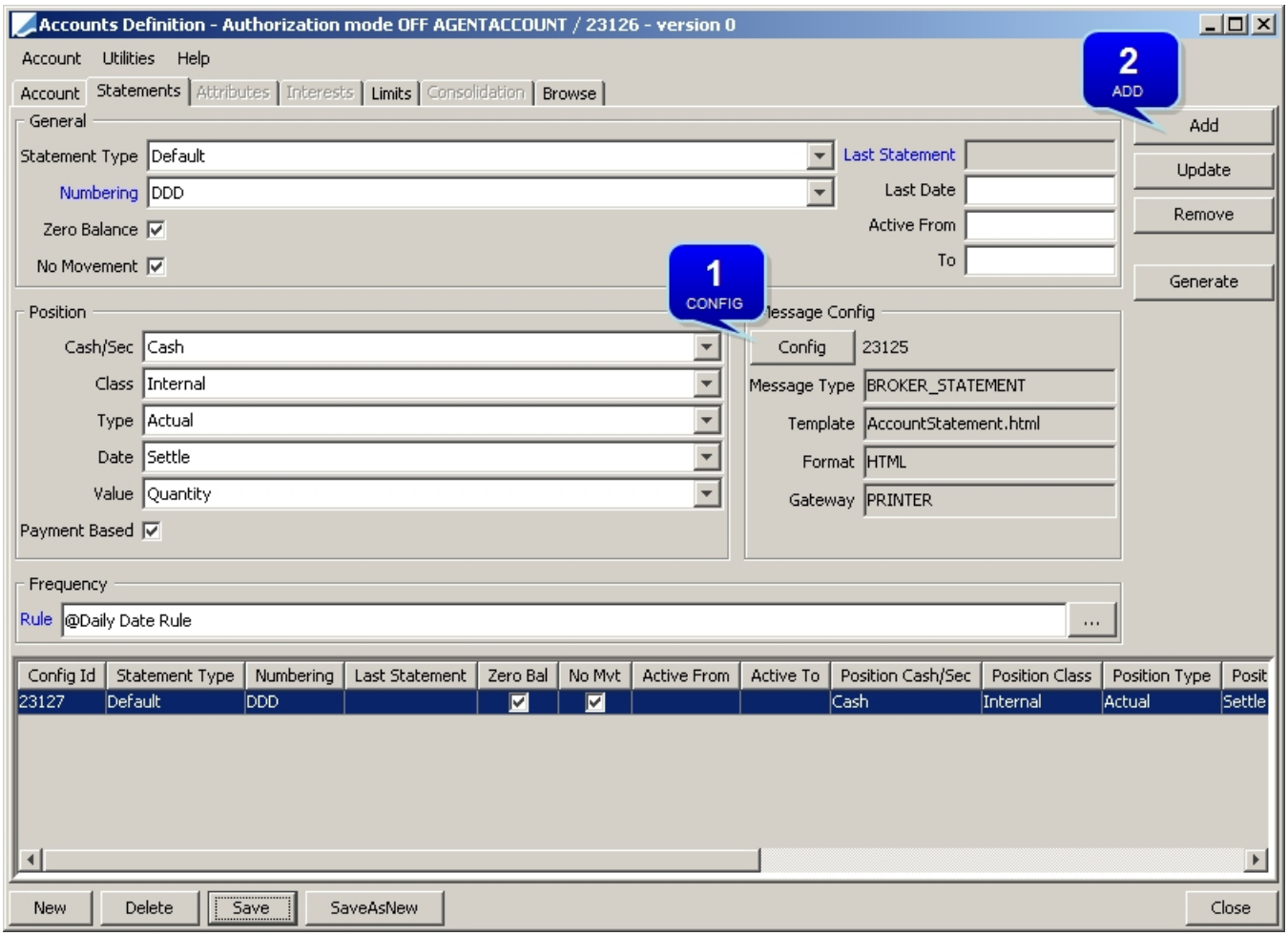
Message Keywords

The following message keywords are specific to the message type BROKER_STATEMENT.

Keyword Names	Description
ACCOUNT_OWNER	First Name and Last Name of the Legal Entity Contact.
ACCOUNT_NAME	Account Name.
PREV_STATEMENT_DATE	Previous Statement Date.
STATEMENT_DATE	Statement Date.
STATEMENT_CURRENCY	Statement Currency.
STATEMENT_DETAILS	TRADE DATE, TRANSFER TYPE, TRANSFER ID, SETTLE_DATE, DEBIT AMOUNT, CREDIT AMOUNT, BALANCE.

16.1.2 Account Configuration

Select the Statements panel to define the statement configuration.

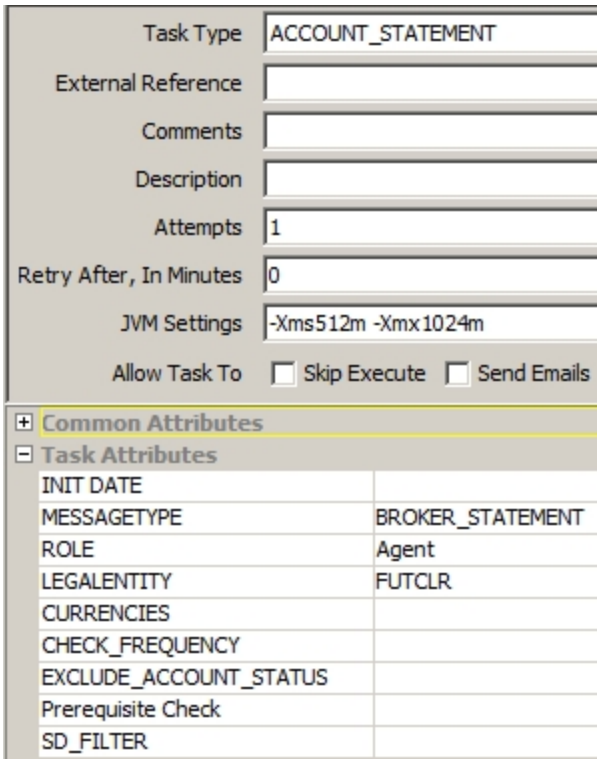


Step 1 - Select the position for which you want to generate the statement and click **Config** in the Message Config area. In the Message Configuration Setup Window that is then displayed, double-click the message configuration of the BROKER_STATEMENT message previously configured. This loads the related data in the Message Config area.

Step 2 - Click **Add** and **Save**. You may want to configure a statement for the Cash position and another statement for the Security position.

16.2 Running the ACCOUNT_STATEMENT Scheduled Task

From the Calypso Navigator, navigate to **Configuration > Scheduled Tasks** (menu action `scheduling.ScheduledTaskListWindow`), and create a scheduled task of type ACCOUNT_STATEMENT.

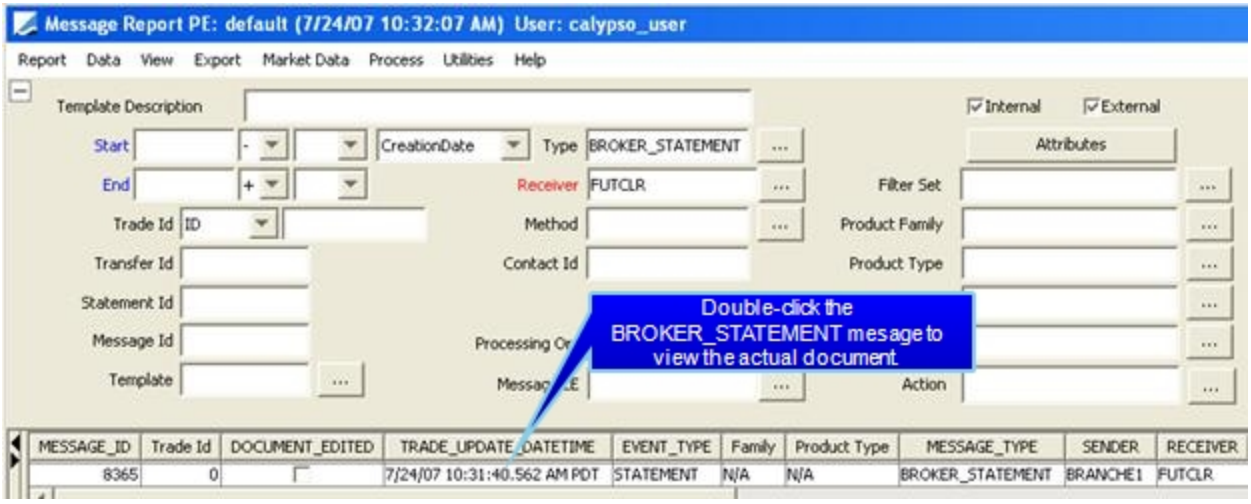


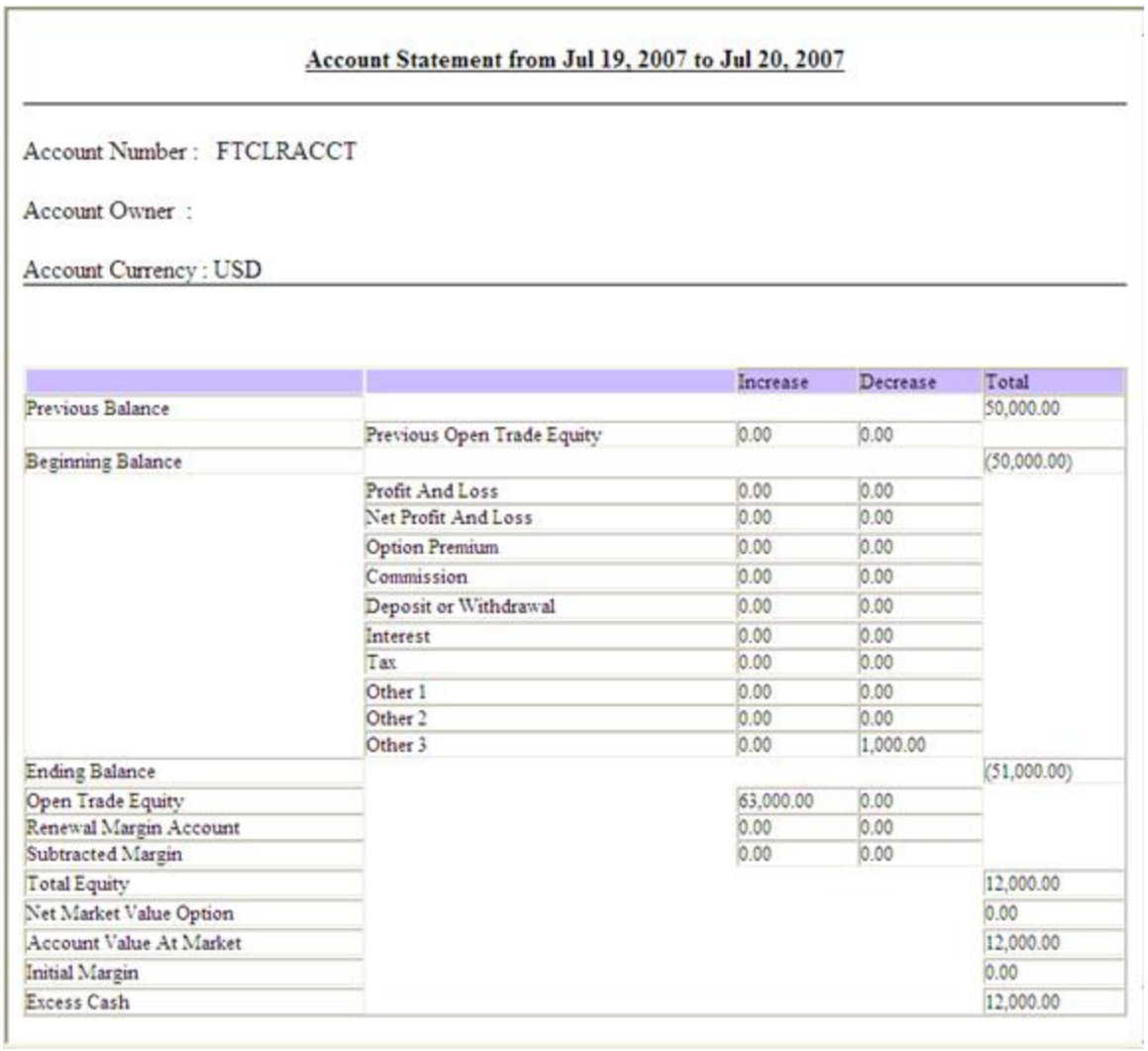
- Select a Trade Filter, Pricing Env and a Processing Org.
- Set the attributes as needed:
  - MESSAGETYPE - BROKER_STATEMENT
  - ROLE - Agent
  - LEGALENTITY - Clearer (FUTCLR in this example)
- Save the scheduled task and execute it as applicable.

The scheduled task generates a STATEMENT event that will be picked up by the message engine in order to generate the BROKER_STATEMENT message. Therefore, the message engine should be running.

16.3 Viewing the Results

Run the Message report.


Message Report PE: default (7/24/07 10:32:07 AM) User: calypso_user
Report
Data
View
Export
Market Data
Process
Utilities
Help
Template Description
Internal
External
Start
CreationDate
Type
BROKER_STATEMENT
Attributes
End
Receiver
FUTCLR
Filter Set
Trade Id
ID
Method
Product Family
Transfer Id
Contact Id
Product Type
Statement Id
Message Id
Template
Action
Double-click the BROKER_STATEMENT mesage to view the actual document
MESSAGE_ID
Trade Id
DOCUMENT_EDITED
TRADE_UPDATE_DATETIME
EVENT_TYPE
Family
Product Type
MESSAGE_TYPE
SENDER
RECEIVER
8365
0
7/24/07 10:31:40.562 AM PDT
STATEMENT
N/A
N/A
BROKER_STATEMENT
BRANCHE1
FUTCLR



Account Statement from Jul 19, 2007 to Jul 20, 2007

Account Number : FTCLRACCT

Account Owner :

Account Currency : USD

		Increase	Decrease	Total
Previous Balance				50,000.00
	Previous Open Trade Equity	0.00	0.00	
Beginning Balance				(50,000.00)
	Profit And Loss	0.00	0.00	
	Net Profit And Loss	0.00	0.00	
	Option Premium	0.00	0.00	
	Commission	0.00	0.00	
	Deposit or Withdrawal	0.00	0.00	
	Interest	0.00	0.00	
	Tax	0.00	0.00	
	Other 1	0.00	0.00	
	Other 2	0.00	0.00	
	Other 3	0.00	1,000.00	
Ending Balance				(51,000.00)
Open Trade Equity		63,000.00	0.00	
Renewal Margin Account		0.00	0.00	
Subtracted Margin		0.00	0.00	
Total Equity				12,000.00
Net Market Value Option				0.00
Account Value At Market				12,000.00
Initial Margin				0.00
Excess Cash				12,000.00

The rows of the statement are populated based on the types of transfers.

Rows	Transfer Type
Previous Open Trade Equity	Sum of MARGIN_CALL transfers prior to statement end date.
Profit And Loss	REALIZED transfers.
Option Premium	PRINCIPAL transfers.
Commission	COMMISSION and EXECUTION transfers.
Deposit or Withdrawal	DEPOSIT and WITHDRAWAL transfers.
Interest	INTEREST transfers.
Tax	TAX transfers.

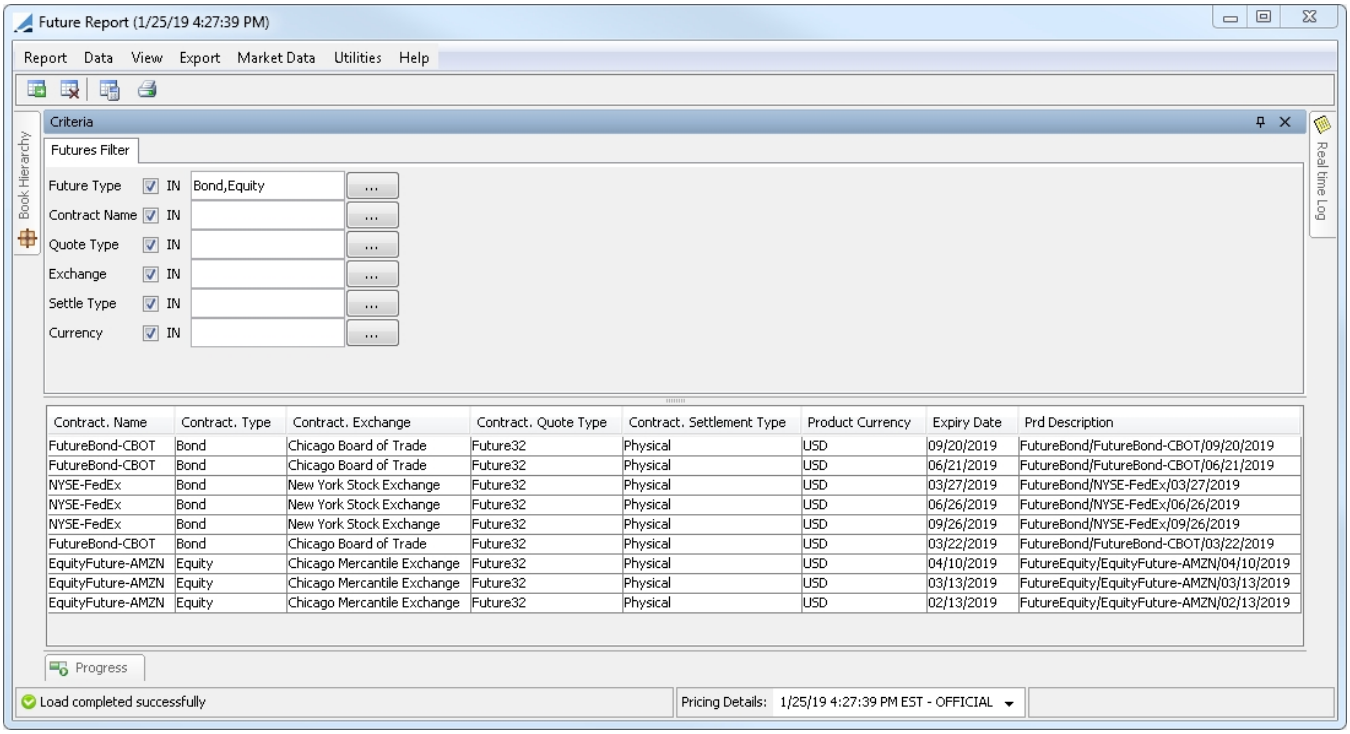
Rows	Transfer Type
Other 1	OTHER1 transfers.
Other 2	OTHER2 transfers.
Other 3	OTHER3 transfers, and all other types of transfers not categorized here.
Open Trade Equity	MARGIN_CALL transfers on statement end date.
Renewal Margin Account	RENEWAL_MARGIN transfers.
Subtracted Margin	SUBST_MARGIN transfers.
Total Equity	= Ending Balance + Open Trade Equity + Renewal Margin Account + Subtracted Margin
Net Market Value Option	NPV transfers.
Account Value At Market	= Total Equity + Net Market Value Option
Initial Margin	INITIAL_MARGIN transfers.
Excess Cash	= Account Value At Market + Initial Margin

17. Future Report

The Future Report provides results for futures and their expiration dates based on the search criteria specified in the filter.

The report is also used as the Future Bond Template for driving data in the Security Position Blotter component in the Front Office Workstation application's Bond Pricing Sheet.

To add the window to Navigator, use the menu action `reporting.ReportWindow$Future`.



Sample Future Report

- Specify search criteria by clicking ... beside each filter option. Criteria include:
  - Future Type - e.g., Bond, Equity.
  - Contract Name - defined in the Future Contract Specification Window.
  - Quote Type - e.g., Future, Future32, Future64.
  - Exchange - exchange where the product is listed.
  - Settle Type - e.g., physical, cash.
  - Currency - opens the Select Currencies window, which allows selection from all currencies in the system.
- Select or clear the IN checkboxes beside the filtering options to determine whether an element specified in the criteria is or is not included in results.

- Click  to load results for the futures.
- 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 that for the Pivot view and the Aggregation view, the print icon is disabled.