Nasdaq Calypso

Equity Derivatives Trading

Version 18

Revision 9.0

April 2025

Approved

Document History

Revision	Published	Summary of Changes
1.0	February 2024	First revision for version 18.
2.0	April 2024	Updates for version 18 monthly release.
3.0	July 2024	Third edition for version 18 monthly release - Updates related to FX Reset Fixing.
4.0	August 2024	Fourth edition for version 18 monthly release - Updates for Bond Exotic note window and added details to capture Issuance Trades. Added Cliquet Multiplicative Equity Structured options.
5.0	September 2024	Fifth edition for version 18 monthly release - Included Override Spot Days.
6.0	October 2024	Sixth edition for version 18 monthly release - Introduced Roll On Day Lag and Apply Roll Lag on Cmp Cashflows.
7.0	December 2024	Seventh edition for version 18 monthly release - Added Start Time for Effective for ESO trades.
8.0	February 2025	Eighth edition for version 18 monthly release - Updated details for Swap settlement currency.
9.0	April 2025	Ninth edition for version 18 monthly release - Added details about Issuance Activity, Exotic Note trades and ELS Stub Tolerance.

This document guides you through the setup and capture of equity derivatives trades.

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1. Overview

Reference Data Specific to EQD Trading

- ADR Products
- Equity Products
- Equity Index Products
- ETO Contracts and Products
- Exotic Notes
- Structured Notes
- Volatility Index Products

Market Data Requirements

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

- Discount and Forecast curves – See **Calypso Navigator > Market Data > Interest Rate Curves > Zero Yield Curve**.
- Dividend curves – See **Calypso Navigator > Market Data > Equity Curves > Dividend Curve**.
- Borrow curves – See **Calypso Navigator > Market Data > Equity Curves > Borrow Curve**.
- EQUITY volatility surfaces – See **Calypso Navigator > Market Data > Volatilities > Volatility Surface**.
- Quotes – See **Calypso Navigator > Market Data > Market Quotes > Quotes**.

Trade Capture

All types of trades are described below.

Trade Lifecycle

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

- Allocation – See **Back Office > Allocate** in the trade window.
- Corporate actions – See **Calypso Navigator > Trade Lifecycle > Corporate Action > Corporate Action**.
- OTC option exercise – See Equity Structured Options for details.
- ETO option exercise – See **Calypso Navigator > Trade Lifecycle > Expiration & Exercise > Future Option / ETO Exercise**.
- Price fixing – See **Calypso Navigator > Trade Lifecycle > Reset > Price Fixing**.
- Termination and partial termination – See **Back Office > Terminate** in the trade window.

- Exotic Settlement Report – Allows viewing trade lifecycle events related to trades based on a pricing script.
- You can perform lifecycle events on Pricing Script trades using **Calypso Navigator > Trade Lifecycle > Pricing Script Products.**

Revision Date	Comment
February 2024	First edition for version 18.
April 2024	Second edition for version 18 monthly release.

2. ADR Product Definition

Securities traded on many exchanges throughout the world can only be traded and settled in other countries in a form that complies with the regulations of that country's market. The purpose of ADRs (American Depository Receipts) or GDRs (Global Depository Receipts) is to represent a security for the local market. Each ADR has its own ISIN code, which is different from the corporation's original equity.

The ADR trade can be transformed into the original equity or switched back to its local form.

2.1 Defining an ADR

To define an ADR product, from Calypso Navigator choose **Configuration > Equity > ADR** (menu action `product.ADRWindow`).

2.1.1 Loading an Existing ADR

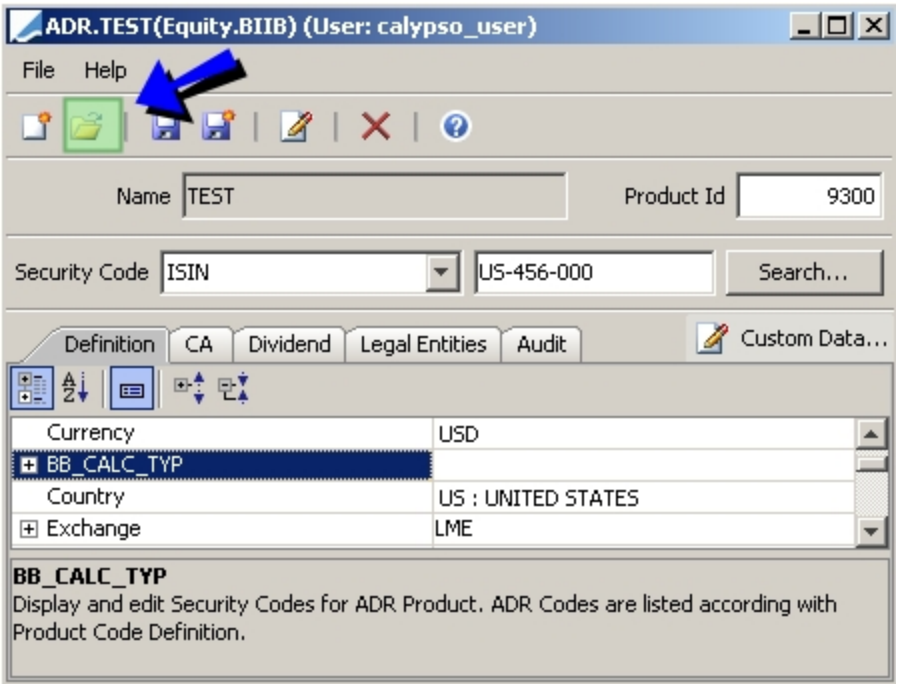
You can load an existing ADR into the ADR window using one of the following methods:

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

Then click **Search** to load the corresponding ADR.

ADR window - Loading an ADR by security code

» You can also click near the top of the window to open the Product Chooser window - Help is available from that window.



ADR window - Loading an ADR

Then modify the fields described below as needed.

2.1.2 Creating a New ADR

» Click and enter the fields described below.

2.1.3 Modifying an ADR Name

» Click to rename the ADR. You will be prompted to enter a new name.

2.1.4 Setting Custom Data

[NOTE: The Custom Data button is deprecated and has no function beginning in Release 12.0]

2.1.5 Saving an ADR

» Click to save your changes. You will be prompted to enter an ADR name.

The system also saves a quote name for the product that is used to enter / retrieve market quotes.

You can also click  to save the ADR as a new product. You will be prompted to enter a new name.

Definition Fields Details

Fields	Description
Name	Name of the ADR specified when the ADR is saved.
Product Id	Unique id given by the system when the ADR is saved.
Corporate	The long name of the corporate entity.
ADR Type	Select the product subtype: ADR or GDR. The subtype is for information purposes and can be used for filtering ADRs.
Currency	Select the product currency.
BB_CALC_TYP	Expand this label to view all the security codes defined for ADR products. You can enter a value for each security code as applicable. You can create new security codes using **Calypso Navigator > Configuration > Product > Code**.
Country	Select the country of the ADR.
Exchange	Select the market place where the ADR is traded. The market place is a legal entity of role MarketPlace. You can expand the Exchange to enter the Spot Days: default number of business days between the trade date and the settlement date. Business days are determined using the holiday calendars of the market place.
Quote Type	Select the type of quote for the ADR: Price, PriceVol, or PriceC (when the price is quoted in the number of cents). You can expand the Quote Type and specify whether to create special quotes or not. » Set "Special Quote = Yes" to allow creating special quote names – You need to select the fixing type in that case – Upon saving the product, the system will save the standard quote name, and "<standard quote name>.<fixing type>" – The special quote is used for fixing and settlement. » Set "Special Quote = No" otherwise. ***Fixing Types*** 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.

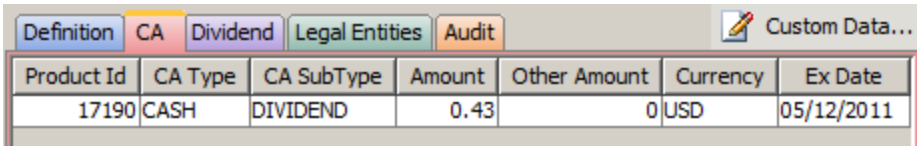
Fields	Description
Issuer	Select the issuer, a legal entity of role Issuer.
Trading Size	Enter the minimum number of ADRs that can be traded.
Trading Country	Select the country where the registry / depository is located.
Total Issued	Enter the number of ADRs that have been issued.
Nominal Decimals	Enter the number of decimal places for nominal prices.
Pay Dividend	Check the Pay Dividend checkbox if the ADR pays a dividend. You can expand Pay Dividend and specify a dividend currency, dividend frequency, and the number of dividend decimals. The Dividend Frequency is used when creating a discrete dividend curve, to generate the projected dividends. The Dividend Date Rule is not currently used.
Underlying	Select the underlying equity.
Active From	Enter the start date of the ADR – It cannot be traded before that date.
Active To	Enter the end data of the ADR – It cannot be traded after that date.
Status	It mostly applies to Bloomberg static data integration but you can use it for your own purposes otherwise. It shows the status of the integration. You can change it as applicable. • NOUPDATE: Do not update from feeds. • PENDING: Automatic changes were made via a feed update. The changes have not yet been verified. • VERIFIED: The data has been verified.
Ratio: ADR Number Ratio: Underlying Number	Enter the number of ADR shares for a number of shares of underlying.
Sponsored	Check the Sponsored checkbox if the ADR is sponsored by an issuer selected by the corporation of the ADR, or uncheck it otherwise. This is for information purposes only.
Fee	Enter the currency of the fee to be paid to the issuer.

Fields	Description
Currency	
Create Cost	Enter the fee amount to be paid when creating the ADR from the underlying equity.
Bust Cost	Enter the fee amount to be paid when transforming the ADR into the underlying equity.
Comment	Enter a free-text comment as applicable.

2.2 Reviewing Corporate Actions

The CA tab shows the corporate actions that have been created for the ADR.

This is for information purposes only.



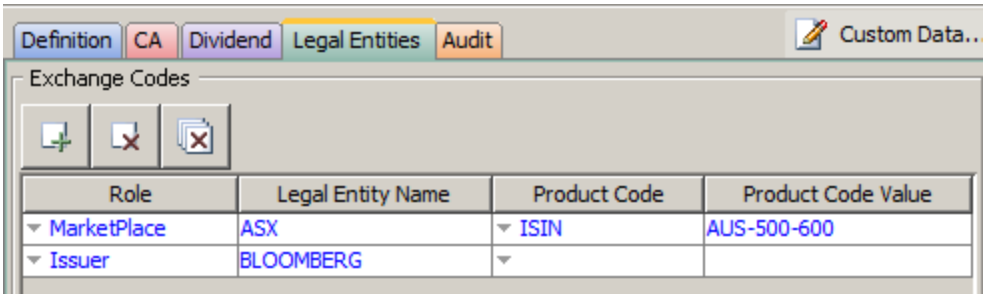
ADR window - CA panel

2.3 Specifying Dividends

[NOTE: The Dividend panel is not supported and must not be used to create dividends. The dividends must be created directly from the Corporate Actions window]

2.4 Defining Security Codes by Legal Entity

Select the Legal Entities panel to specify security codes by legal entity as applicable. A row is created by default for the issuer of the ADR.



ADR window - Legal Entities panel

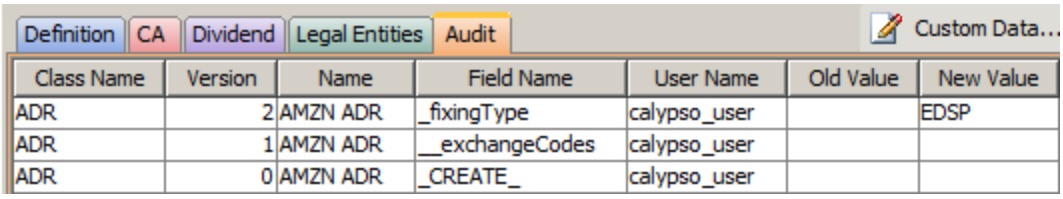
You can use this panel to specify for example specific security codes by market place.

» Click to add a legal entity, then select a role, a legal entity, a security code (product code), and enter a product code value. Repeat as needed.

» Click to save your changes.

2.5 Viewing Audit Information

Select the Audit tab to view Audit information recorded for the ADR. This only applies if the Audit mode is enabled.



Class Name	Version	Name	Field Name	User Name	Old Value	New Value
ADR	2	AMZN ADR	_fixingType	calypso_user		EDSP
ADR	1	AMZN ADR	__exchangeCodes	calypso_user		
ADR	0	AMZN ADR	_CREATE_	calypso_user		

ADR window - Audit panel

You can right-click the table and a number of functions will be available for configuring the layout.

3. Equity Product Definition

Prior to trading an equity, you need to create the Equity product. The equity product definition is required for equity and equity derivatives trading.

3.1 Defining an Equity

To define an equity product, from Calypso Navigator choose **Configuration > Equity > Equity** (menu action `product.EquityWindow`).

3.1.1 Loading an Existing Equity

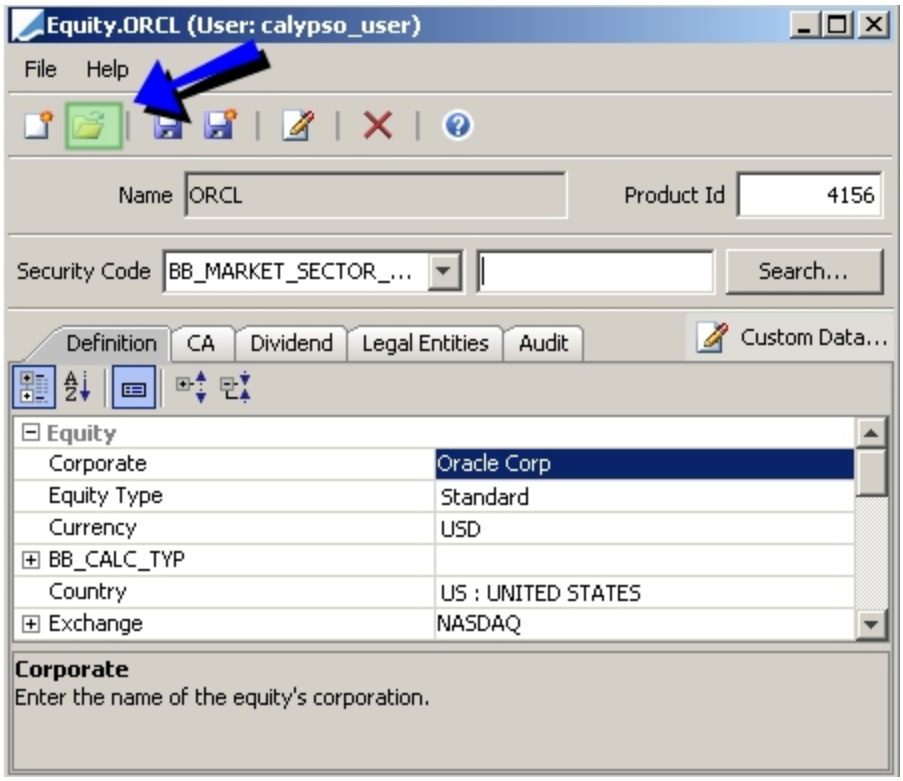
You can load an existing equity into the Equity window using one of the following methods:

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

Then click **Search** to load the corresponding equity.

Equity window - Loading an equity by security code

» You can also click at the top of the window to open the Product Chooser window - Help is available from that window.



Equity window - Loading an equity

Then modify the fields described below as needed.

3.1.2 Creating a New Equity

» Click and enter the fields described below.

3.1.3 Modifying an Equity Name

» Click to modify the equity's name. You will be prompted to enter a new name.

3.1.4 Setting Custom Data

[NOTE: The Custom Data button is deprecated and has no function beginning in Release 12.0]

3.1.5 Saving an Equity

» Click to save your changes. You will be prompted to enter an equity name.

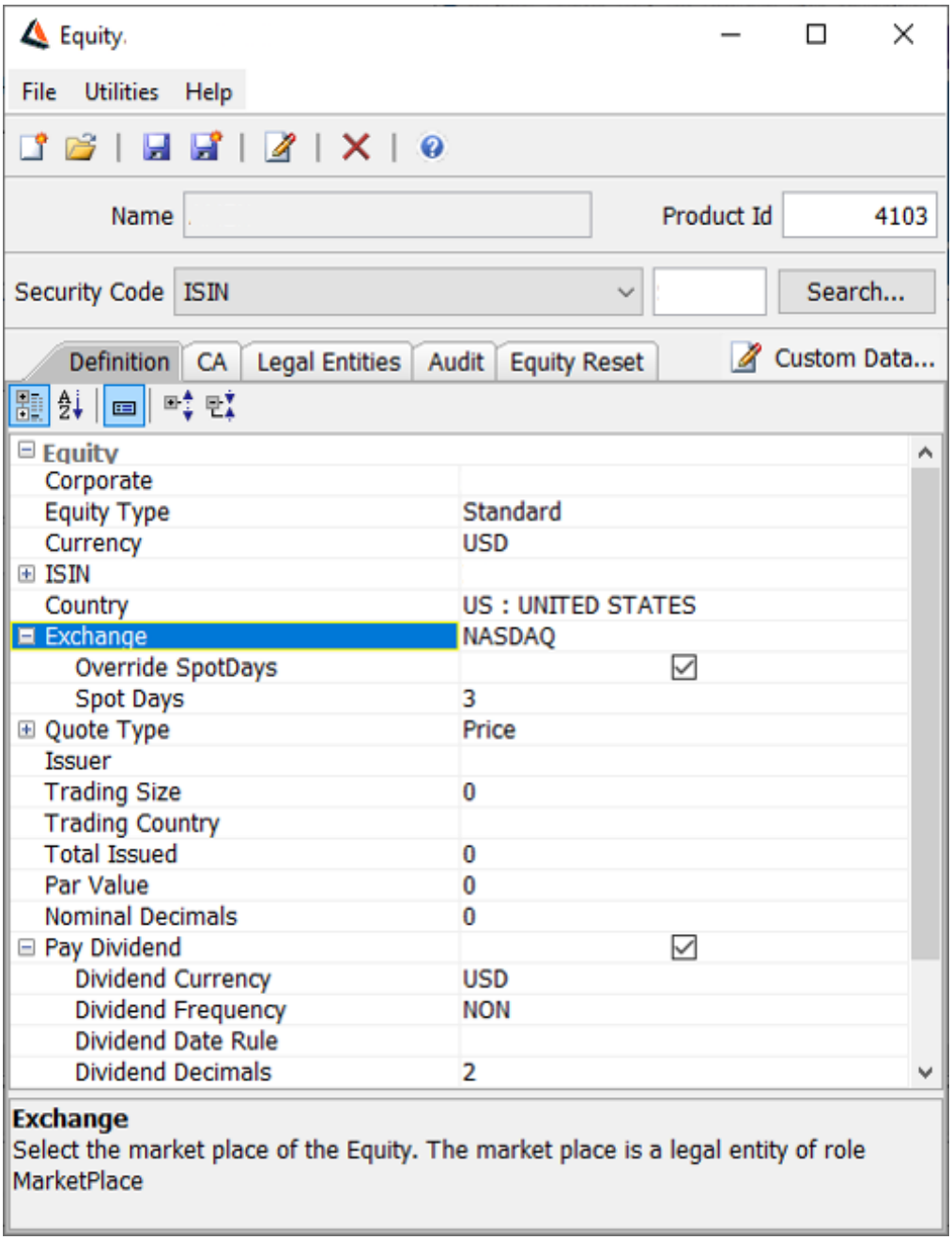
The system also saves a quote name for the product that is used to enter / retrieve market quotes.

You can also click  to save the equity as a new product. You will be prompted to enter a new name.

Definition Fields Details

Fields	Description
Name	Name of the equity specified when the equity is saved.
Product Id	Unique ID given by the system when the equity is saved.
Corporate	The long name of the corporate entity.
Equity Type	Select the product subtype. The subtype is for information purposes and can be used for filtering equities.
Currency	Select the currency of the equity.
BB_CALC_TYP	Expand this label to view all the security codes defined for equity products. You can enter a value for each security code as applicable. You can create new security codes using **Calypso Navigator > Configuration > Product > Code**.
Country	Select the country of the equity.
Exchange	Select the market place where the equity is traded. The market place is a legal entity of role MarketPlace. You can expand the Exchange to enter the Spot Days and also select Override Spot Days checkbox.
Spot Days	Default number of business days between the trade date and the settlement date. Business days are determined using the holiday calendars of the market place.
Override Spot Days	When this checkbox is unchecked, the value for spot days will directly come from legal entity attribute and it will be un-editable. However, if this checkbox is checked, the spot days field will be made editable and the user will be able to amend the spot days. The default value still come from legal entity attributes when the checkbox as unchecked.
Quote Type	Select the type of quote for the equity: Price, or PriceC (when the price is quoted in the number of cents). **[NOTE: The PriceVol quote type does not apply to equities]** ***Fixing Types*** 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.

Fields	Description
	• **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.
Issuer	Select the issuer, a legal entity of role Issuer.
Trading Size	Enter the minimum number of equities that can be traded.
Trading Country	Select the country where the registry / depository is located.
Total Issued	Enter the number of equities that have been issued.
Par Value	Enter the par value as applicable, mostly for Asian markets. It is used to compute the with-holding on stock dividends.
Nominal Decimals	Enter the decimal places to use with the nominal. The default is zero decimal places.
Pay Dividend	Check the Pay Dividend checkbox if the equity pays a dividend. You can expand Pay Dividend and specify a dividend currency, dividend frequency, and the number of dividend decimals. The Dividend Frequency is used when creating a discrete dividend curve, to generate the projected dividends. The Dividend Date Rule is not currently used.
Active From	Enter the date when the equity is active for trading.
Active To	Enter the date when the equity is no longer active for trading.
Status	It mostly applies to Bloomberg static data integration, but you can use it for your own purposes. It shows the status of the integration. You can change it as applicable. • NOUPDATE: Do not update from feeds. • PENDING: Automatic changes were made via a feed update. The changes have not yet been verified. • VERIFIED: The data has been verified.
Comment	Enter a free-form comment as applicable.



3.2 Viewing Corporate Actions

The CA panel shows the corporate actions that have been created for the equity in the Corporate Actions window.

This is for information purposes only.

Product Id	CA Type	CA SubType	Amount	Other Amount	Currency	Ex Date
16699	CASH	DIVIDEND	0.48	0	USD	06/15/2012
16698	CASH	DIVIDEND	0.45	0	USD	06/15/2011
16697	CASH	DIVIDEND	0.38	0	USD	06/15/2010
16696	CASH	DIVIDEND	0.33	0	USD	06/15/2009
16695	CASH	DIVIDEND	0.25	0	USD	06/15/2008

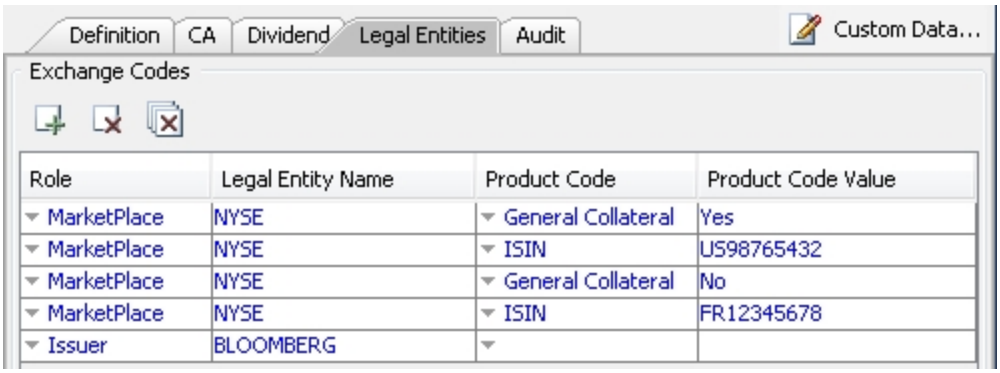
Equity window - CA panel

3.3 Specifying Dividends

[NOTE: The Dividend panel is not supported and must not be used to create dividends. The dividends must be created directly from the Corporate Actions window]

3.4 Defining Security Codes by Legal Entity

Select the Legal Entities panel to specify security codes by legal entity as applicable. A row is created by default for the issuer of the equity.



Role	Legal Entity Name	Product Code	Product Code Value
MarketPlace	NYSE	General Collateral	Yes
MarketPlace	NYSE	ISIN	US98765432
MarketPlace	NYSE	General Collateral	No
MarketPlace	NYSE	ISIN	FR12345678
Issuer	BLOOMBERG		

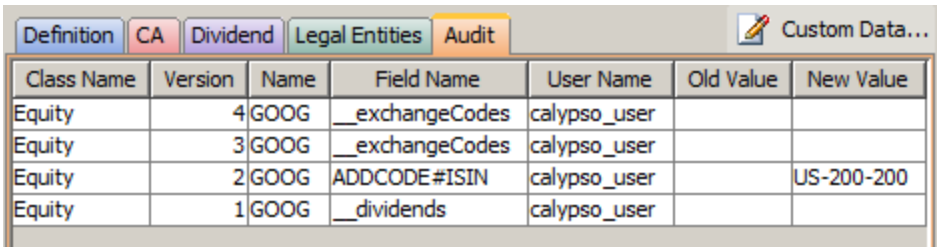
Equity window - Legal Entities panel

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

- Click to add a legal entity, then select a role, a legal entity, a security code (product code), and enter a product code value. Repeat as needed.
- Click **Save** to save your changes.

3.5 Viewing Audit Information

Select the Audit tab to view Audit information recorded for the equity. This only applies if the Audit mode is enabled.

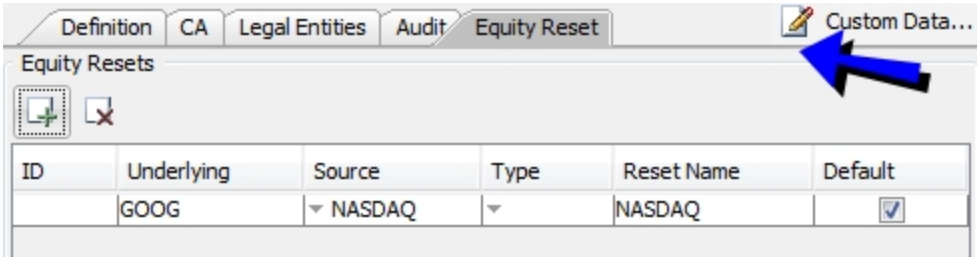


Equity window - Audit panel

You can right-click the table and a number of functions will be available for configuring the layout.

3.6 Specifying Equity Resets

You can define multiple equity resets using the Equity Reset tab as needed. You can then select the actual equity reset to be used when you capture the trades.



By default, the system adds an equity reset for the Exchange specified in the Equity definition.

To add more equity resets, click and select a source and a type. You can modify the name as needed.

If no default equity reset is specified, the trades will use the "CLOSE" equity reset which corresponds to the spot quote.

When using equity resets, you can set the fixing quotes for the quote name: "EquityReset.<equity name>.<reset name>".

For example: "EquityReset.GOOG.NASDAQ".

Make sure to save the Equity.

4. Equity Index Product Definition

Prior to trading an equity index, you need to create the Equity Index product.

4.1 Defining an Equity Index

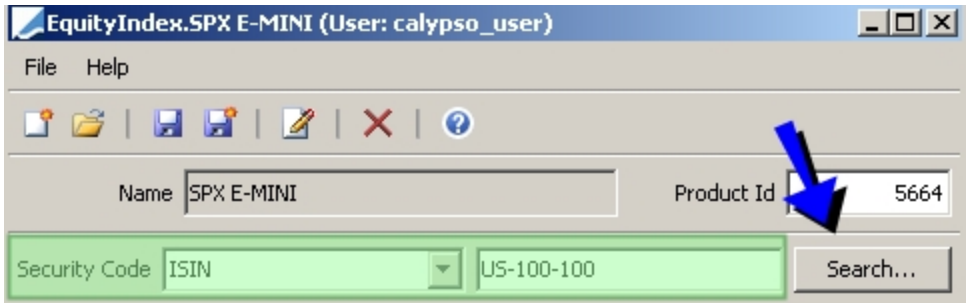
To define an equity index product, from Calypso Navigator choose **Configuration > Equity > Equity Indexes** (menu action `product.EquityIndexWindow`) as shown below.

4.1.1 Loading an Existing Equity Index

You can load an existing equity index into the Equity Index window using one of the following methods:

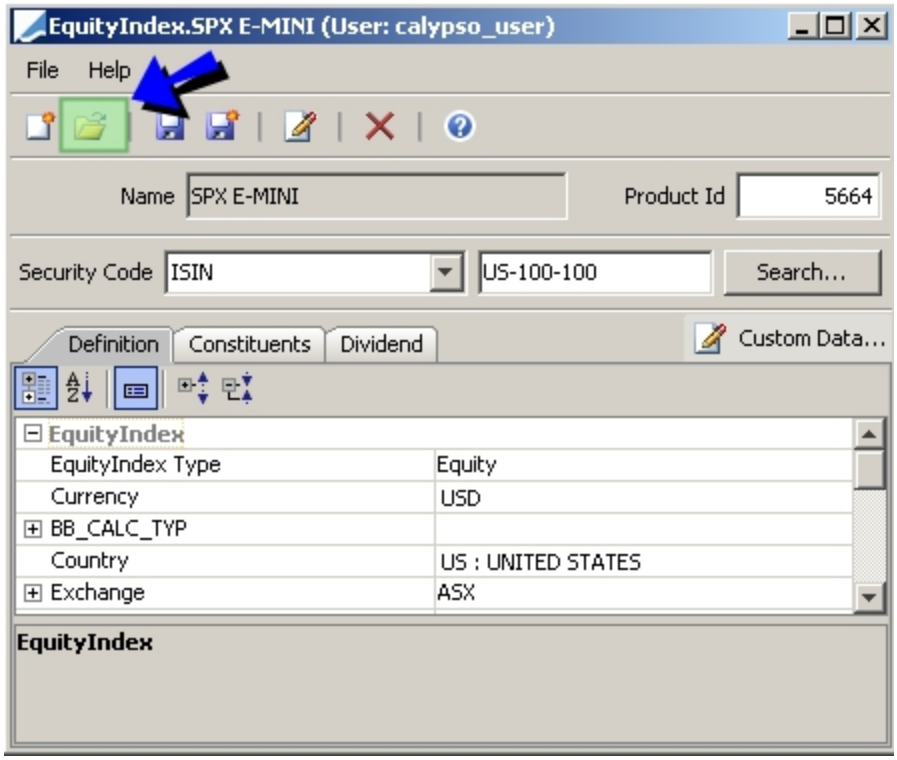
» Select a security code from the Security Code list, and enter the actual code value in the adjacent field.

Then click **Search** to load the corresponding equity index.



Equity Index window - Loading an equity index by security code

» You can also click near the top of the window to open the Product Chooser window - Help is available from that window.



Equity Index window - Loading an equity index

Then modify the fields described below as needed.

4.1.2 Creating a New Equity Index

» Click and enter the fields described below.

4.1.3 Modifying an Equity Index Name

» Click to rename the Equity index. You will be prompted to enter a new name.

4.1.4 Setting Custom Data

[NOTE: The Custom Data button is deprecated and has no function beginning in Release 12.0]

4.1.5 Saving an Equity Index

» Click to save your changes. You will be prompted to enter an equity index name.

The system also saves a quote name for the product that is used to enter / retrieve market quotes.

You can also click  to save the equity index as a new product. You will be prompted to enter a new name.

Definition Fields Details

Fields	Description
Name	This name identifies the equity index throughout the system, and appears in the quote name. When you save the equity index, you will be prompted to enter the name for the index.
Product Id	Unique ID given by the system when the equity index is saved.
EquityIndex Type	Select the product subtype. The subtype is for information purposes and can be used for filtering equity indices.
Currency	Select the currency in which the index is quoted.
BB_CALC_TYP	Expand this label to view all the security codes defined for equity index products. You can enter a value for each security code as applicable. You can create new security codes using **Calypso Navigator > Configuration > Product > Code**.
Country	Select the country for the index.
Exchange	Click ... to select the exchange where the index trades. The market place is a legal entity with the MarketPlace role. You can expand Exchange to enter the Spot Days: default number of business days between the trade date and the settlement date. Business days are determined using the holiday calendar of the market place.
Issuer	Select the issuer of the index. The issuer is a legal entity role Issuer. You can expand the Issuer to select the IPA (issue paying agent) of the index. The issue paying agent is a legal entity with role IPA.
Provider	Select the data provider for the Index. The data is used to determine the amount of cash in the index.
Publish	Expand the Publish label to specify publication details: • Frequency: Select the frequency at which the index is published. You can select a date rule instead in the Date Rule field. For weekly / monthly frequencies, you can enter the day of the week / month in the Day field. • Holiday: Select the holiday calendar. • Hour / Minute: Enter the time of day the index is published.

Fields	Description
	• TimeZone: Select the time zone for the publication time. • Date Rule: You can select a date rule to determine the publication frequency instead of the Frequency field.
External Reference	Enter an external reference as applicable.
Quote Type	Select the type of quote for the equity: Price, PriceVol, or PriceC (when the price is quoted in the number of cents). ***Fixing Types*** 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.
Date Roll	Select the date roll convention when the publication date falls on a non-business day. Date roll conventions are described under **Calypso Navigator > Help > Date Roll Conventions**.
Sources	Select the sources that publish the index if multiple sources apply. Sources are defined in the domain *equity_index_source*. You can expand the Sources label to select the Default Source.
Comment	Enter a free-form comment as needed.

4.2 Specifying Constituents

Select the Constituents panel to define the content of the index.

Equity Index Window - Constituents panel

Step 1 - Click  to add a set of constituents. You will be prompted to enter an effective date and time.

Step 2 - Then click  to add individual constituents and select the weight type of the basket: Quantity or Weight (percentage).

- Select the asset. If the asset currency is different from the equity index currency, you can define the conversion scheme between the currencies - See Multi-Currency Details below.
- Enter the quantity or weight of the asset. You can also click "**Apply equal weights**" to apply equal weights to all assets. It is to be noted that, the check to ensure weights of all constituents amounts to 100%, is accurate upto 10 decimal places.

Repeat as needed.

Click  to save the constituents of the index.

Multi-Currency Details

Fields	Description
FX Pair	Displays Product currency / Basket currency.
Quanto/Compo	Select whether the basket level is computed based on a fixed rate (Quanto) or an FX Rate definition (Compo).
FX Reset	If you have selected Compo, select an FX Rate Definition to convert the product amount into the basket amount.
Quanto Rate	If you have selected Quanto, enter the FX rate to convert the product amount into the basket amount.

Importing the Constituents from an Excel Spreadsheet / a Basket

You can export the content of a basket to an excel spreadsheet by clicking  in the Basket window (**Calypso Navigator > Configuration > Basket**). You can also create an Excel spreadsheet that contains the constituents of the index.

Then in the Excel spreadsheet, select the constituents you want to import and hit [Ctrl-C].

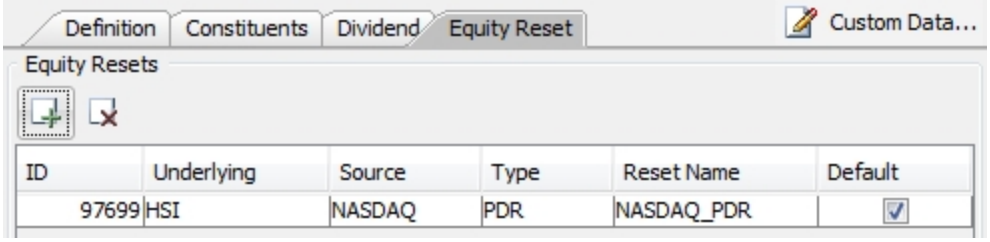
In the Constituents panel of the Equity Index window, click  to paste the constituents into the panel.

4.3 Specifying Dividends

[NOTE: The Dividend panel is not supported and must not be used to create dividends. The dividends must be created directly from the Corporate Actions window]

4.4 Specifying Equity Resets

You can define multiple equity resets using the Equity Reset tab as needed. You can then select the actual equity reset to be used when you capture the trades.



By default, the system adds an equity reset for the Exchange specified in the Equity Index definition.

To add more equity resets, click and select a source and a type. You can modify the name as needed.

If no default equity reset is specified, the trades will use the "CLOSE" equity reset which corresponds to the spot quote.

When using equity resets, you can set the fixing quotes for the quote name: "EquityReset.<equity index name>.<reset name>".

For example: "EquityReset.HSI.NASDAQ_PDR".

Make sure to save the Equity Index.

5. Volatility Index Product Definition

Prior to trading volatility futures, you may need to create a Volatility Index product.

5.1 Defining a Volatility Index

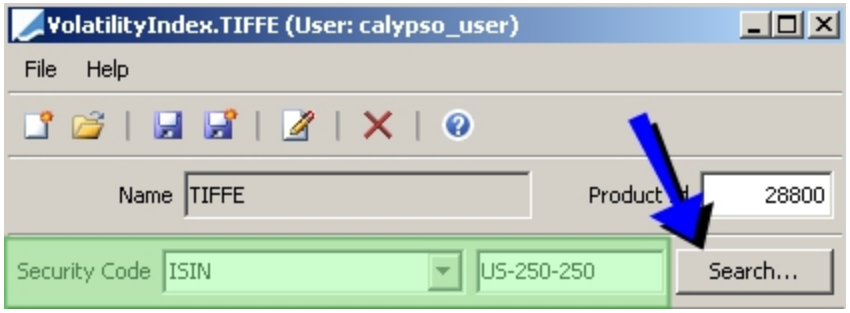
To define a volatility index product, from Calypso Navigator choose **Configuration > Equity > Volatility Indexes** (menu action `product.VolatilityIndexWindow`) as shown below.

5.1.1 Loading an Existing Volatility Index

You can load an existing volatility index into the Volatility Index window using one of the following methods:

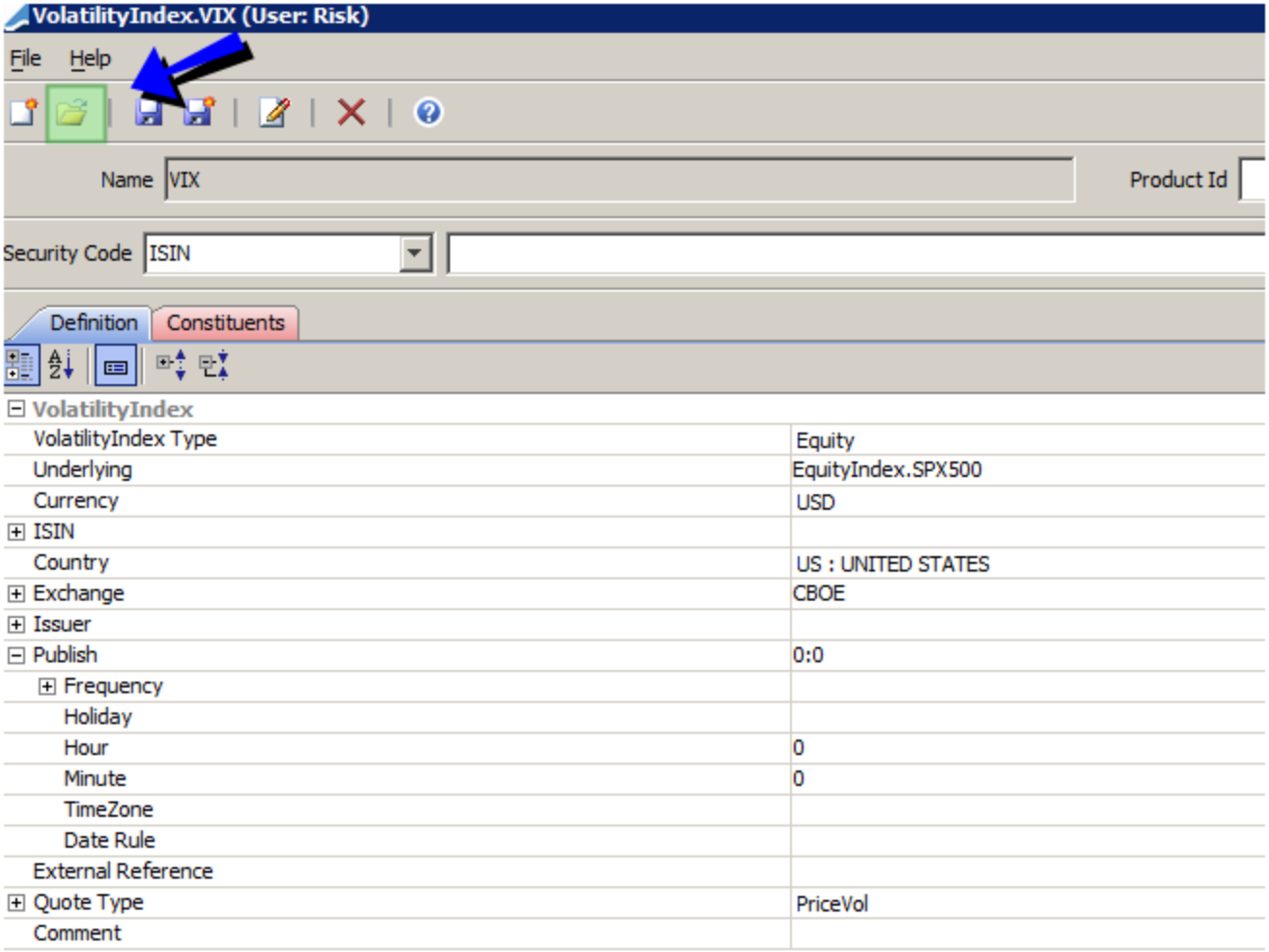
» Select a security code from the Security Code list, and enter the actual code value in the adjacent field.

Then click **Search** to load the corresponding equity index.



Equity Index window - Loading an equity index by security code

» You can also click near the top of the window to open the Product Chooser window - Help is available from that window.



Equity Index window - Loading an equity index

Then modify the fields described below as needed.

5.1.2 Creating a New Equity Index

» Click and enter the fields described below.

5.1.3 Modifying an Equity Index Name

» Click to rename the Equity index. You will be prompted to enter a new name.

5.1.4 Setting Custom Data

[NOTE: The Custom Data button is deprecated and has no function beginning in Release 12.0]

5.1.5 Saving an Equity Index

» Click to save your changes. You will be prompted to enter an equity index name.

The system also saves a quote name for the product that is used to enter / retrieve market quotes.

You can also click to save the equity index as a new product. You will be prompted to enter a new name.

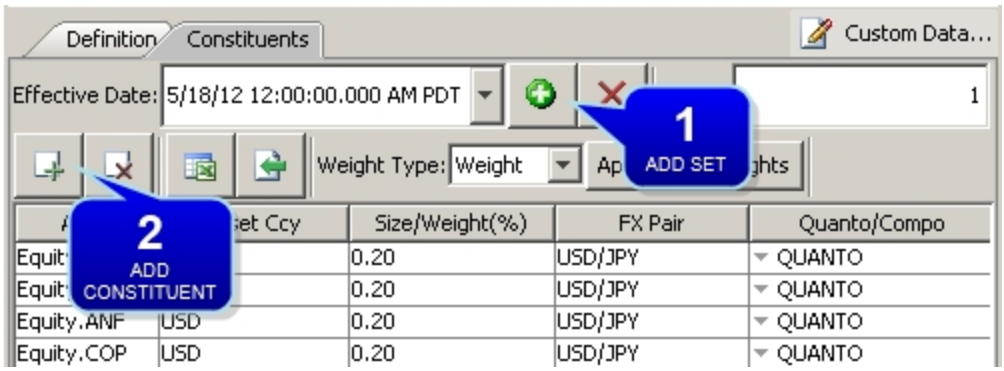
Definition Fields Details

Fields	Description
Name	This name identifies the volatility index throughout the system, and appears in the quote name. When you save the volatility index, you will be prompted to enter the name for the index.
Product Id	Unique ID given by the system when the volatility index is saved.
VolatilityIndex Type	Select the subtype: Commodity or Equity. The subtype is for information purposes and can be used for filtering volatility indices.
Underlying	Select the underlying volatility index.
Currency	Select the currency in which the index is quoted.
BB_CALC_TYP	Expand this label to view all the security codes defined for volatility index products. You can enter a value for each security code as applicable. You can create new security codes using **Calypso Navigator > Configuration > Product > Code**.
Country	Select the country for the index.
Exchange	Click ... to select the exchange where the index trades. The market place is a legal entity with the MarketPlace role. You can expand the Exchange to enter the Spot Days: default number of business days between the trade date and the settlement date. Business days are determined using the holiday calendar of the market place.
Issuer	Select the issuer of the index. The issuer is a legal entity role Issuer. You can expand the Issuer to select the IPA (issue paying agent) of the index. The issue paying agent is a legal entity with role IPA.
Provider	Select the data provider for the Index. The data is used to determine the amount of cash in

Fields	Description
	the index.
Publish	Expand the Publish label to specify publication details: • Frequency: Select the frequency at which the index is published. You can select a date rule instead in the Date Rule field. For weekly / monthly frequencies, you can enter the day of the week / month in the Day field. • Holiday: Select the holiday calendar. • Hour / Minute: Enter the time of day the index is published. • TimeZone: Select the time zone for the publication time. • Date Rule: You can select a date rule to determine the publication frequency instead of the Frequency field.
External Reference	Enter an external reference as applicable.
Quote Type	Select the type of quote for the equity: Price, PriceVol, or PriceC (when the price is quoted in the number of cents). You can expand the Quote Type and specify whether to create special quotes or not. » Set "Special Quote = Yes" to allow creating special quote names - You need to select the fixing type in that case - Upon saving the product, the system will save the standard quote name, and "<standard quote name>.<fixing type>" - The special quote is used for fixing and settlement. » Set "Special Quote = No" otherwise. ***Fixing Types*** 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.
Comment	Enter a free-form comment as needed.

5.2 Specifying Constituents

Select the Constituents panel to define the content of the index.



Volatility Index Window - Constituents panel

1 Click to add a set of constituents. You will be prompted to enter an effective date and time.

2 Then click to add individual constituents and select the weight type of the basket: Quantity. or Weight (percentage).

- Select the asset. If the asset currency is different from the equity index currency, you can define the conversion scheme between the currencies - See Multi-Currency Details below.
- Enter the quantity or weight of the asset. You can also click "**Apply equal weights**" to apply equal weights to all assets.

Repeat as needed.

Click to save the constituents of the index.

Multi-Currency Details

Fields	Description
FX Pair	Displays Product currency / Basket currency.
Quanto/Compo	Select whether the basket level is computed based on a fixed rate (Quanto) or an FX Rate definition.
FX Reset	If you have selected Compo, select an FX Rate Definition to convert the product amount into the basket amount.
Fixed FX Rate	If you have selected Quanto, enter the FX rate to convert the product amount into the basket amount.

Importing the Constituents from an Excel Spreadsheet / a Basket

You can export the content of a basket to an excel spreadsheet by clicking in the Basket window (**Calypso Navigator > Configuration > Basket**). You can also create an Excel spreadsheet that contains the constituents of the index.

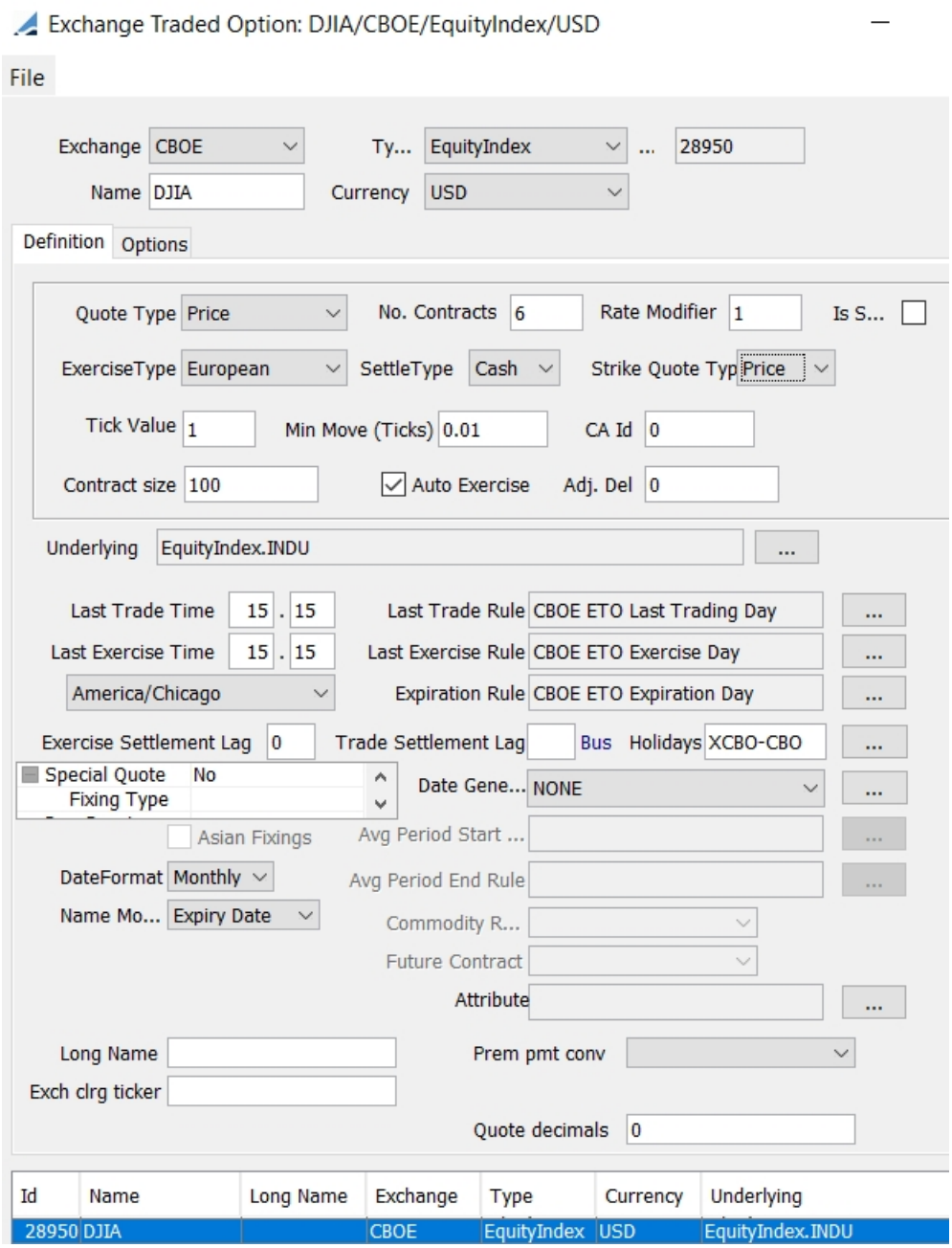
Then in the Excel spreadsheet, select the constituents you want to import and hit [Ctrl-C].

In the Constituents panel of the Volatility Index window, click to paste the constituents into the panel.

6. Exchange Traded Option Contract

An exchange traded option (ETO) contract is a collection of ETO products traded on a given exchange at a given expiry month. The ETO products can be traded, and used as underlying instruments for curves and volatility surfaces.

From Calypso Navigator choose **Configuration > Listed Derivatives > Options Contracts** (menu action `refdata.ETOContractWindow`) for creating ETO contracts as shown below.



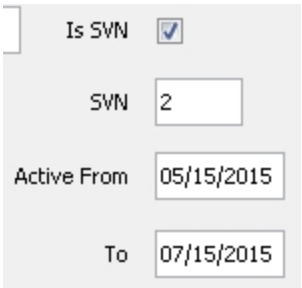
Exchange Traded Option window

The Definition panel is selected by default.

- To load existing contracts, click **Load** and modify the fields described below as applicable.
- To create a new contract, click **New** and enter the fields described below.
- Then click **Save** to save your changes. You can also click **Save As New** to save a contract as a new one.

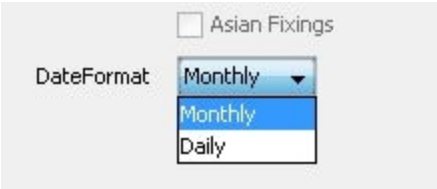
  Once a contract is saved, you can select the Options panel to create the actual ETO products.

Fields Details

Fields	Description
Exchange	Select the exchange where the contract is traded. An exchange is a legal entity of role MarketPlace.
Type	Select the type of ETO: Commodity, Equity, Equity Index, FX, IR, or Volatility.
Id	Contract id given by the system when the contract is saved.
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 Equity ETO contract and an EquityIndex ETO contract with the same name and currency on the same exchange.
Currency	Select the currency in which the contract is traded.
Quote Type	Select the quote type of the underlying's price.
No. Contracts	Enter the total number of ETO products traded in the contract. For example, for an ETO contract there are five years worth of tradable expiry months, for a total of twenty tradable ETO products.
Rate Modifier	Only used in the Pricing Sheet field "Modified Strike". Modified Strike = Strike * Rate Modifier
Is SVN	Selecting the checkbox expands the SVN number field and Active From and To fields, which allow the user to apply a version number to the contract and specify a span of time in which the change was effective. Series Version Numbers (SVN) identify adjustments to a listed series of the ETO product, such as changes to the exercise price of the contract, the number of deliverable shares on the contract, or the multiplier of the contract. 

Fields	Description
	» Add a version number in the SVN field that will identify the contract version. » Enter dates in the Active From and To fields to show when the change was effective.
Exercise Type	Select American or European.
SettleType	Select Cash or Physical.
Strike Quote Type	Select the quote type of the strike: Price or PriceC (number of cents).
Tick Value	Enter the one-tick move in the contract's price. The tick value is for information purposes only.
Min Move (Ticks)	Enter the minimum price movement, in ticks.
CA Id Adj. Del	These fields are populated when split corporate actions are applied to ETO products. A new adjusted contract is created, linked to the underlying equity and linked to the corporate action. For reverse splits, the field "Adj. Del" reflects the split ratio for adjusting the delivery of the underlying. ▶ Refer to Calypso Corporate Action documentation for details.
Contract Size	Enter the number of the underlying product represented by one ETO.
Auto Exercise	Check the "Auto exercise" checkbox to automatically exercise the option if applicable. ETOs can be automatically exercised using the AUTOMATIC_EXERCISE scheduled task.
Underlying	Click ... to select the underlying instrument.
Custom Date Generator	You can select date rules from the following fields to generate the contract's dates, or you can implement a custom date generator. ▶ Refer to the *Calypso Developer's Guide* for details. Click ... to select a custom date generator as applicable.
Last Trade Time	Enter the time limit to trade the option on the last trade date.
Last Exercise Time	Enter the time limit to exercise the option on the last exercise dates.
Last Trade Rule Last Exercise Rule Expiration Rule	Click ... to select a date schedule for generating the last trade dates, last exercise dates, and expiration dates (optional). The last exercise date and the last trading date will be equal to the expiry date if the rule is not specified. 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.

Fields	Description
Exercise Settlement Lag	Enter a number of days lag to adjust the last exercise day. The Bus label indicates that the adjusted days are business days. Double-click the Bus label to change to Cal as applicable, for indicating that the adjusted days are calendar days. The settle date of the linked equity trade is driven by the “Exercise Settlement Lag” attribute on the ETO contract.
Trade Settlement Lag	Enter the lag to calculate the settlement date. By default, the lag is calculated using business days. Double-click the Bus label to toggle to Cal to use calendar days. By default, the system uses the spot days provided by the MarketPlace.
Holidays	Click ... to select holiday calendars for the contract’s dates.
Special Quote Fixing Type	Only applies to ETOs of type Equity that are settled in cash. » Set "Special Quote = Yes" to allow creating special quote names - You need to select the fixing type in that case - Upon saving the product, the system will save the standard quote name, and "<standard quote name>.<fixing type>" - The special quote is used for fixing and settlement. » Set "Special Quote = No" otherwise. ***Fixing Types*** 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.
Day Count	Only applies to ETOs of type Volatility. The volatility surface derived from ETOs is used to price future volatility instruments but the surface can have a different daycount from the future. Thus the necessity to be able to specify this daycount on the ETO.
Custom Date Generator	You can select date rules from the fields above to generate the contract’s dates, or you can implement a custom date generator. Click ... to select a custom date generator as applicable. ▶ Refer to the *Calypso Developer’s Guide* for details.
Asian Fixings Avg Period Start Rule Avg Period End Rule	Only applies to ETOs of type Commodity whose final underlying price is calculated as an average of daily fixings. Checking the "Asian Fixings" checkbox enables the averaging period and commodity reset

Fields	Description
Commodity Reset	fields. Click ... to select a date rule for generating the averaging period start and end dates. Date rules are created using **Calypso Navigator > Configuration > Definitions > Date Rule Definitions**. Select the commodity reset whose daily price will be referenced in the calculation of the average. Commodity resets are defined in **Calypso Navigator > Configuration > Commodities > Commodity Reset**.
Attributes	Optional Click ... to add attributes to the contract definition.
Date Format	Select the date format for the quote names of the 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 adding a DateFormat contract attribute. See Attributes above.]**
Name Month	Select the reference date to identify the contract name: • Expiry Date • Prompt Month - You need to select a manual date schedule for the expiration rule 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 ETO products.
Long Name	Contract long name.
Exchange clrg ticker	For ETD Clearing - Market standard contract symbol used by the exchange and trade interface.
Prem pmt conv	Type of premium:

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

Conventional - The premium is paid upfront at the time of the transaction.
VariationMargined – The option is traded on margin. No premium/principal paid at the time of transaction. The analytics use a discount rate of 0.0 (when using the Black model to come up with the option price).

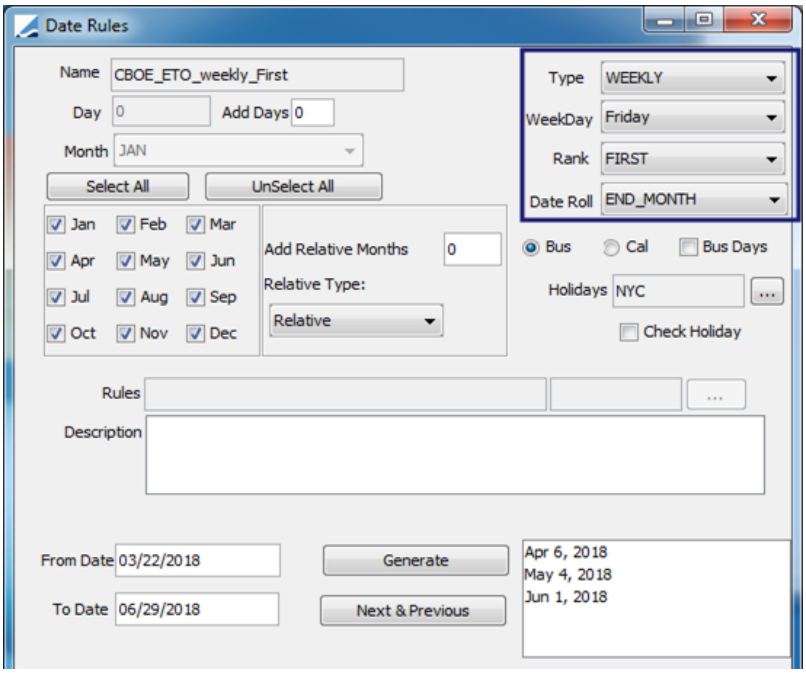
If an exchange is defined in the FutureLiffeModel domain, then the variation margin method is used.
Following are the possible combinations and the pricing model that is used.
<table>
<tr><th>Domain</th><th>Attribute</th><th>Pricing Model</th></tr>
<tr><td>Not set</td><td>Not set</td><td>Conventional</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>

6.1 Sample WEEKLY Date Rules

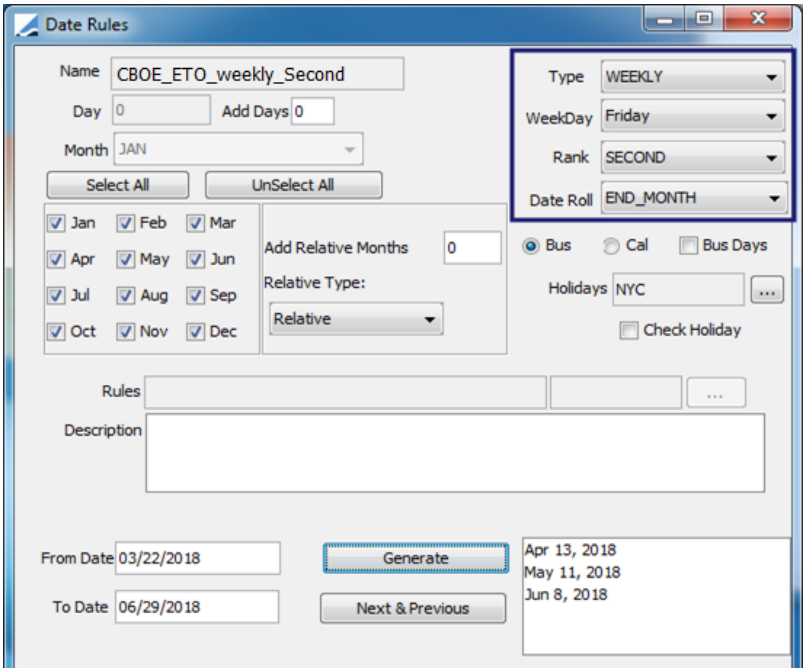
Date rules are configured in **Calypso Navigator > Configuration > Definitions > Date Rule Definitions**. Below is an example of a special date rule configuration scenario with a weekly date rule configuration.

Specific date rules can be configured for quote names with a certain day of the month for weekly expiration. The steps for creating this type of date rule are as follows:

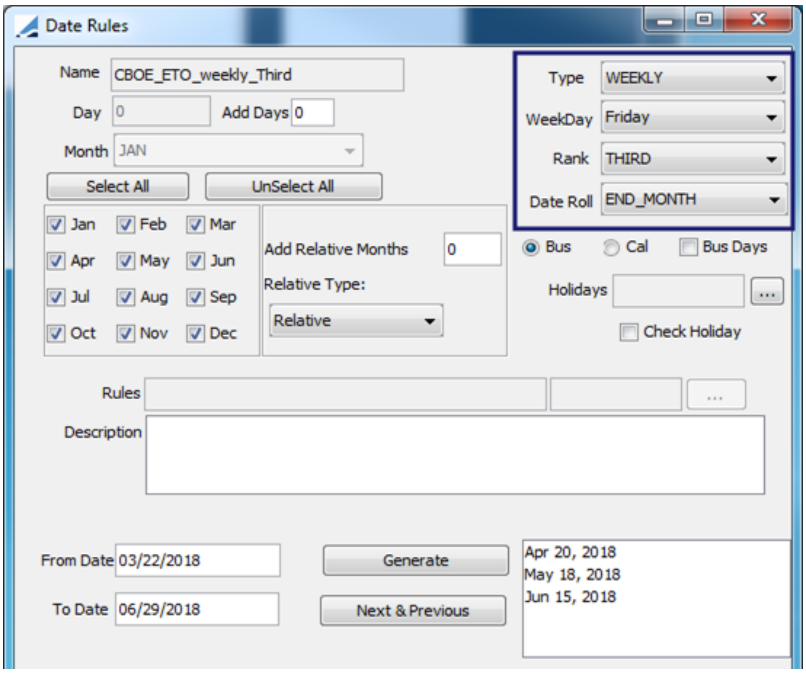
Step 1 - Create all needed WEEKLY date rules.



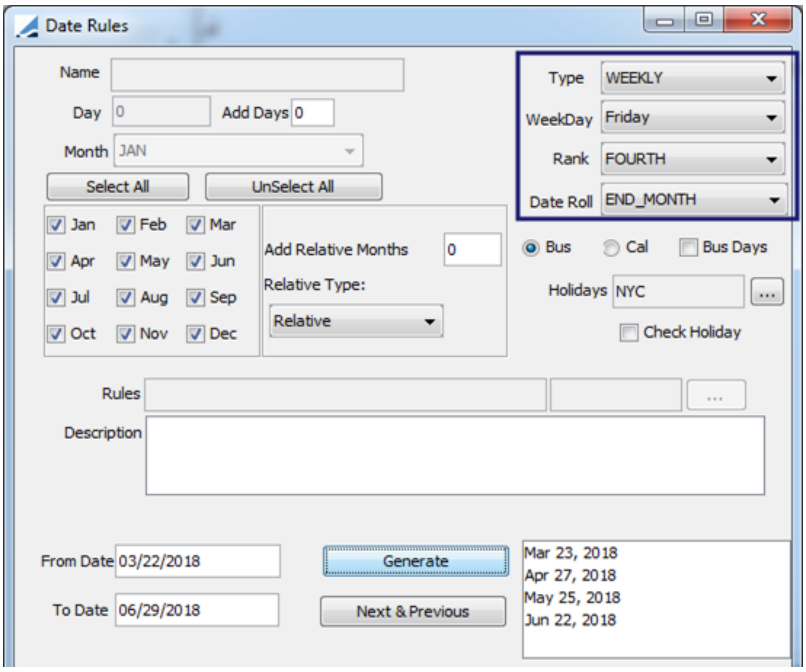
First Day Rule



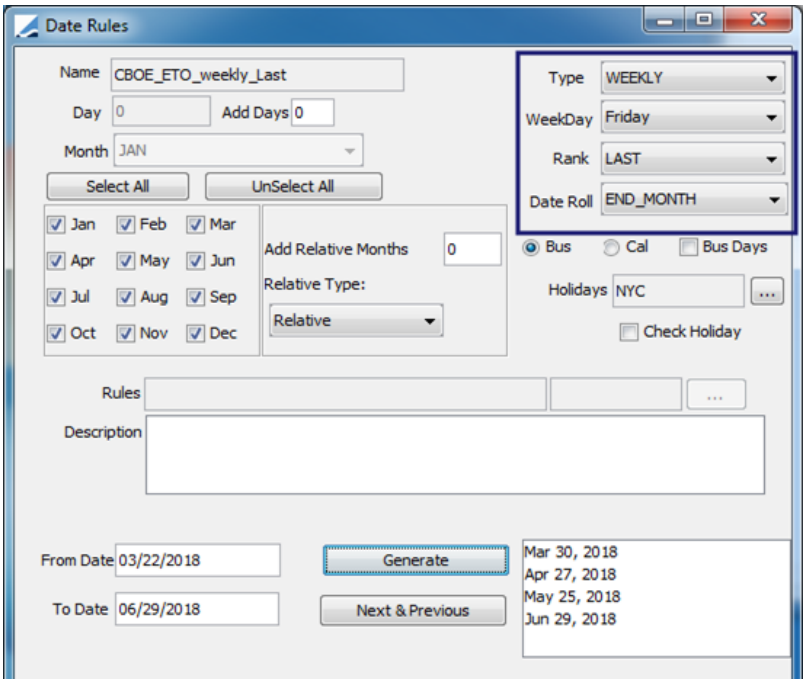
Second Day Rule



Third Day Rule

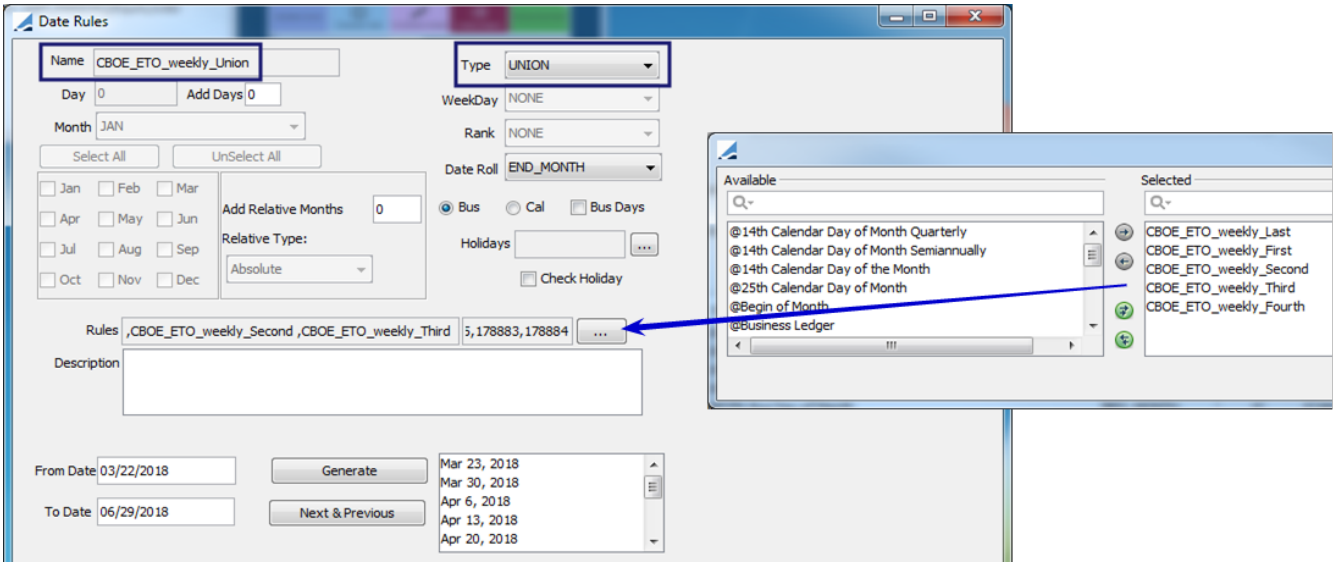


Fourth Day Rule

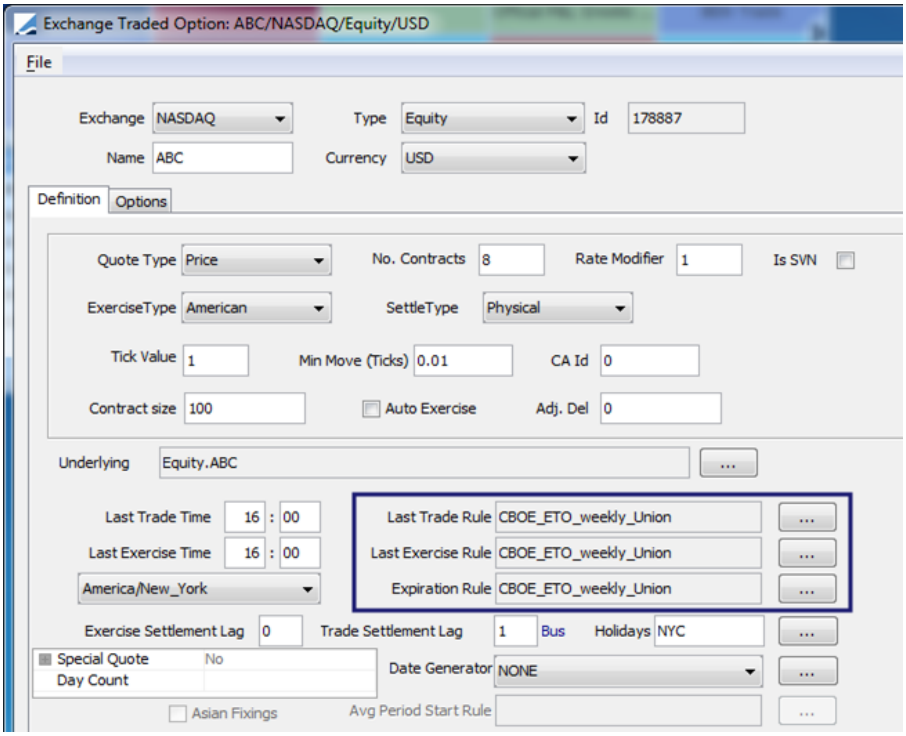


Last Day Rule

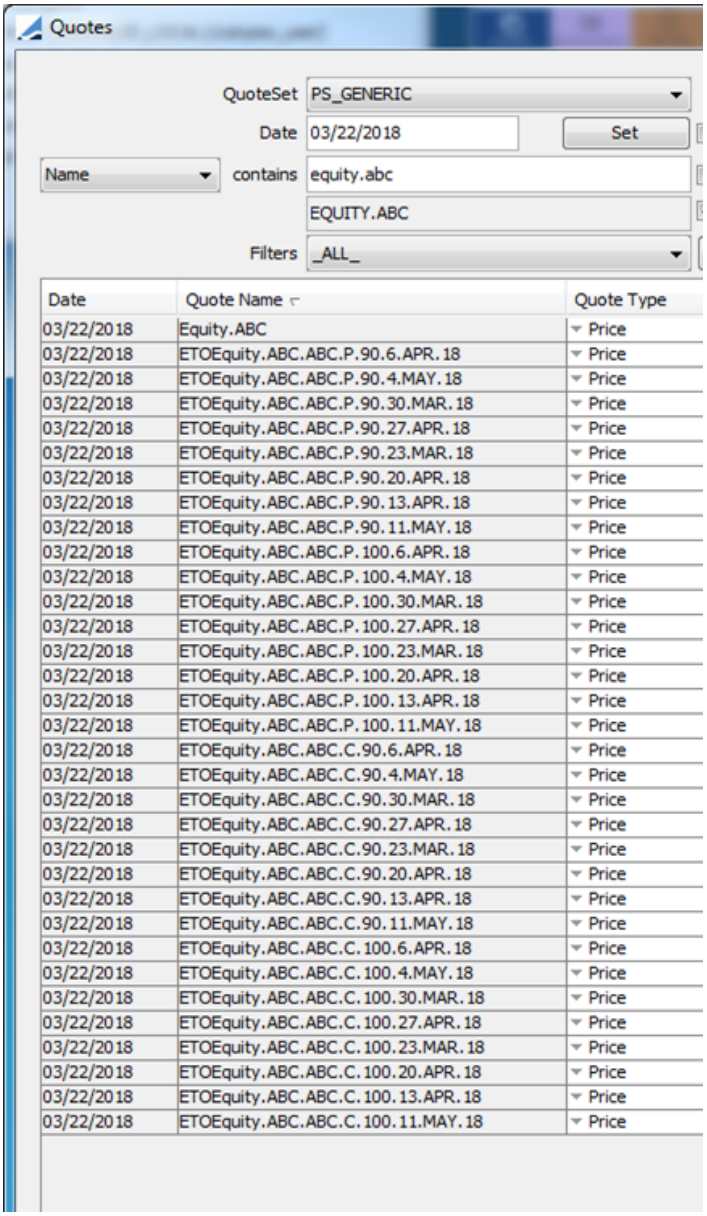
Step 2 - Create date rule of type *Union*.



Step 3 - Create an Exchange Traded Option using the Union Date Rule.

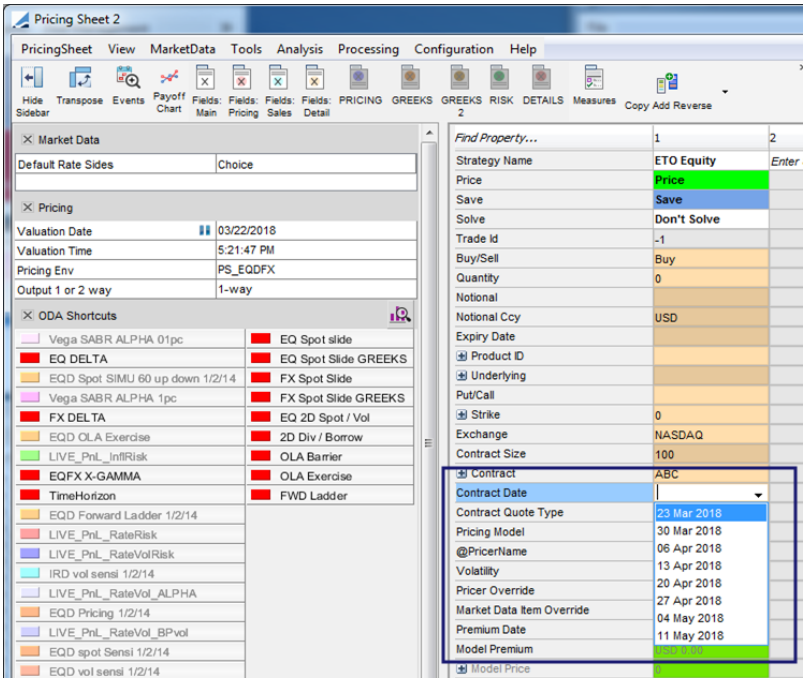


Step 4 - After you generate the options and save the products, you can search the Quote Names and see that the Weekly Exp Quote names have been created.



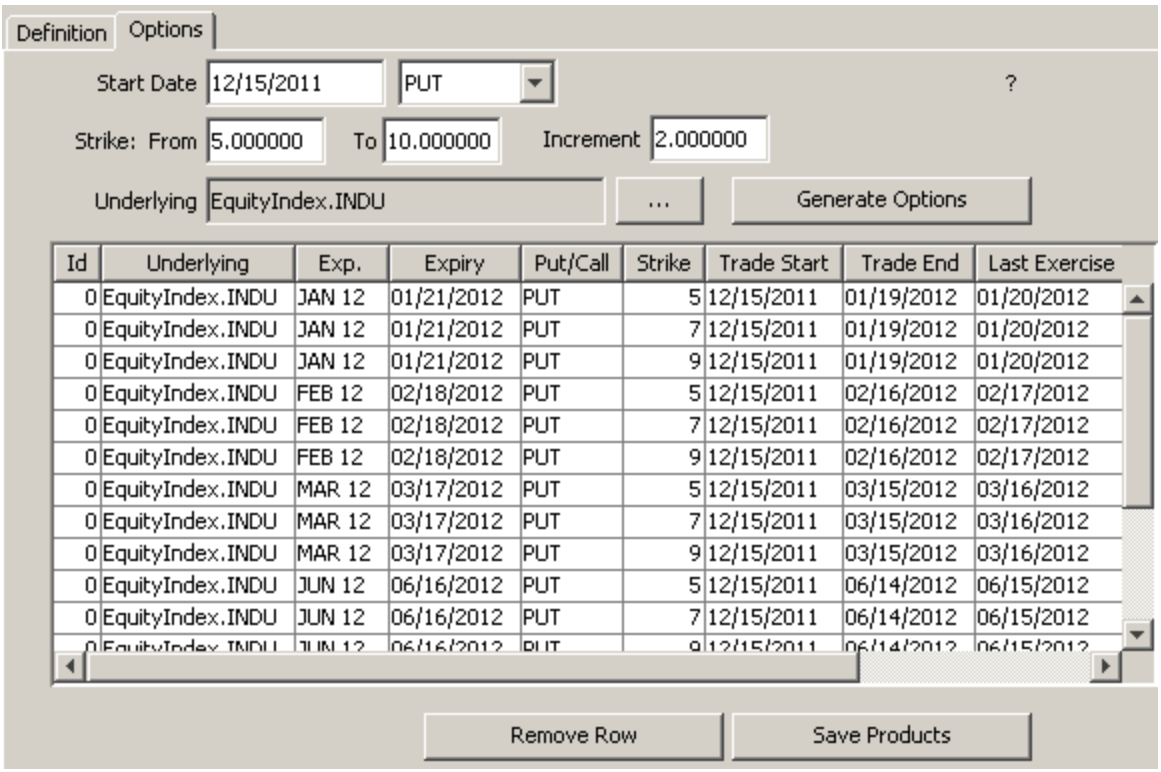
Date	Quote Name	Quote Type
03/22/2018	Equity.ABC	Price
03/22/2018	ETOEquity.ABC.ABC.P.90.6.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.90.4.MAY.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.90.30.MAR.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.90.27.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.90.23.MAR.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.90.20.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.90.13.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.90.11.MAY.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.100.6.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.100.4.MAY.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.100.30.MAR.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.100.27.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.100.23.MAR.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.100.20.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.100.13.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.P.100.11.MAY.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.90.6.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.90.4.MAY.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.90.30.MAR.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.90.27.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.90.23.MAR.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.90.20.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.90.13.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.90.11.MAY.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.100.6.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.100.4.MAY.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.100.30.MAR.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.100.27.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.100.23.MAR.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.100.20.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.100.13.APR.18	Price
03/22/2018	ETOEquity.ABC.ABC.C.100.11.MAY.18	Price

Step 5: The Weekly Exp Date Quote Name can be used in Contract Quote Name.



6.2 Creating the ETO Products

Once a contract has been saved, select the Options panel to create the actual ETO products that can be traded, and used as curve underlying instruments.



Id	Underlying	Exp.	Expiry	Put/Call	Strike	Trade Start	Trade End	Last Exercise
0	EquityIndex.INDU	JAN 12	01/21/2012	PUT	5	12/15/2011	01/19/2012	01/20/2012
0	EquityIndex.INDU	JAN 12	01/21/2012	PUT	7	12/15/2011	01/19/2012	01/20/2012
0	EquityIndex.INDU	JAN 12	01/21/2012	PUT	9	12/15/2011	01/19/2012	01/20/2012
0	EquityIndex.INDU	FEB 12	02/18/2012	PUT	5	12/15/2011	02/16/2012	02/17/2012
0	EquityIndex.INDU	FEB 12	02/18/2012	PUT	7	12/15/2011	02/16/2012	02/17/2012
0	EquityIndex.INDU	FEB 12	02/18/2012	PUT	9	12/15/2011	02/16/2012	02/17/2012
0	EquityIndex.INDU	MAR 12	03/17/2012	PUT	5	12/15/2011	03/15/2012	03/16/2012
0	EquityIndex.INDU	MAR 12	03/17/2012	PUT	7	12/15/2011	03/15/2012	03/16/2012
0	EquityIndex.INDU	MAR 12	03/17/2012	PUT	9	12/15/2011	03/15/2012	03/16/2012
0	EquityIndex.INDU	JUN 12	06/16/2012	PUT	5	12/15/2011	06/14/2012	06/15/2012
0	EquityIndex.INDU	JUN 12	06/16/2012	PUT	7	12/15/2011	06/14/2012	06/15/2012

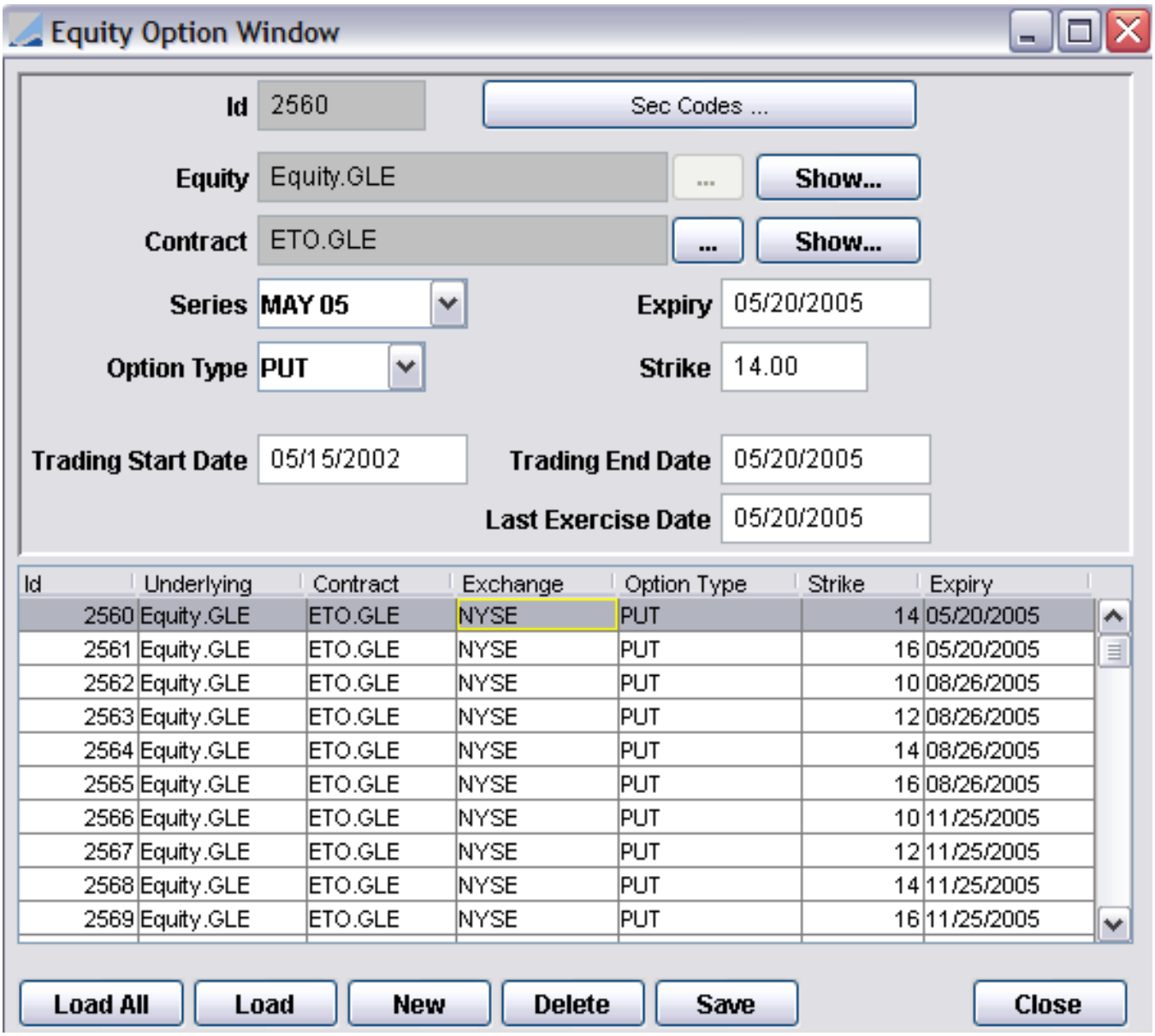
Exchange Traded Option window - Options panel

- Enter a start date and select an option type.
- Enter the strike range and the increment. You do not need to select an underlying product if you have selected it in the Definition panel.
- Click **Generate Options**. An option is created for each option type, strike price, and expiration date. You can modify each option as applicable.

  The product code Prompt Month is populated by the Comments of the manual expiration schedule if Name Month = "Prompt Month".
- Then click **Save Products** to save the actual options. Once the options are saved, you cannot modify them from this window anymore, but you can modify them using **Calypso Navigator > Configuration > Equity > Listed Equity Options**, or **Calypso Navigator > Configuration > Equity > Listed Index Options**.
- Click to display information about the window.

6.3 Viewing the ETO Equity Products

You can view the ETO equity products using **Calypso Navigator > Configuration > Equity > Listed Equity Options** (menu action `product.ETOEquityWindow`) as shown below.

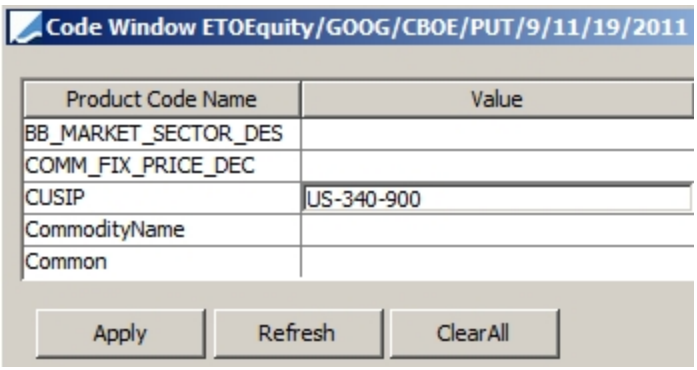


Equity Option window

» Click **Load All** to load all ETO equity products, or click **Load** to load the ETO equity products of a given equity. You will be prompted to select an equity.

Select an ETO equity product to display its details in the upper portion of the window. You can modify the product as applicable.

» Click **Sec Codes** to enter the actual code values of the selected ETO equity product as shown below.



Equity Option window - Security codes

- Double-click the Value field corresponding to a code and enter its value.
- Then click **Apply**.

» You can click **Show** next to the Equity field to display the details of the equity.

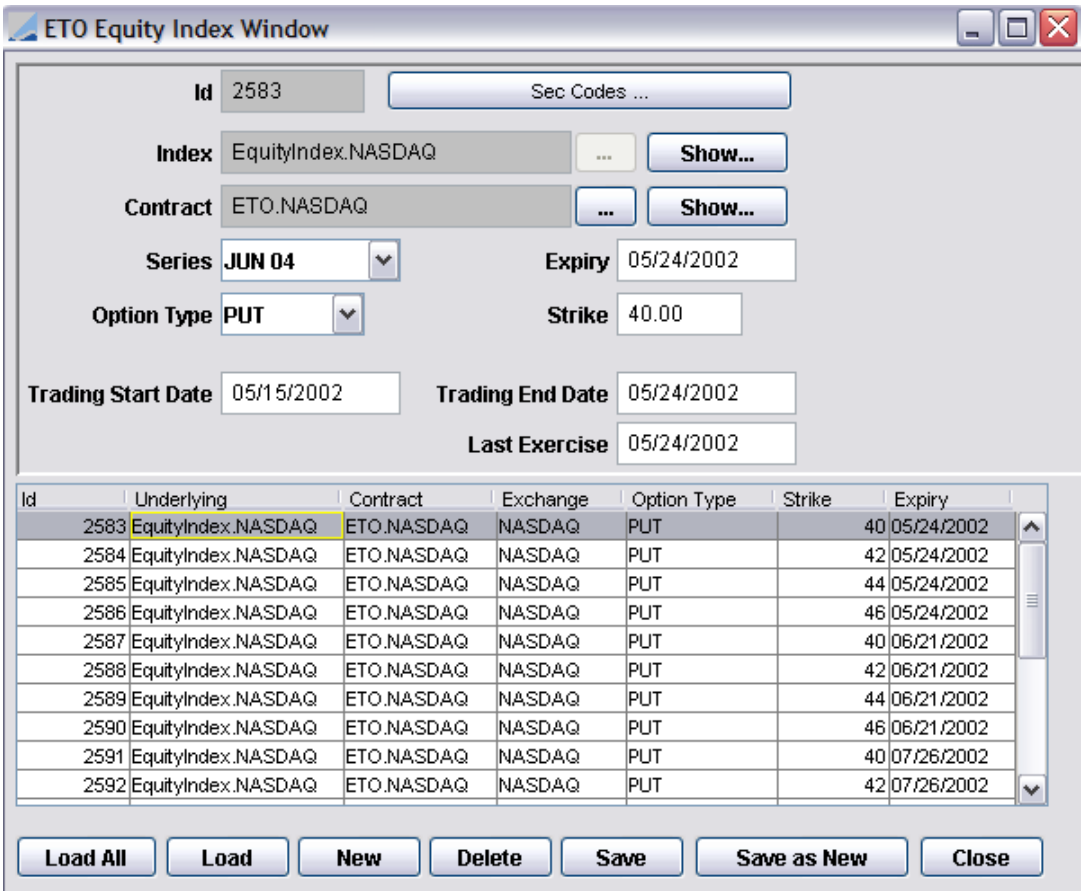
» You can click **Show** next to the Contract field to display the details of the contract.

» Click **New** to create a new ETO equity product. Enter the fields as applicable.

» Then click **Save** to save your changes. You can also click **Save As New** to save a product as a new one.

6.4 Viewing ETO Equity Index Products

You can view the ETO equity index products using **Calypso Navigator > Configuration > Equity > Listed Index Options** (menu action `product.ETOEquityIndexWindow`) as shown below.



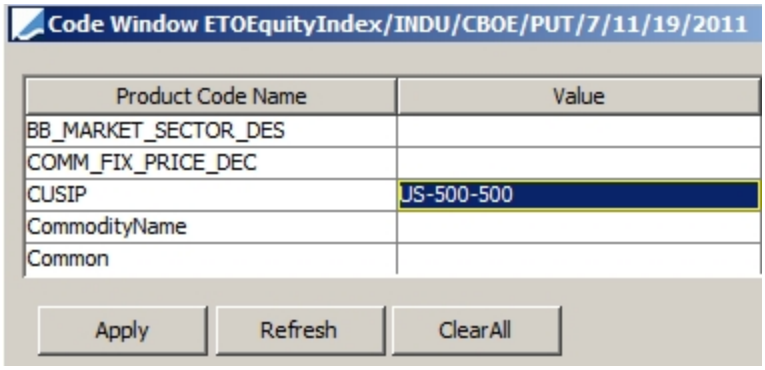
Id	Underlying	Contract	Exchange	Option Type	Strike	Expiry
2583	EquityIndex.NASDAQ	ETO.NASDAQ	NASDAQ	PUT	40	05/24/2002
2584	EquityIndex.NASDAQ	ETO.NASDAQ	NASDAQ	PUT	42	05/24/2002
2585	EquityIndex.NASDAQ	ETO.NASDAQ	NASDAQ	PUT	44	05/24/2002
2586	EquityIndex.NASDAQ	ETO.NASDAQ	NASDAQ	PUT	46	05/24/2002
2587	EquityIndex.NASDAQ	ETO.NASDAQ	NASDAQ	PUT	40	06/21/2002
2588	EquityIndex.NASDAQ	ETO.NASDAQ	NASDAQ	PUT	42	06/21/2002
2589	EquityIndex.NASDAQ	ETO.NASDAQ	NASDAQ	PUT	44	06/21/2002
2590	EquityIndex.NASDAQ	ETO.NASDAQ	NASDAQ	PUT	46	06/21/2002
2591	EquityIndex.NASDAQ	ETO.NASDAQ	NASDAQ	PUT	40	07/26/2002
2592	EquityIndex.NASDAQ	ETO.NASDAQ	NASDAQ	PUT	42	07/26/2002

Equity Index Option window

» Click **Load All** to load all ETO equity index products, or click **Load** to load a given ETO equity index product. You will be prompted to select an ETO equity index.

Select an ETO equity index product to display its details in the upper portion of the window. You can modify the product as applicable.

» Click **Sec Codes** to enter the actual code values of the selected ETO equity index product as shown below.



– Double-click the Value field corresponding to a code and enter its value.

- Then click **Apply**.

» You can click **Show** next to the Index field to display the details of the equity index.

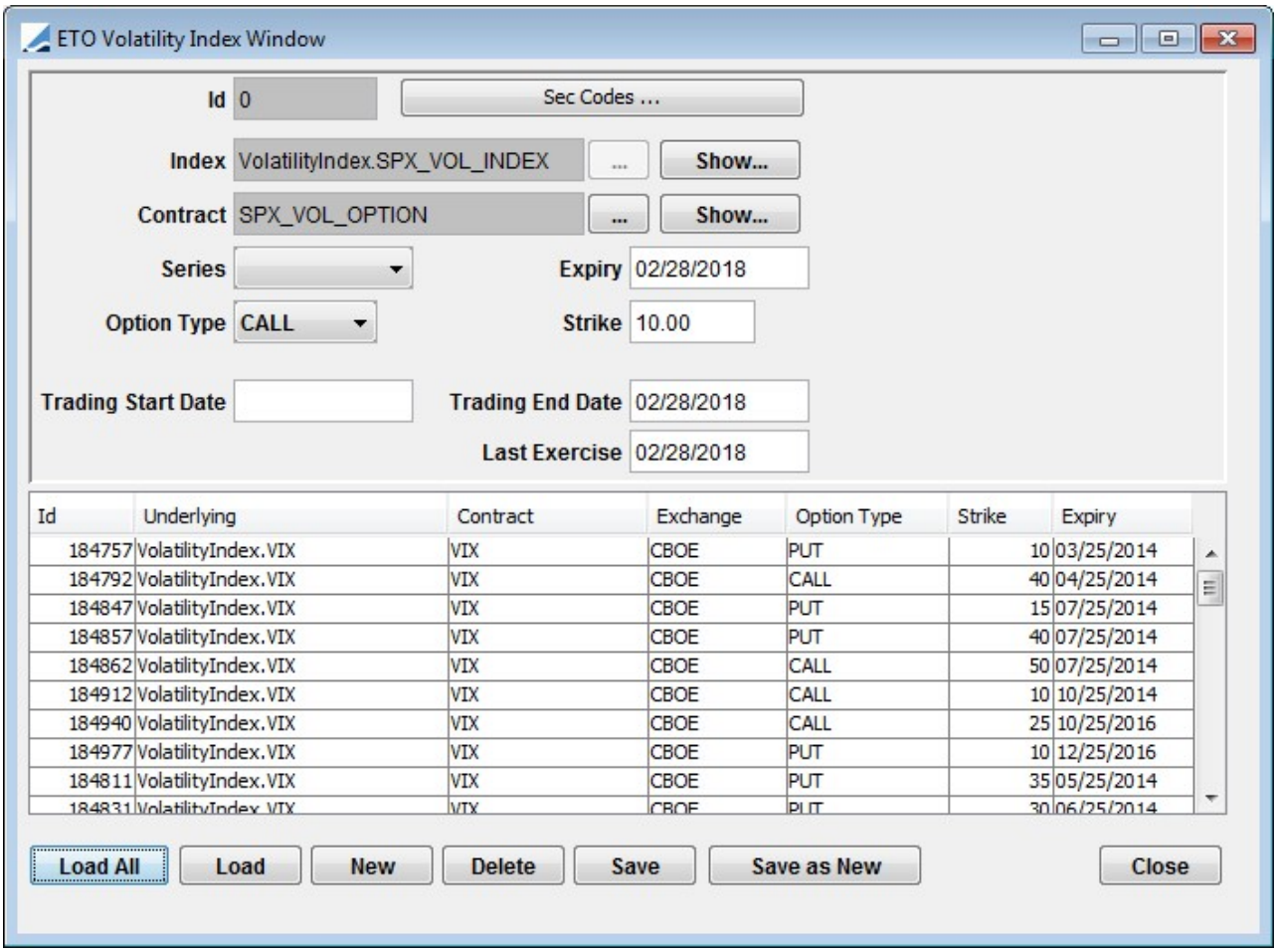
» You can click **Show** next to the Contract field to display the details of the contract.

» Click **New** to create a new ETO equity index product. Enter the fields as applicable.

» Then click **Save** to save your changes. You can also click **Save As New** to save a product as a new one.

6.5 Viewing ETO Volatility Index Products

You can view the ETO volatility index products using menu action `product.ETOVolatilityIndexWindow` as shown below.

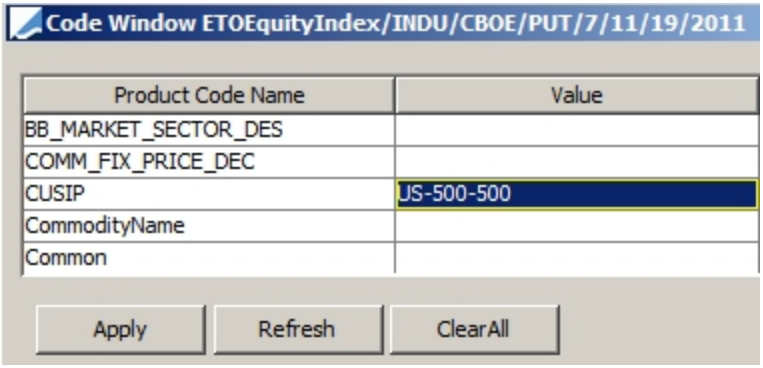


Volatlity Index window

» Click **Load All** to load all ETO volatility index products, or click **Load** to load a given ETO volatility index product. You will be prompted to select an ETO volatility index.

Select an ETO equity index product to display its details in the upper portion of the window. You can modify the product as applicable.

» Click **Sec Codes** to enter the actual code values of the selected ETO volatility index product as shown below.



  – Double-click the Value field corresponding to a code and enter its value.
  – Then click **Apply**.

» You can click **Show** next to the Index field to display the details of the volatility index.

» You can click **Show** next to the Contract field to display the details of the contract.

» Click **New** to create a new ETO volatility index product. Enter the fields as applicable.

» Then click **Save** to save your changes. You can also click **Save As New** to save a product as a new one.

7. Structured Note Definition

Prior to trading structured notes, you need to create the Structured Note product.

Structured Notes are a type of bond where the coupon amount, the redemption amount, or both, are contingent upon an underlying equity structured option based on an equity, an equity index, or a basket.

7.1 Defining a Structured Note

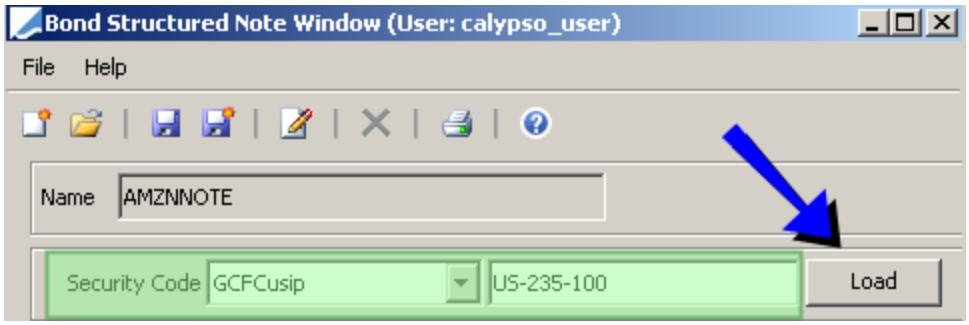
To define a structured note, from Calypso Navigator choose **Configuration > Equity > Structured Note** (menu action `product.BondStructuredNoteWindow`).

7.1.1 Loading an Existing Structured Note

You can load an existing structured note into the Structured Note window using one of the following methods:

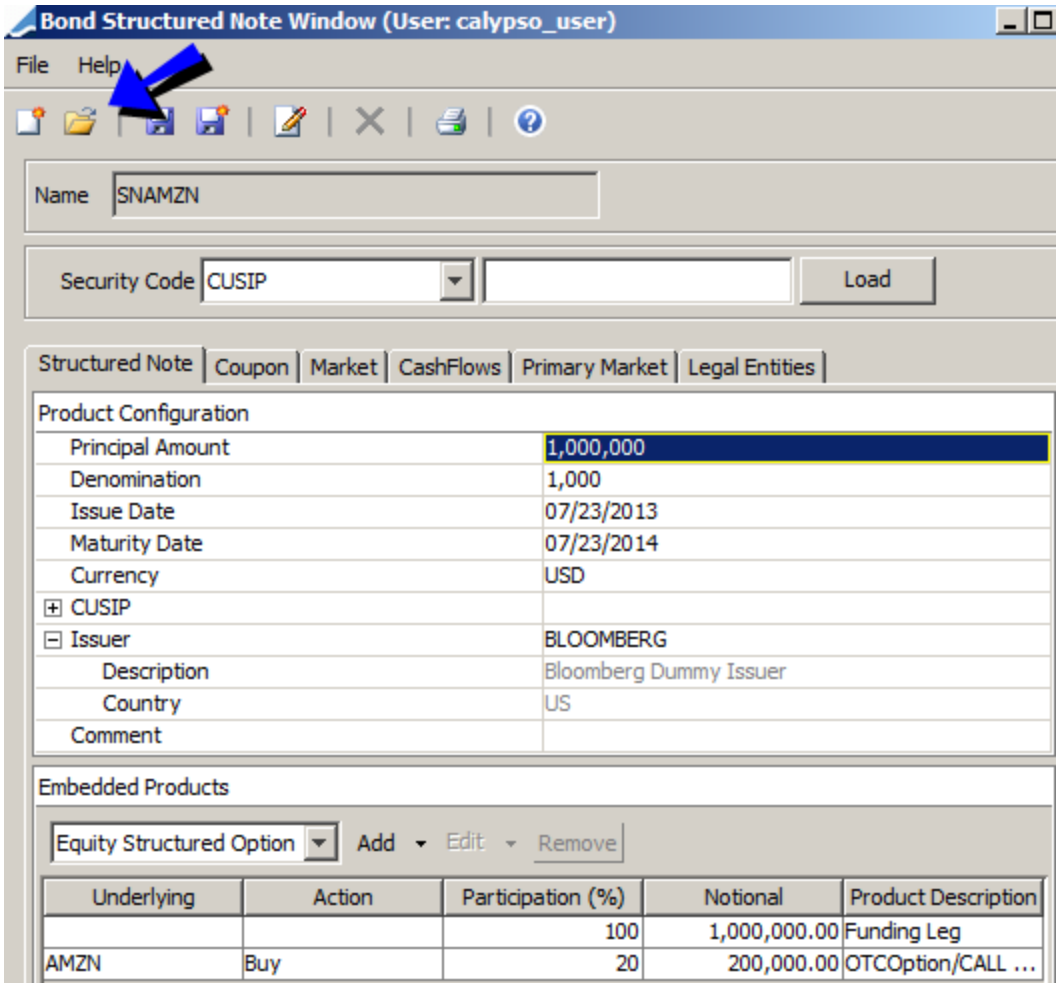
» Select a security code from the Security Code list, and enter the actual code value in the adjacent field.

Then click **Load** to load the corresponding structured note.



Structured Note window - Loading a structured note by security code

» You can click near the top of the window to open the Product Chooser window - Help is available from that window.



Structured Note window - Loading a structured note

Then modify the fields described below as needed.

7.1.2 Creating a New Structured Note

» Click and enter the fields described below.

7.1.3 Renaming a Structured Note

» Click to modify the structure note's name. You will be prompted to enter a new name.

7.1.4 Saving a Structured Note

» Click to save your changes. You will be prompted to enter a structured note name.

The system also saves a quote name for the product that is used to enter / retrieve market quotes.

You can also click to save the structured note as a new product. You will be prompted to enter a new name.

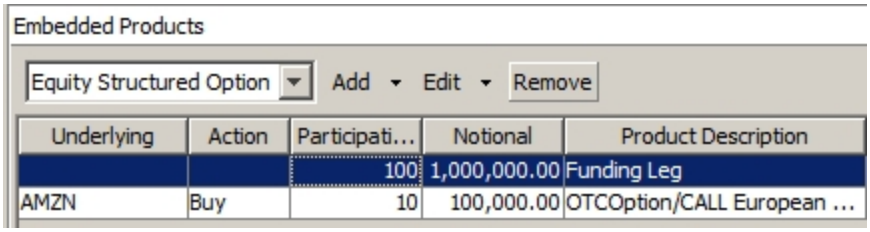
Product Configuration Fields Details

Fields	Description
Principal Amount	Enter the amount of the note.
Denomination	Enter the face amount of each note – Minimum tradable unit.
Issue Date	Enter the date the note was issued.
Maturity Date	Enter the date the note matures.
Currency	Select the currency of the note.
CUSIP	Expand this label to view all the security codes defined for structured note products. You can enter a value for each security code as applicable. You can create new security codes using **Calypso Navigator > Configuration > Product > Code**.
Issuer	Select the issuer of the note. The issue is a legal entity of role Issuer. You can expand the Issuer label to view the issuer's full name and country.
Comment	Enter a free-form comment as needed.

Embedded Products Details

This area allows specifying the underlyings of the structured note.

An underlying is created by default for the structured note itself, the funding leg.



Structured Note window - Underlying Products

» Click the down arrow next to **Add** and click **Add Advanced** to bring up the Equity Structured Option Trade window - Help is available from that window.

Enter the characteristics of the option and click **Close**.

The equity structured option trade is added to the list of embedded products.

The participation is the percentage of option with respect to the principal amount of the structured note.

The cashflows on the note are based on the bond coupon schedule (INTEREST, PRINCIPAL) and the payout flow of the embedded option.

» You can select an underlying option and click **Edit** to modify its characteristics. Or click the down arrow next to **Edit** and click **Edit Advanced** to bring up the Equity Structured Option Trade window.

7.2 Specifying the Coupon

The coupon can either be pre-determined or contingent upon values of the note's underlying. Even in the case of coupon contingent, Calypso only considers cases in which the coupon value is determined at the beginning of the period (no reset in arrears).

Coupon types:

- Zero Coupon
- Fixed Rate
- Floating rate: aIndex + b
- Digital Coupon – A digital coupon can only take two values, either a% or y%. The value taken is contingent on certain price(s) of the note underlying at pre-specified dates i.e. observation dates.

  Each component of the underlying has a defined “strike price”.

  Example: If at the considered observation date, the closing price of each component of the underlying is equal to or greater than the Coupon Strike, then value **a** is used to compute the next coupon otherwise, value **b** is used.

Value	Coupon Strike
a: 5.0%	220
b: 0.2%	

  For example, if on the Observation Date:

  Closing Price < Coupon Strike, then the next note coupon is fixed at 0.2%.

  Closing Price > Coupon Strike, then the next note coupon is fixed at 5%.

  It is necessary to know precisely which coupon type applies to any interest period of the note. In most cases, the note pays a high fixed coupon for the initial, and sometimes second interest period, and then the coupon payment is determined by a digital formula.

Select the Coupon panel to define the coupon.

▶ Refer to Bond Definition documentation for complete details on the Coupon panel.

7.3 Specifying Additional Characteristics

Select the other panels to set additional characteristics and generate the cashflows.

[NOTE: In order to ensure proper functionality, please do not modify the characteristics of the Market panel]

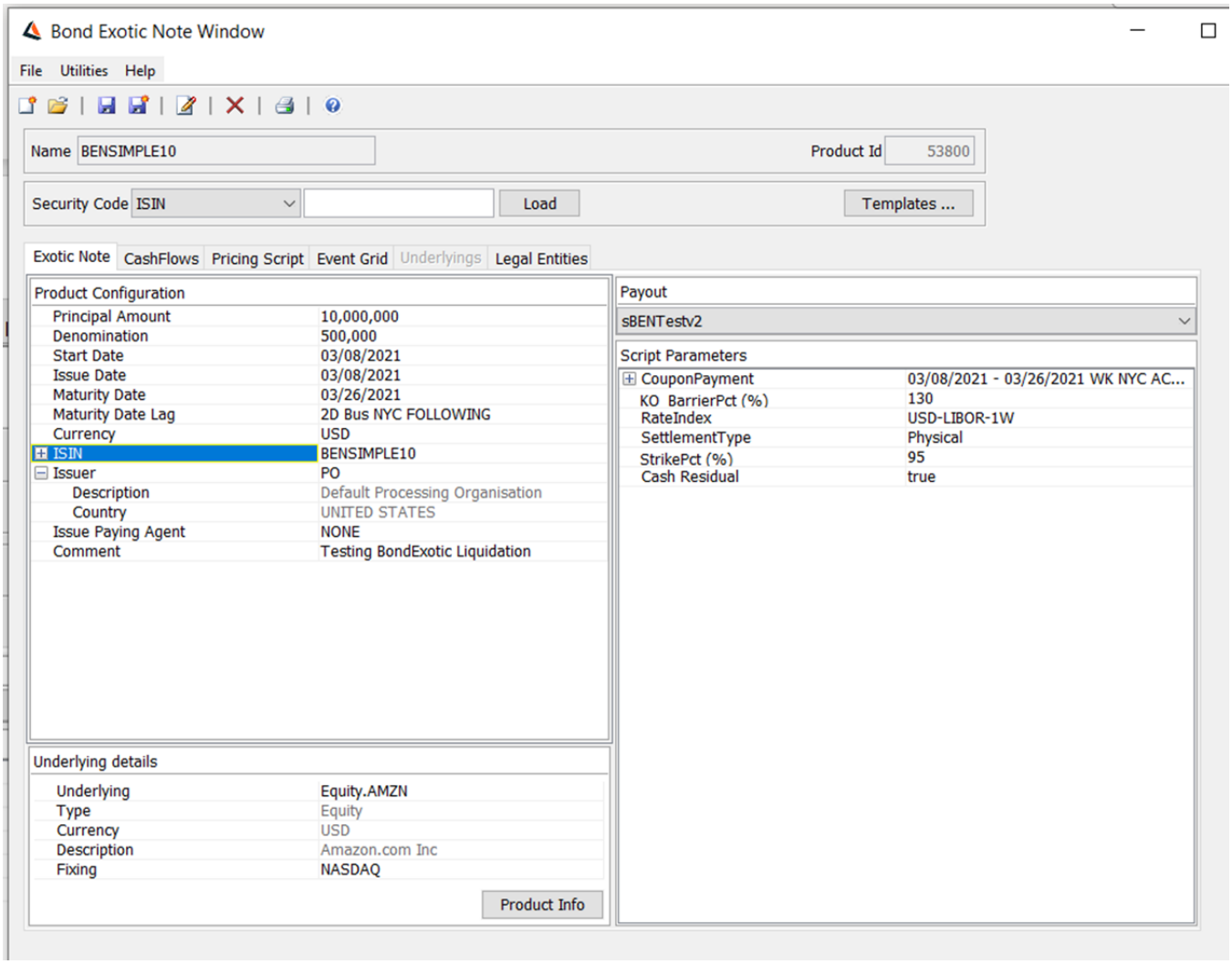
▶ Refer to Bond Definition documentation for complete details on the Market panel.

8. Exotic Note Definition

An Exotic Note is a position based product with a pricing script as the only payoff.

8.1 Defining an Exotic Note

To define an Exotic Note, from Calypso Navigator choose **Configuration > Equity > Exotic Note** (menu action `product.BondExoticNoteWindow`).

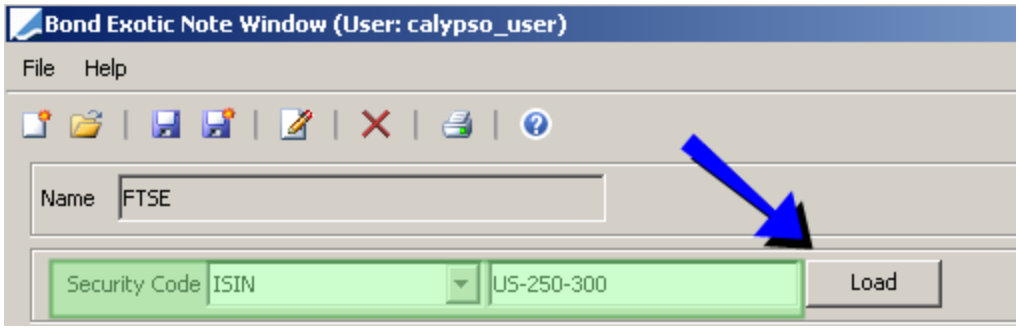


8.1.1 Loading an existing Exotic Note

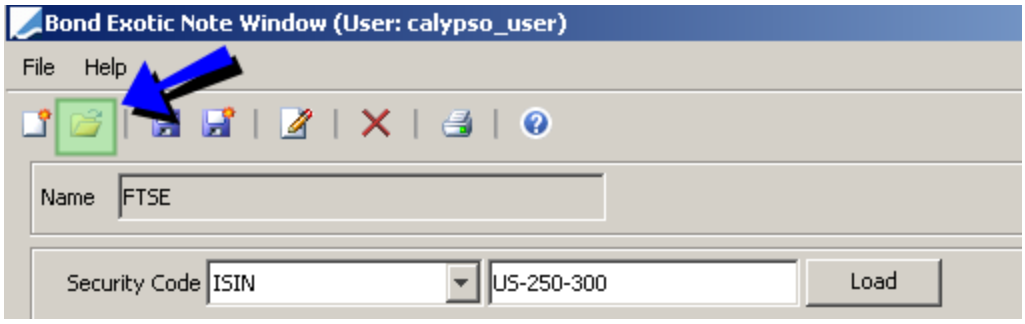
You can load an existing Exotic Note in the window using one of the following methods:

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

Then click **Load** to load the corresponding Bond Exotic Note.



» You can also click near the top of the window to open the Product Chooser Window. Help is available from that window.



8.1.2 Creating a new Exotic Note

» Click and enter values in the fields. The fields are described below.

8.1.3 Modifying an Exotic Note's Name

» Click to rename the Exotic Note. You will be prompted to enter a new name.

8.1.4 Saving an Exotic Note

» Click to save your changes. You can click to save as new.

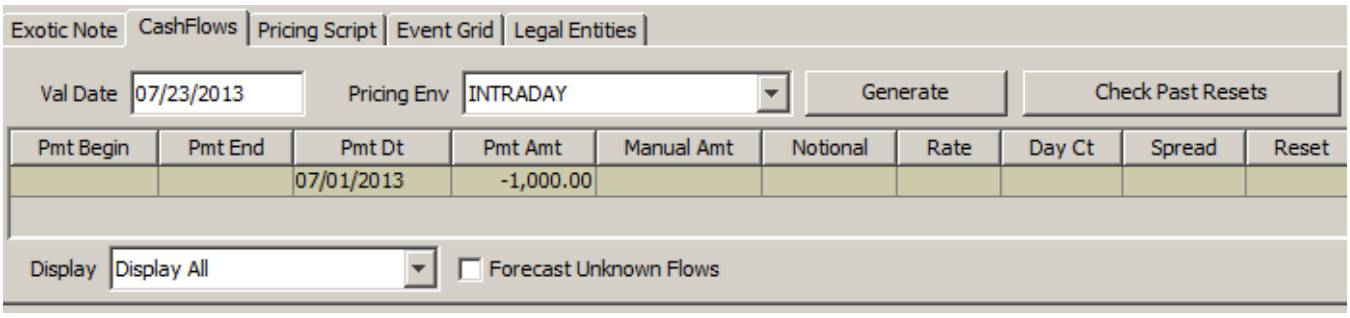
Definition Fields Details

Field	Description
Name	Name of the Exotic Note specified upon saving.
Product Id	Unique ID given by the system when the Exotic Note is saved.

Field	Description
Principal Amount	Enter the total amount of the note. Principal amount must be multiple of note's denomination.
Denomination	Enter the minimum tradable unit.
Start Date	Enter the start date.
Issue Date	Enter the issue date.
Maturity Date	Enter the date the note matures.
Maturity Date Lag	You have the option to offset the maturity date.
Currency	Select the currency of the Bond Exotic Note.
Security Code	Expand this label to view all the security codes defined. You can enter a value for each security code as applicable. You can create new security codes using **Calypso Navigator > Configuration > Product > Code**.
Issuer	Select the issuer, a legal entity of role Issuer.
Comment	Enter a text comment as applicable.
Underlying	Click **...** and select the underlying from the Product Chooser Window. Upon selection, the underlying type, currency, and description will be displayed. You can click **Product Info** to view more Product details related to the underlying. ***Fixing*** You can select an equity reset as needed. Equity resets are defined in the Equity Definition or Equity Index Definition. If not selected, the default is CLOSE, indicating that the fixing is done using the spot quote. ***FX Reset*** For FX underlyings, you can select the FX Reset used to fix prices.
Payout	Select an available pricing script from the drop-down menu. Specify the script parameters as necessary. ▶ Please refer to Calypso Pricing Script documentation for details on defining pricing scripts.

8.2 Generating the Cashflows

Select the CashFlows panel.



Exotic Note Definition window - Sample cashflows

- Select a valuation date from the Val Date field and select a pricing environment from the Pricing Env field.
- Click **Generate** and the cashflows will be displayed.
- Select the type of cashflows you want to display from the Display field. You can choose to display only interest cashflows, only principal cashflows, or all cashflows.
- You can click **Check Past Resets** to bring up the Quote Window.
- Right-click any cell to display the Cash Flow Menu.

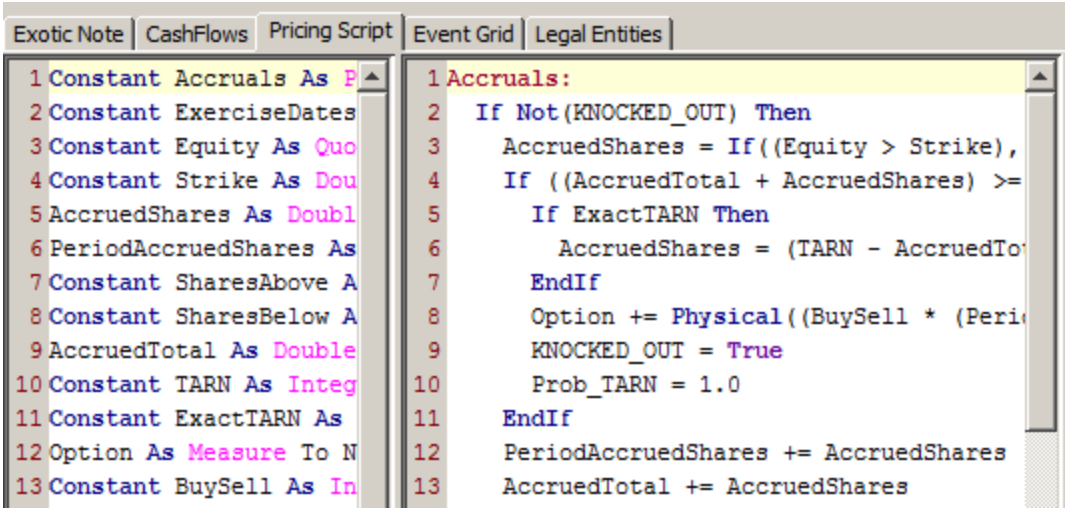
Cash Flow Menu Details

Menu Item	Description
Copy Ctrl-C Paste Ctl-V	Allows copying and pasting into values. Select a cell, type Ctrl+C, then select another cell and type Ctrl+V. The content of the first cell will be pasted into the second cell.
Add	Right-click a row and choose Add. The selected row will be split between two rows. The first one will be one day long, and the second one will fit the remaining term of the original period. You can edit the periods as applicable.
Remove	Right-click a row and choose Remove. The selected row will be removed.
Scheduler	Only applies to the Notional, Spread, and Rate columns. Open the Scheduler dialog.
Check Resets	Checks the reset rates.
Configure Columns	Allows selecting and organizing the displayed columns.
Rename Columns	Allows customizing the columns names.
Save Configure Columns	Allows saving the column configuration.

Menu Item	Description
Lock Column	Right-click a modified value and choose "Lock Column" so the value will not be overridden when the cashflows are generated. A locked column will show a star to the left of the column heading.
Lock All Modified Columns	Allows locking all columns containing modified values.
Unlock Column	Right-click a locked column and choose "Unlock Column" to unlock.
Unlock All Columns	Allows unlocking all locked columns.
Show Paydown Periods	Right-click a row and choose "Show Paydown Periods" to show any paydown.
Interest History	Right-click a row and choose "Interest History" to display the Interest History window.
Show External Flows	External cashflows are defaulted to Calypso-generated cashflows unless they have been imported from Bloomberg. You can paste cashflows copied from an Excel spreadsheet into the external cashflows. External cashflows are only saved once they have been modified.
Recalc	When cashflows have been customized, choose Recalc to displays the cashflows without overriding unlocked columns.
Generate	To generate the cashflows. ⓘ **[NOTE: If you have customized the cashflows and not locked the columns containing modified values, you should not choose Generate. Choose Recalc, which will prevent the columns from being overridden]**
Export to Excel	Allows exporting the cashflows to an Excel spreadsheet.
Export to HTML	Allows exporting the cashflows to an HTML page.

8.3 Viewing the Pricing Script

Select the Pricing Script panel to view the Pricing Script definition.



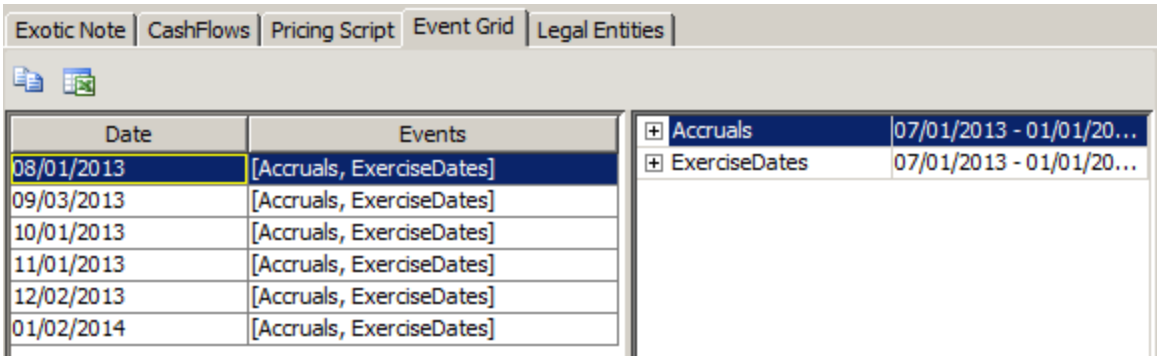
Exotic Note Definition window - Sample Pricing Script

8.4 Event Grid

Select the Event Grid to display lifecycle events for the Exotic Note. It allows checking that the dates are properly generated.

Note that lifecycle events will only appear if they have been configured for the selected Pricing Script.

▶ Please refer to Calypso Pricing Script Lifecycle Events documentation for details.



» Click to copy selected cells to the clipboard.

» Click to export the table to Excel.

8.5 Legal Entities

You can select the Legal Entities panel to specify product codes for multiple legal entities.

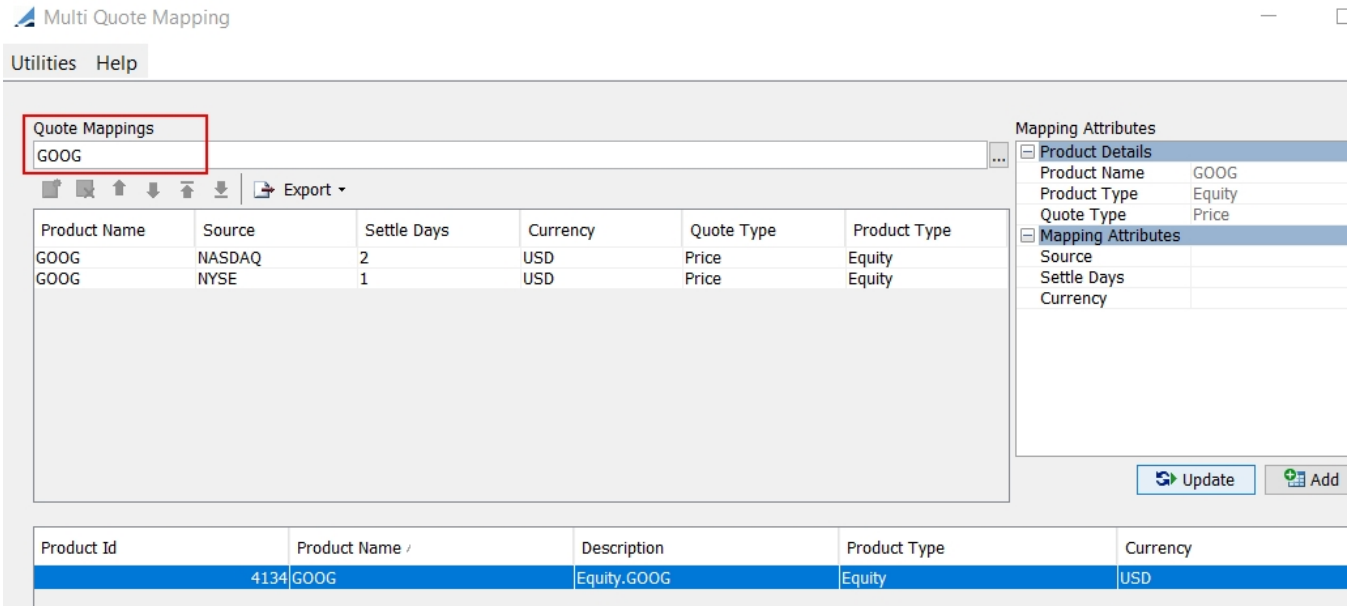

Exotic Note
CashFlows
Pricing Script
Event Grid
Legal Entities
Insert
Remove
Role
LE Short Name
LE Full Name
Product Code
Product Code Value
Marke...
NASDAQ
NASDAQ
CUSIP
US-345-000

9. Multi Quote Mapping

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

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

9.1 Defining a Quote Mapping Set



- Click **New** to define a new quote mapping set.
- Select an equity from the Quote Mappings field.
- Specify the mapping attributes in the Mapping Attributes area.

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

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

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

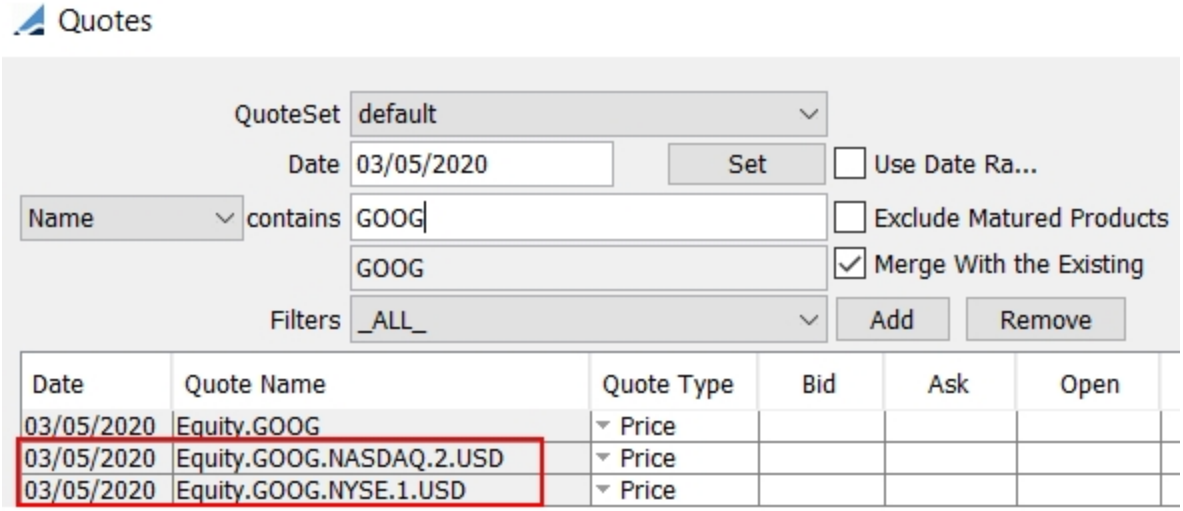
  You can highlight a row and click to delete the row.

  You can click to begin a new set and delete all rows.
- Prioritize the quotes.

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

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

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



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

» You can double-click an equity quote mapping set row in the lower half of the window to open the equity in the Equity Product Definition window.

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

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

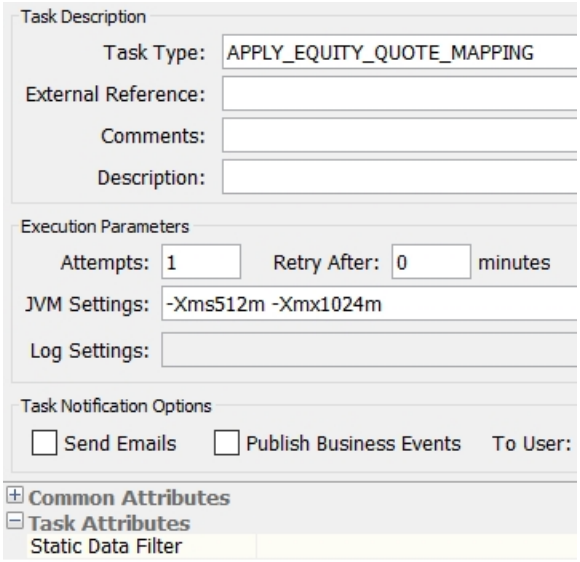
9.2 Saving CLOSE quotes

The scheduled task APPLY_EQUITY_QUOTE_MAPPING creates CLOSE quotes for the equity quotes with the highest priority based on the Quote Mapping window.

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

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

Scheduled tasks are added in the *scheduledTask* domain.



Common Attributes

Select a pricing environment.

Task Attributes

- Static Data Filter – Select a static data filter to define the scope of equities to be processed.

10. Equity Derivatives Products

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

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

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

Equity Derivatives

Product Name	Definition	Trade Worksheet
Equity / ADR	Trade equities and American Depository Receipts (ADRs).	**Trade > Equity > Equity/ADR**
Equity Forward	An Equity Forward transaction is an Over-the-Counter (OTC) trade between two parties to buy or sell an asset at a specified price on a forward date. The underlying can be an equity, an equity index, or a basket.	**Trade > Equity > Equity Forward**
Fund	▶ Refer to the *Asset Management User Guide* for details about setting up funds and trading unitized funds.	**Trade > Equity > Fund**
Mandate	▶ Refer to the *Asset Management User Guide* for details about setting up and trading mandates.	**Trade > Equity > Mandate**
Equity Swap	An Equity Swap trade is a swap where a set of future cash flows are exchanged between two counterparties. The legs of the swap can be based on an interest rate, equity, equity index, or basket.	**Trade > Equity > Equity Swap**
Dividend Swap	A Dividend Swap is an OTC agreement between two counterparties to exchange Realized Dividends versus a Fixed (Strike) Dividend on one or more Forward Dates. The Fixed Strike is stated in units of the underlying. A Dividend Swap is always cash settled.	**Trade > Equity > Dividend Swap**
Contract for Difference	A Contract for Difference (CFD) offers you the ability to buy or sell equity without actually having the stock, and to receive the dividend (or part of the dividend) against a commission. The advantage for the clients is that they do not have any stamp duty or brokerage fees; they just pay a commission. Another advantage is that they can be short on a security.	**Trade > Equity > Contract for Difference**
Equity Lending	In a Security Lending trade, you can lend or borrow equities or bonds. Typically the borrower obtains legal custody of	**Trade > Security Finance > Sec Lending**

Product Name	Definition	Trade Worksheet
	the securities. The borrower must redeliver the securities at a future date. The borrower may have to provide a security equal to the borrowed value, and an interest amount to buffer against the changing price of the loaned securities in case of default. The lender receives a fee that the parties negotiate at the time of the transaction. ▶ Refer to Calypso Security Lndingdocumentation for details.	
Variance Swap	An OTC contract whose value at maturity is based on the realized volatility experienced by the underlying, usually a stock or equity index. Pricing is based on implied volatility levels found in relevant listed option prices. There is no upfront premium for the Variance Swap and it is cash settled. The Variance Swap can be price weighted and have conditions. Pricing of Flexo/Compo/Quanto is not currently supported.	**Trade > Equity > Variance Swap**
Correlation Swap	A Correlation Swap is an OTC transaction between two parties to exchange the difference between a “Strike Correlation” and the “Realized Correlation”. The Correlation is calculated based on the period including the Observation Start Date and Observation End Date.	**Trade > Equity > Correlation Swap**
Listed Option	Exchange traded equity options offer “physical delivery” or cash settlement when exercised. The owner of an ETO option can exercise the contract at any time prior to the exercise deadline set by the investor’s brokerage firm. Generally this deadline occurs on the option’s last day of trading.	**Trade > Equity > Listed Options**
Listed Future	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 JUN12, SEP12, DEC12).	**Trade > Equity > Listed Futures**
Listed Future Option	A future option contract is a collection of future option products traded on a given exchange at a given expiry month.	**Trade > Equity > Listed Future Options**
Portfolio Swap	An agreement between counterparties to swap cash flows on fixed dates in the future over a certain period of time, where one flow is based on an equity's performance and the other on a fixed or floating interest amount as calculated using the notional value. The agreement is defined	**Trade > Equity > Portfolio Swap**

Product Name	Definition	Trade Worksheet
	by a customized contract that serves to meet the requirements of both parties.	
Warrant	The right to buy an underlying security at a certain price, quantity and future time. A warrant is issued by the issuer of the underlying security or a third party.	**Trade > Equity > Warrant/Certificate**
Warrant Issuance	Issuance of a warrant.	**Trade > Equity > Warrant/Certificate Issuance**
Equity Structured Option	Trade one of the following types of options: Vanilla – Gives the buyer the right, but not the obligation, to buy or sell an equity or equity index at a fixed price on or before a specified date. Asian – Asian or average rate options derive the final spot as the arithmetic or geometric average of a series of pre-specified dates. There are several combination of Asian: Asian Strike => geometric or arithmetic average of observations to compute the strike Lookback Strike => strike is the min (for a call) or max (for a put) over a period Asian rate => geometric or arithmetic average of observations to compute the final spot Lookbackrate => spot is the min (for a put) or max (for a call) over a period There are also double Asian: Asian strike + Asian rate Asian strike + Lookback rate Lookback strike + Asian rate Lookback strike + Lookback rate Geometric average options where the average is ((x1...xn)1/n), have a closed form solution, but are far less common in practice than arithmetic averages. Arithmetic average options where the average is ∑xn, cannot be valued using a closed form solution. There are approximations (Turnbull and Wakeman 1991), that are fairly accurate, or Monte Carlo simulations can be applied.	**Trade > Equity > Equity Structured Option**

Product Name	Definition	Trade Worksheet
	Asian option pricing algorithms use the term structure of dividends and volatilities to price the forward resets. You have the option to use a single interest rate, dividend rate, or volatility to price. The Asian option window includes a section to generate the Asian dates, and a section to view the generated dates. **Barrier** – Barrier (or Knock) options are standard options whose value depends on whether a certain barrier is reached. Options can be knocked "in" or "out". • "In" Barrier options are paid for today but first come into existence if the underlying price hits the barrier before expiration. • "Out" Barrier options begin as standard options except that the option is knocked out, or becomes worthless, if the barrier is hit. It is possible to include a previously specified cash rebate, which is paid out if an "In" option is never knocked in, or an "out" option is knocked out. There are standard closed form pricing formulas for knock options whose knock window extends over the life of the knock. If the knock window extends over part of the life of the option, it must be calculated using a lattice or Monte Carlo. **Chooser** – Allows the holder to choose whether to enter into one of two possible options on the Expiration Date. **Compound** – A European option which at maturity delivers another option which characteristics (maturity ,strike, put/call) are determined at trade inception. The underlying is the same. **Digital** – The pay out is pre-determined at the beginning of the contract and is paid according to whether the spot level is achieved (or not achieved). **Forex** – Trades where the trade currency and settlement currency different. **Lookback** – An option whose payoff is dependent on the maximum or the minimum of the asset price achieved during a certain period. **Basket** – An option may be captured on a basket of equity /	

Product Name	Definition	Trade Worksheet
	equity index. **Structured Vanilla** – Allows the user to create a vanilla trade using features from Forex, Digital, Asian, Lookback, and Barriers.	
Structured Note	Structured Notes are a type of bond where the coupon amount, the redemption amount, or both, are contingent upon an underlying equity structured option based on an equity, an equity index, or a basket.	**Trade > Equity > Structured Note**
Exotic Note	An Exotic Note is a position based product with a Pricing Script as the only payoff.	**Trade > Equity > Exotic Note**

Deal Capture Only

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

Product Name	Definition	Trade Worksheet
Warrant Certificate	The right to buy an underlying security at a certain price, quantity and future time. A certificate is issued by the issuer of the underlying security or a third party.	**Trade > Equity > Warrant/Certificate**
Warrant Certificate Issuance	Issuance of a certificate.	**Trade > Equity > Warrant/Certificate Issuance**
Variance Option	An Option on Realized Variance is a Put or Call on the "Realized Variance" over some time period. The Maturity Date of the Option is aligned with the End Date of the Variance period since the final payoff is known at that time. The Variance Option can be price weighted and have conditions.	**Trade > Equity > Variance Option**

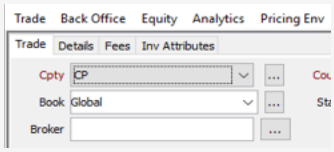
Pricing

▶ Please refer to Calypso Analytics Library (Calib) documentation for details.

11. Capturing Equity Trades

Choose **Trade > Equity > Equity/ADR** to open the Equity worksheet, from Calypso Navigator or from the Trade Blotter.

Equity Quick Reference



When you open a trade worksheet, the Trade panel is selected by default.

Configuration

» Define the equity product using **Calypso Navigator > Configuration > Equity > Equity**.

Entering Trade Details

» You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.

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

Note that the Trade Date is entered in the Details panel.

» Proceed to the other panels as applicable.

Saving a Trade

» Press F5 to save the trade, or choose **Trade > Save**.

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

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

Pricing a Trade

» An equity trade requires the following market data: a discount curve, quote for the equity. If the settlement currency is a different currency than the product currency, then an FX quote is also required.

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

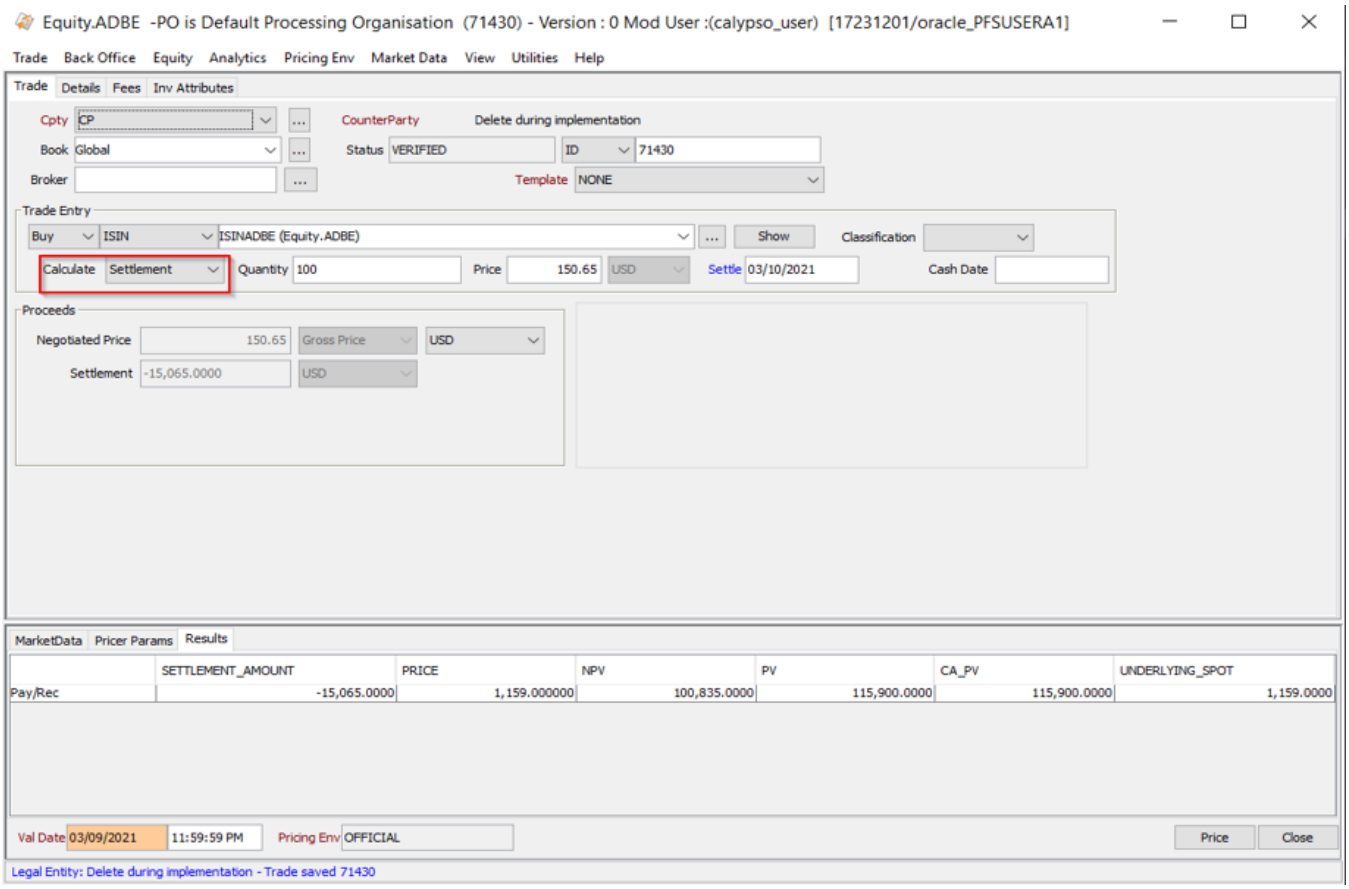
» Click **Price** to price the trade.

Trade Lifecycle

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

» You can apply corporate actions using **Calypso Navigator > Trade Lifecycle > Corporate Action > Corporate Action**, or using the CORPORATE_ACTION scheduled task.

11.1 Sample Equity Trade



» Enter the fields described below as needed.

Trade Details

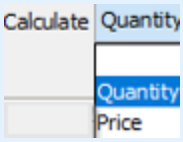
Fields	Description
Role/Cpty	The first two fields in the worksheet identify the trade counterparty. You can select a legal entity of specified role from the first field, provided you have setup favorite counterparties.

Fields	Description
	Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Alternatively, double-click the Cpty label to set the list of favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character. Otherwise, click ... to select a legal entity of specified role from the Legal Entity Chooser. The second field identifies the trade counterparty's role. The default role is specified using **Utilities > Set Default Role**. However, you can change it as applicable. Alternatively, double-click the Counterparty label to change the role.
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**. Alternatively, double-click the Book label to set the list of favorite books. Otherwise, click ... to select a book. The owner of the book (a processing organization) identifies your side of the trade.
Status	Current status of the trade. The status is automatically assigned by the system based on the workflow configuration. The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.
ID Ext Ref Int Ref	Unique identification number of the trade. The trade id is automatically assigned by the system when the trade is saved. You can load an existing trade by typing the trade id into this field, and pressing [Enter]. You can also display the internal reference 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 panels of the trade worksheet.
Template	You can select a Template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.
Broker	Select a legal entity of role Broker as needed. It adds a fee of type BRK to the Fees panel. Please select the Fees panel to modify the fee as needed.

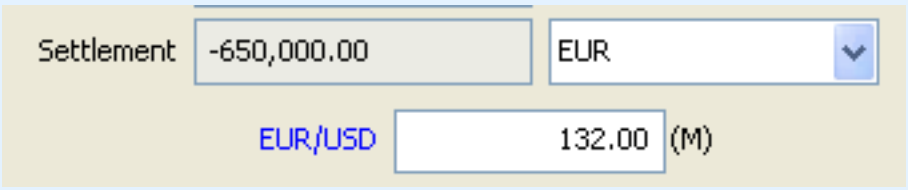
Trade Entry Details

Fields	Description
Buy / Sell	Select Buy or Sell, the direction of the trade from the book's perspective.

Fields	Description
Product code Product description	You can select an equity using one of the following methods: • Select a product code, and type in a few characters of the code value in the adjacent field. The system searches all the equities defined in the system, and those that satisfy the request are displayed in a list. Select an equity from the list. Note that the product code defaults to the Security Code selected in the User Defaults. • Click ... to select an equity from the Product Chooser Window - Help is available from that window. Once you have selected an equity, you can click **Show** to view the equity product details in the Equity Product window. ***Disabling the Product Code Search*** You can disable the product code search for performance reasons. To do so, add domain “EquityAttributes” with: Value = NOT_LOAD_EQUITY_SELECTOR_CACHE In this case, you need to use the Product Chooser Window to select a product.
Classification	You can select a classification for the trade as applicable. This classification is for information purposes only. It is stored in the trade keyword "TradeClassification", and available values can be set in domain *keyword.TradeClassification*. It can be used in filters to filter trades for various processes, and can be viewed in reports throughout the system.
Quantity	Enter the quantity that is traded.
Price	Displays the price from the pricing environment if any. You can modify the price as needed.
Calculate	The dropdown consists of below 3 values to choose from. Default would be 'Settlement': • Quantity = Calculate Quantity where user input will be Settlement Amt & Price or (Negotiated Price & Currency & Currency rate) • Price/Negotiated Price = Calculate Price/Negotiated Price where user input will be Settlement Amt & Quantity. • Settlement = Calculate Settlement Amt. where user input will be Quantity & Price or (Negotiated Price & Currency & Currency rate)

Fields	Description
	
Trade Currency	Defaults to the equity's currency.
Settle	The settlement date defaults to the trade date. If you change the trade date, double-click the Settle Date label to update the settlement date accordingly.
Cash Date	This field is used for certain markets, like the Russian market, where the settle date of the cash can be different from the delivery date of the stock. Two situations are possible: • Delivery of security after receiving cash. • Receiving security before paying cash. Defining a cash date on the trade will impact the transfers but no other areas of the trade. Settle date and Cash Date are not synchronized.

Proceeds Details

Fields	Description
Negotiated Price	Enter the negotiated price, and select the type of negotiated price from the adjacent field. The field adjacent to the price type is the trade currency. It defaults to the product currency. You can select a different trade currency. In this case, you can enter the FX rate between the product currency and the trade currency. See Settlement below.
Settlement	Displays the settlement amount and the settlement currency. The settlement currency defaults to the trade currency. If the trade currency is different from the product currency, you cannot modify the settlement currency. If the trade currency is the same as the product currency, you can select a different settlement currency. In this case, you can enter the FX rate between the trade currency and the settlement currency. You can double-click the currency pair label to get the rate from the quote set if any. 

11.2 Trading ADRs

ADRs are traded as standard equities using **Trade > Equity > Equity**.

The specificity of ADR trades though is that the ADR product can be transformed into the underlying equity, and switched back to the ADR. This is done using a specific corporate actions window.

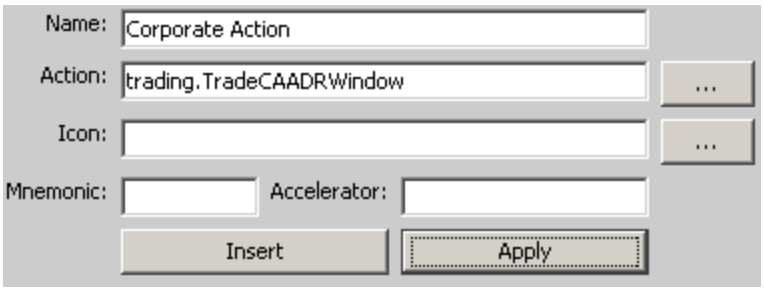
The ADR Corporate Actions window is not enabled by default.

11.2.1 Enabling ADR Corporate Actions

If not already enabled, do the following to enable the ADR Corporate Actions window.

1. Add CAADR to the *productType* domain.

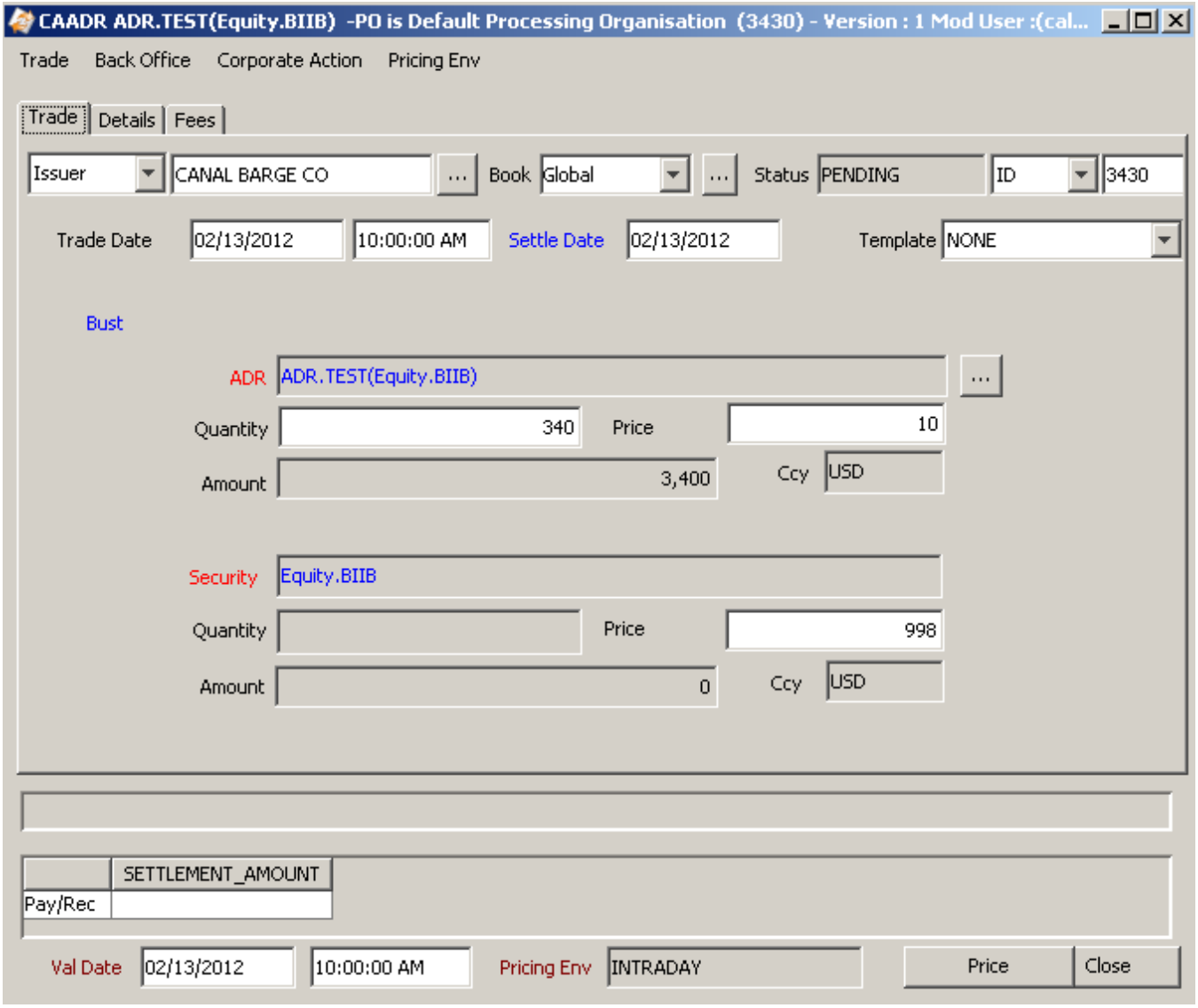
2. Choose **Calypso Navigator > Utilities > Main Entry Customizer** and insert the following menu item under the **Trade > Equity** menu as shown below.



- The Action is "`trading.TradeCAADRWindow`" and the Name "Corporate Action".
- Click **Apply**, then click **Save**, and restart Calypso Navigator.

11.2.2 Transforming ADR Trades

Choose **Trade > Equity > Corporate Action** to transform ADR trades as shown below.



ADR Corporate Action Window

» Enter the fields described below as needed, then choose **Trade > Save**.

Fields Details

Fields	Description
Role	Select a legal entity role; "Issuer" is selected as the default role. Additional legal entity roles can be defined in the *ADR.conversion.AgentRole* domain.

Fields	Description
	
Legal Entity	Select a Legal Entity of the selected role.
Book	Select a Book. Click ... to configure the books available in the drop-down menu.
Status	Current status of the trade.
ID Ext Ref Int Ref	You can enter an ID, external reference, or internal reference to load a trade.
Trade Date	Enter the trade date.
Settle Date	Enter the settle date.
Template	You can select a temple from the drop-down menu.
Create / Bust	Direction of the transformation. Double-click the Create label to change to Bust as applicable. • Create – To create the ADR position from the underlying equity. • Bust – To transform the ADR position into the underlying equity position.
ADR	Click ... to open the Product Chooser window for selecting an ADR. Help is available from that window. You can double-click the ADR label to display the ADR's details.
Quantity	Enter the quantity of ADR that you are transforming.
Price	Enter the unit price of the ADR.
Amount	The amount is calculated as quantity * price.
Ccy	Displays the currency of the selected ADR.
Security	The underlying equity of the selected ADR is displayed.
Quantity	The quantity is calculated based on the ADR's ratio and quantity.
Price	Enter the unit price of the underlying equity.
Amount	The amount is calculated as quantity * price.
Ccy	Displays the currency of the underlying equity.

12. Capturing Future Trades

Choose **Trade > Equity > Listed Futures** to open the Future worksheet, from Calypso Navigator or from the Trade Blotter.

Equity Future Quick Reference

When you open a Future worksheet, the Trade panel is selected by default.

ⓘ **[NOTE: The trade counterparty must be a clearer, so you must have defined a legal entity of role Clearer]**

Configuration

- Define the exchange where the future trades using **Calypso Navigator > Configuration > Legal Data > Entities**.
- Define the holiday calendar using **Calypso Navigator > Configuration > Definitions > Calendar Definitions**.
- Define date rules using **Calypso Navigator > Configuration > Definitions > Date Schedule Definitions > Date Rule**.
- Define the equity product using **Calypso Navigator > Configuration > Equity > Equity**.
- Define the future contracts using **Calypso Navigator > Configuration > Listed Derivatives > Future Contracts**.

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.

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

Saving a Trade

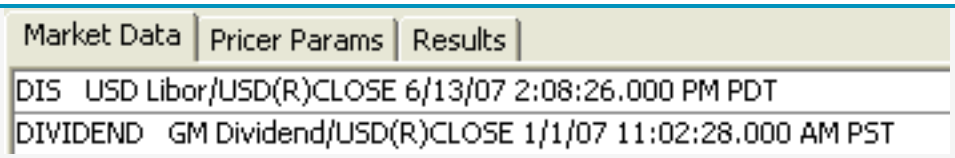
- Press F5 to save the trade, or choose **Trade > Save**.

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

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

Pricing a Trade

- 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.

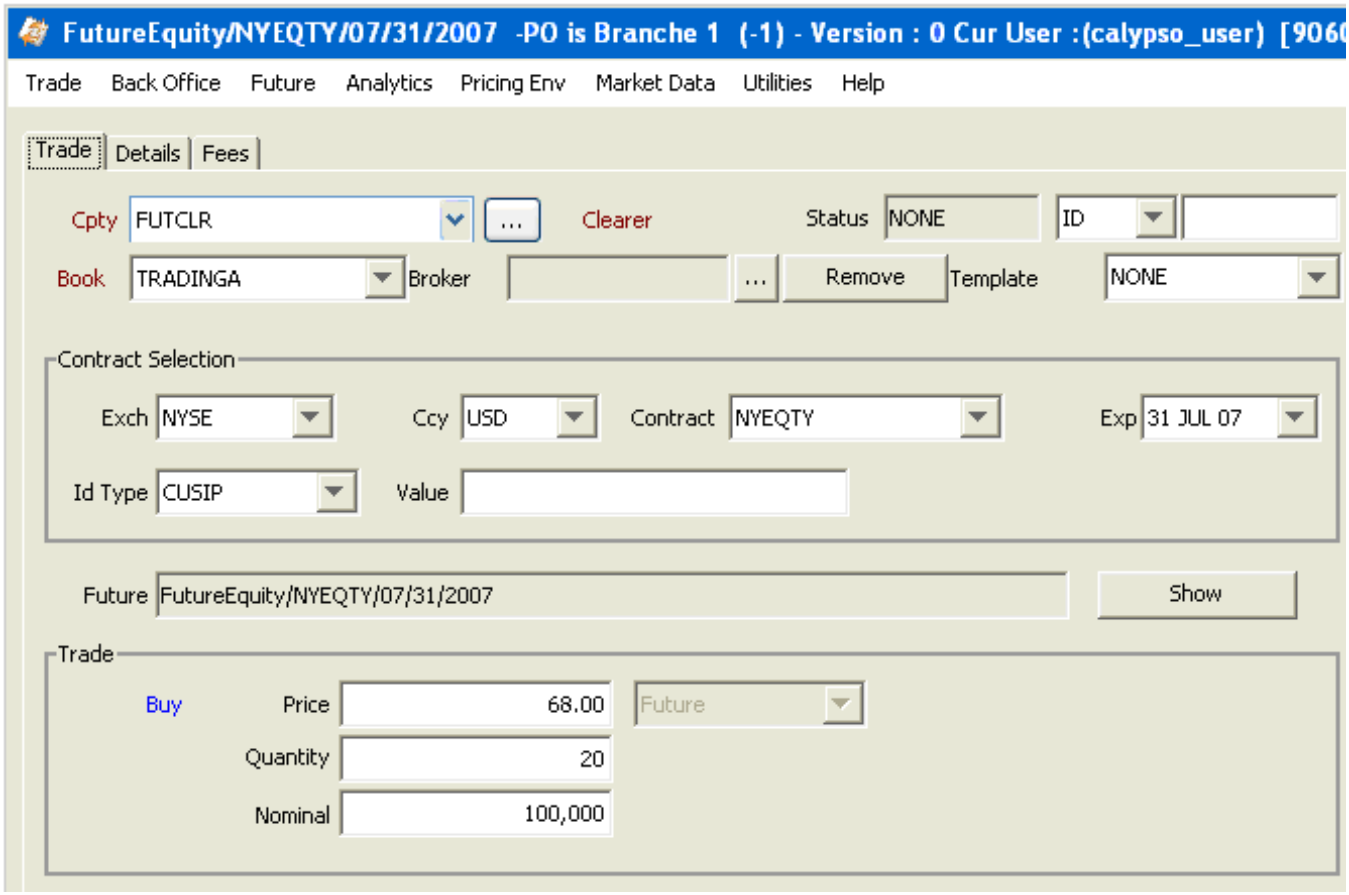


- You can choose **Pricing Env > Check** to check if all required pricing data are available in the Pricing Environment.
- Click **Price** to price the trade.

Trade Lifecycle

- You can allocate the trade to multiple books using **Back Office > Allocate**.
- You can terminate the trade using **Back Office > Terminate**.
- You can liquidate the trade manually using **Back Office > Manual Liquidation**.
- You can expire futures using **Calypso Navigator > Trade Lifecycle > Expiration & Exercise > Future Expiry**, or the FUTURE_EXPIRY scheduled task.
- You can compute margin calls on the clearing accounts in real-time or in batch mode.

Sample Trade



Equity Future Trade Window - Sample Trade

» Choose **Help > Trade Help** for complete details.

13. Capturing Equity Swap Trades

An equity swap can have multiple flavors:

- Amortizing swap: equity / equity index / future equity index against interest rate
- Basket against equity
- Basket against interest rate
- Equity / equity index / future equity index against equity / equity index / future equity index
- Equity / equity index / future equity index against interest rate

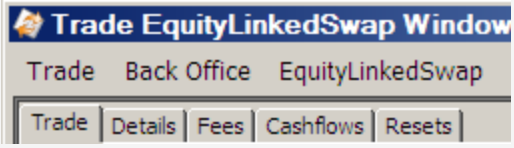
For equity, equity index, future equity index, and basket legs, the swap can be:

- Total return – The return is based on performance and dividend
- Price return – The return is based on performance only
- Dividend – The return is based on dividend only

[NOTE: If you want to capture a dividend swap against a fixed amount instead of an interest rate or another asset, you can use the Dividend Swap worksheet - See Capturing Dividend Swaps for details]

Choose **Trade > Equity > Equity Swap** to open the Equity Linked Swap (ELS) worksheet from Calypso Navigator or from the Trade Blotter.

Equity Swap Quick Reference



When you open a trade worksheet, the Trade panel is selected by default.

Underlying Configuration

» Equity products are created using **Calypso Navigator > Configuration > Equity > Equity**.

» Equity index products are created using **Calypso Navigator > Configuration > Equity > Equity Indexes**.

» Baskets are created using **Calypso Navigator > Configuration > Basket**.

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, see Field Description.

[Note: the Trade Date is entered in the Details panel]

» Proceed to the other panels as applicable.

Saving a Trade

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

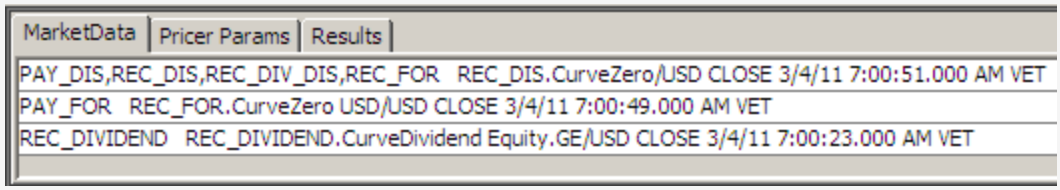
You can also hit F3 to save the current trade as a new trade, or choose **Trade > Save As New**.

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

Pricing a Trade

» PricerEquityLinkedSwap

An equity linked swap trade requires the following market data: a discount curve, forecast curve, dividend curve, quote for the underlying product, the first rate reset.



If the payment currency is a different currency than the product currency, then an FX rate is also required.

» PricerEquityLinkedSwapAccrual

Accrual pricing approach defines the ELS value by recognizing only the unrealized performance and financing based on today's value of the underlying asset. Future flows are not considered while pricing.

NPV = Unpaid performance + Unpaid incomes-Financing Costs

If the deal can be terminated at any time without taking future flows into account Accrual pricing methodology should be used.

Added the pricing parameter FIXING_DATE_ACCRUAL.

True or False. Determines when a cash flow is no longer included in the NPV of the swap. True so that cash flow realization is based on the fixing date. False so that the cash flow realization is based on the payment date.

Default is false.

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

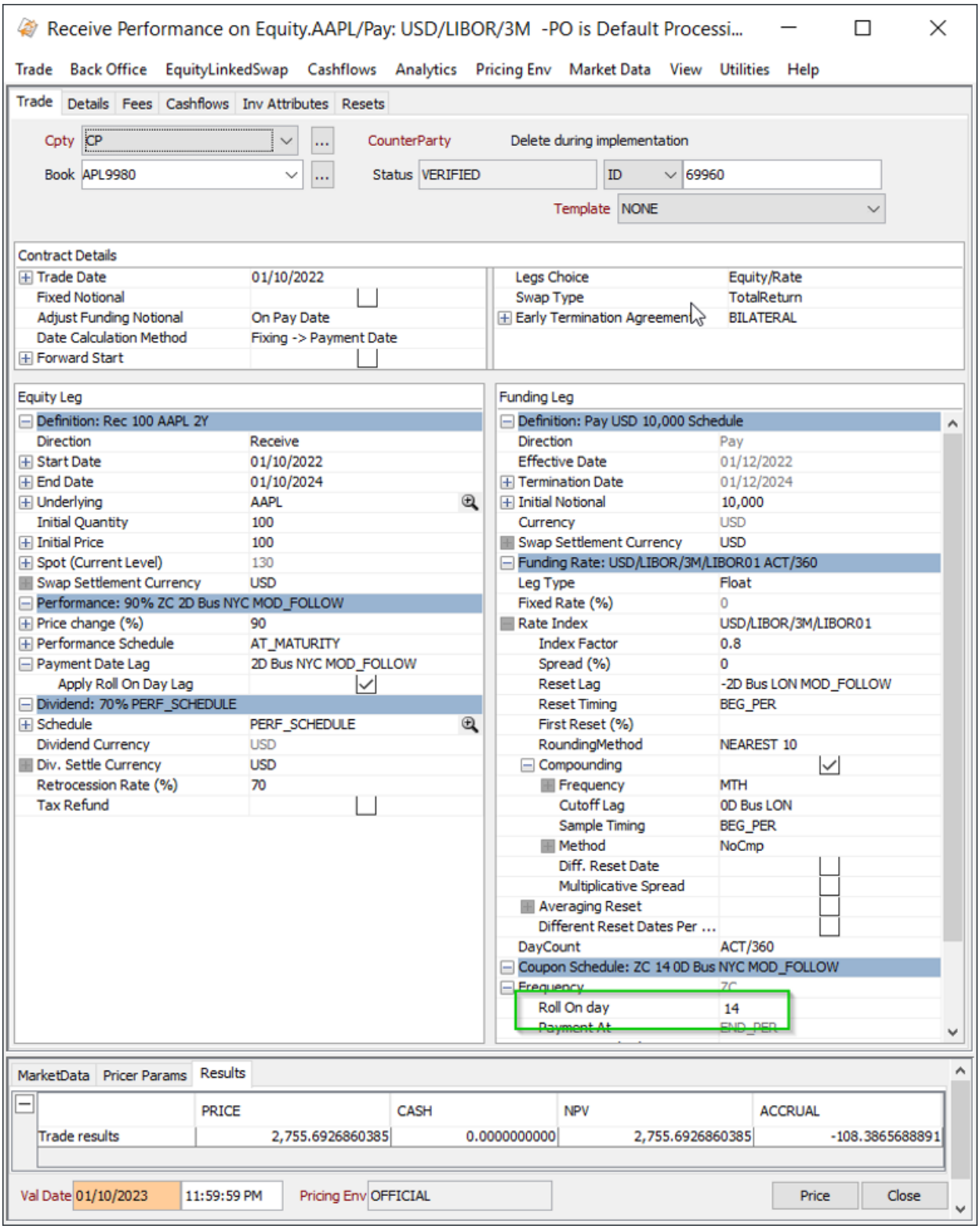
» Click **Price** to price the trade.

Trade Lifecycle

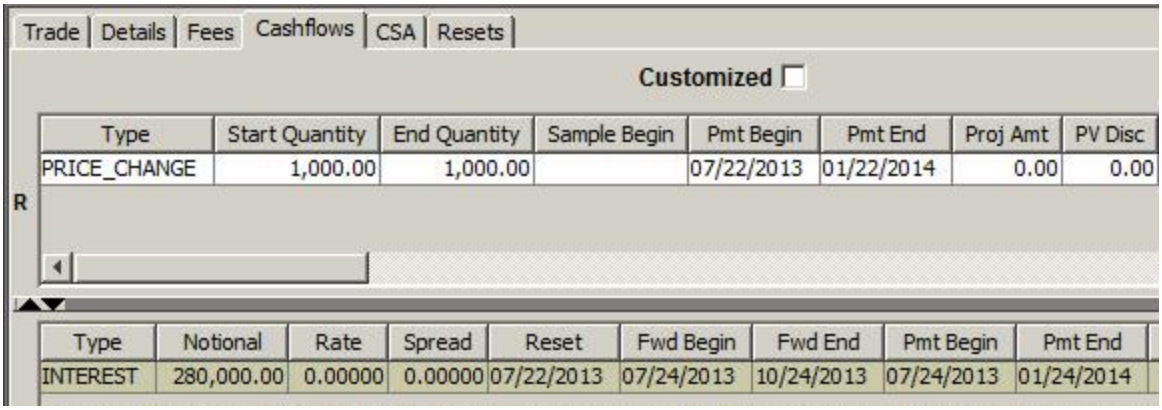
- You can allocate the trade to multiple books using **Back Office > Allocate**.
- You can terminate the trade using **Back Office > Terminate**.
- You can fix prices and FX resets using **Calypso Navigator > Trade Lifecycle > Reset > Price Fixing** or by using the PRICE_FIXING scheduled task.
- You can apply corporate actions using **Calypso Navigator > Trade Lifecycle > Corporate Action > Corporate Action**, or using the CORPORATE_ACTION scheduled task

13.1 Sample Trade

13.1.1 Total Return Swap on Equity



Equity Swap - Sample Total Return Trade



Equity Swap - Sample Total Return Cashflows

- The interest rate part of the trade generates interest cashflows.
- The performance part of the trade generates PRICE_CHANGE cashflows based on the performance schedule – They correspond to price fixings.

  These cashflows are generated for TotalReturn and PriceReturn swaps.
- The dividend part of the trade generates DIVIDEND cashflows based on the dividend schedule – They correspond to realized dividends.

  These cashflows are generated for TotalReturn and Dividend swaps.

  For an underlying basket, there would be one DIVIDEND cashflow for each component of the basket as applicable.

▶ See Cashflows Details for a description of the most relevant columns.

13.1.2 Fields Description

Trade Details

Fields	Description
Role/Cpty	The first two fields in the worksheet identify the trade counterparty. You can select a legal entity of specified role from the first field provided you have setup favorite counterparties. Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Alternatively, double-click the Cpty label to set the list of favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character. Otherwise, click ... to select a legal entity of specified role from the Legal Entity Chooser. The second field identifies the trade counterparty's role. The default role is specified using **Utilities > Set Default Role**. However, you can change it as applicable. Alternatively, double-click the CounterParty label to change the role.

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**. Alternatively, double-click the Book label to set the list of favorite books. Otherwise, click ... to select a book. The owner of the book (a processing organization) identifies your side of the trade.
Status	Current status of the trade. The status is automatically assigned by the system based on the workflow configuration. The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.
ID Ext Ref Int Ref	Unique identification number of the trade. The trade id is automatically assigned by the system when the trade is saved. You can load an existing trade by typing the trade id into this field, and pressing [Enter]. You can also display the internal reference of external reference. The default trade reference 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.
Template	You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.

Contract Details

Fields	Description
Trade Date	The trade date defaults to the current date. Modify as applicable. You can double-click the Trade Date label to specify the trade time in the Trade Time field. You can also check the Current checkbox to save the trade with the most current trade date and time.
Fixed Notional	Check for notional-based equity swap. Only available for Equity/Rate equity swaps. When Fixed Notional is checked, you can enter an Initial Notional on the funding leg, and the Quantity is calculated as Initial Notional / Initial Price. The field Forward Start Type is set to Notional Based.
Adjust Funding Notional	Only available if Fixed Notional is not checked. Select the notional adjustment method: • No Adjustment – The Notional of the funding leg remains constant.

Fields	Description
	• On Pay Date – The Notional of the funding leg equals the Fixing of the Prior Leg * Initial Quantity. The Notional will adjust on the payment date. • On Fixing Date – The Notional of the funding leg equals the Fixing of the Prior Leg * Initial Quantity. The Notional will adjust on the fixing date.
Adjust Quantity	Only available if Fixed Notional is checked. It is set by the system based on the selected Date Calculation Method: • If Date Calculation Method = Independent, Adjust Quantity is set to "No Adjustment". • If Date Calculation Method = Fixing -> Payment Date, Adjust Quantity is set to “On Fixing Date”. • If Date Calculation Method = Payment -> Fixing Date, Adjust Quantity is set to “On Pay Date”.
Date Calculation Method	Select the Date Calculation Method: • Independent - Performance and funding leg dates are calculated independently. • Fixing Date -> Payment Date - Funding payment dates are determined by Performance payment dates. Fixing date lag on Performance leg is non-editable. It is possible to define a Reset date lag on the Funding leg. • Payment Date -> Fixing Date - Performance payment dates are determined by Funding payment dates. It is possible to define a Fixing date lag on the Performance leg.
Forward Start	Check for a forward starting trade. • When clear, it is not possible to save a trade without initial price and quantity. • When checked, it is possible to save a trade without initial price and quantity. The trade must have the notional entered (on the funding leg). The Start Date is the strike date (or the fixing date) on which the initial price is "fixed" and the quantity becomes known. Performance cashflows (price change and dividend) are foretasted using the quantity = notional/FORWARD price at the fixing date. If the settlement currency is different from the underlying currency, the "Initial FX Rate" field can be empty. It can be entered manually, or retrieved from the market data. The scheduled task UPDATE_ELS_FORW_START updates the trades when the price is known on the start date: Price = quote and Initial Quantity = Initial Notional/Initial Price. When checked, you can select if the trade is Notional Based or Quantity Based. Notional Based = The notional of the funding leg is known on the trade date and the quantity is calculated based on the fixing as of the Start Date of the Performance leg. Quantity Based = The quantity is known on the trade date and the notional will be calculated based on the fixing as of the Start Date of the Performance leg.
Legs Choice	Select the type of swap you want to perform:

Fields	Description
	• Amortizing_Swap • Basket/Equity • Basket/Rate • Equity/Equity • Equity/Rate Each type of leg is described below.
Swap Type	The following subtypes are included out-of-the-box: • TotalReturn – The return is based on performance and dividend. • PriceReturn – The return is based on performance only. • Dividend – The return is based on dividend only. You can extend the list of subtypes in the *EquityLinkedSwap.subtype* domain.
Early Term Agreement	Select the type of early termination agreement: • BILATERAL: Both parties have the right to terminate the transaction. • CP: Only the counterparty can terminate the transaction. • PO: Only the processing org can terminate the transaction. You can double click the "Early Termination Agreement" label and enter a lockout date as applicable in the Lockout Date field. During the lockout period (between the start date and the lockout date), neither party can terminate the contract. The NPV of the deal is only made up of the accrued interest.

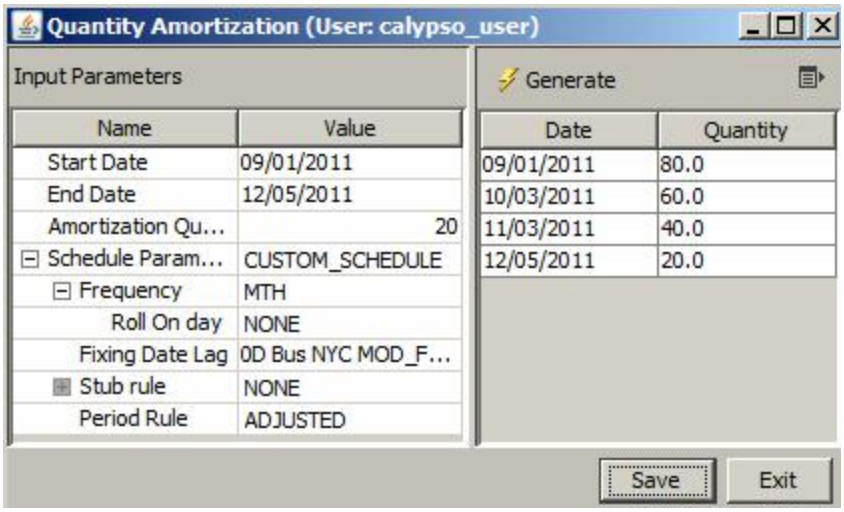
Amortizing Details

The Amortizing Swap is similar to an Equity Swap (Equity / Equity Index against Interest Rate) except that the quantity is amortized over the life of the trade. The amortization can either be a fixed number of shares, or manually entered by the user. The amortization is applied based upon the amortization schedule defined by the user in the Quantity Amortization window.

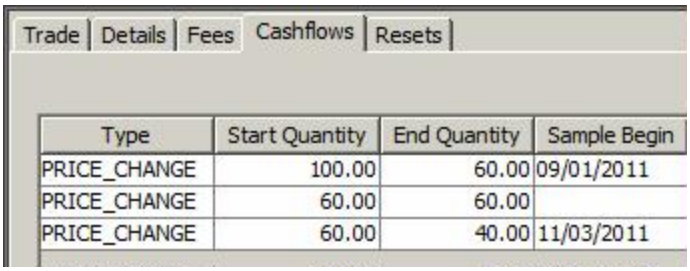
Amortizing Swaps pay a dividend on the Amortized Quantity and use an average as the Fixing Level of the Performance leg, which is based on the Reset Frequency. The Fixing Level used for performance flow calculation is the average of the Fixing Price for each reset.

The equity details of the Amortizing Swap contain the following additional fields.

Fields	Description
Amortization Quantity	You can enter a quantity for a fixed amortizing schedule. Click  to open the Quantity Amortization window.

Fields	Description
	 » The input parameters are retrieved from the trade. Modify as needed and click **Generate** to generate the amortization schedule. You can modify the date / quantity as needed in the generated schedule. The quantity is the remaining quantity as of a given date. » Click **Save** to save the schedule.
Remaining Quantity	Remaining quantity as of the valuation date.
Averaging Method	Select Simple or Weighted (based on amortized quantity) for computing the performance.

The cashflows reflect the amortized quantity.



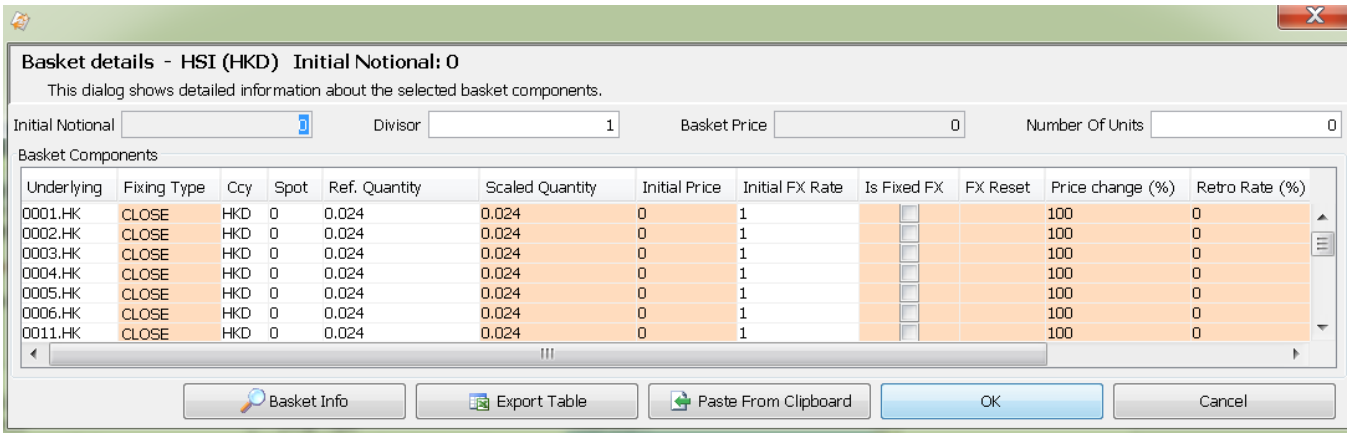
Equity Basket Leg Details

The equity basket details are the same as the equity details with the additional fields described below.

Fields	Description
Reference Basket	Select a basket. Baskets are defined using **Calypso Navigator > Configuration > Basket** - Help is available from that window. **[Note: Only baskets weighted in quantity are supported]**

Fields	Description
	When you select a basket, it brings up the Basket Components window - See Basket Components below for details. You can double-click the reference Basket label to display some basket details: • Basket currency • Fixing type – The only supported Fixing type in the case of Basket underlying is CLOSE. You can set the fixing type for the individual underlyings in the Basket Components Window. • Corporate name
Basket Initial Notional	Basket notional based on the basket components. You can double-click the Basket Initial Notional label to view some basket details: • Initial basket price • Divisor • Number of units • Quote type • Currency

Basket Components



Basket Components Details

» You can select the fixing type, set the initial price, set percentage of performance paid or received, and set the retrocession rate for each component.

– **Number Of Units**: The quantity of the equity basket swap that is traded. This number is constant and does not change during trade life unless there is partial termination or notional increase.

– **Basket Price**:

Basket Price = $(\sum_{i=1}^{n^{th}} \llbracket Shares_i \times Price_i \rrbracket \times FX_i) / Divisor$

Where

Shares_i = The weighting of an equity issue within the Basket

Price_i = The current price of each equity share

FX_i = The currency adjustment (for any equities quoted in a currency other than the Basket currency)

The basket notional is defined as:

Basket Notional = $(\sum_{i=1}^{n^{th}} [\![Shares_i \times Price_i]\!] \times FX_i)$

- **Divisor**: A fixed basket-level constant.
- **Fixing Type**: Fixing types are defined in the Equity Definition window. If not selected, the default is CLOSE, indicating that the fixing is done using the spot quote.

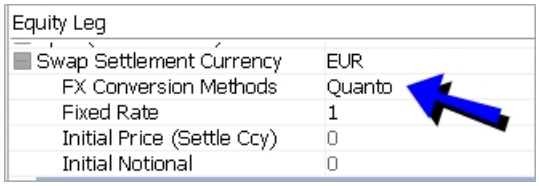
  ▶ See Equity Definition for details.

» You can click **Basket Info** to bring up the Basket Definition window - Help is available from that window.

Equity Leg Details

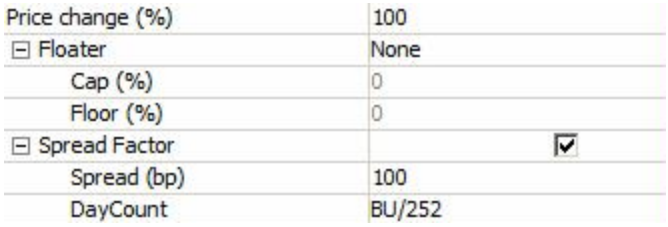
Definition

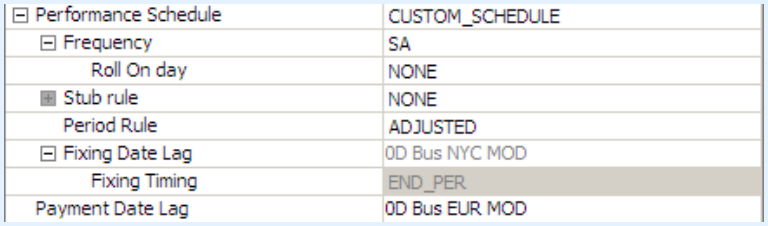
Fields	Description
Direction	Direction of the leg from the book's perspective. Click the field to select either Pay or Receive.
Start Date End Date	Enter the start and end dates. You can double-click the Start Date and End Date labels to specify fixing start and end dates.
Underlying	Select the underlying: equity or equity index. You can also type in the underlying's name. You can double-click the Underlying label to display some underlying details: • Default security code used for searching the underlying (it is retrieved from the User Defaults). • Underlying currency. • Fixing Type – Select an equity reset as needed. Equity resets are defined in the Equity Definition or Equity Index Definition. If not selected, the default is CLOSE, indicating that the fixing is done using the spot quote. You can view details about equity resets in the Resets panel. ▶ See Resets Details for more information. • Corporate name.
Initial Quantity	Enter the initial number of shares that are exchanged.
Initial Price	Enter the initial price. This price will be used to calculate the first payoff. You can double-click the Initial Quantity label to view the quote type and currency of the initial price.

Fields	Description
Quote Type	The type of quote is displayed.
Currency	The asset's reference currency.
Spot (Current Level)	Displays the current market price if any (current quote retrieved from the quote set). You can double-click the Spot label to display the quote type of the market price.
Swap Settlement Currency	Select the settlement currency. If the settlement currency is different from the underlying currency, you can select the FX Conversion Method. The choices are Quanto / Compo and Local as defined below. ***Quanto***  Quanto corresponds to current behavior when "Is Fixed FX" is checked. The following fields will be available: Fixed Rate, Initial Price (Settle Currency), Initial Notional. The system displays the initial price / notional in settlement currency. ***Compo*** Compo corresponds to current behavior when "Is Fixed FX" is unchecked. The following fields will be available: Initial FX Rate, FX Reset, FX Reset Date Lag, Initial Price (Settle Currency), Initial Notional. When the FX Conversion method is Compo, Only Performance flow "FX Reset Date" is derived from FX Reset Date Lag. FX Rate Definitions are created using **Calypso Navigator > Configuration > Foreign Exchange > FX Rate Definitions**. The system displays the initial price / notional in settlement currency. ***Local*** The following fields will be available: FX Reset and FX Reset Date Lag. The system displays the initial price / notional in underlying currency. In the case of Local FX conversion method, both Performance and Funding flow FX Reset Dates are derived from FX Reset Date Lag. **[Notes: You can view settlement currency details in the cashflows by adding the following columns: Pay Start Price, Pay End Price, Pay Proj. Start Price, Pay Proj. End Price]** ***FX Reset Date Lag*** FX Reset Fixing will be used to derive the FX Reset Date on Performance and Funding flow. The default

Fields	Description
	value of FX Reset Fixing is set to CashflowPaymentEndDate. CashflowPaymentEndDate: To apply FX Reset Date Lag on payment end date. CashflowPaymentDate: To apply FX Reset Date Lag on payment date.

Performance – Only applies to TotalReturn and PriceReturn swaps.

Fields	Description
Price Change %	Enter the percentage of performance that the equity leg receives or pays. You can double-click the Price Change label to define limits and a spread factor as applicable.  » Select the type of limit from the Floater field. – None: No limit. – Cap: Enter a maximum performance in the Cap field, in percentage. – Floor: Enter a minimum performance in the Floor field, in percentage. – Collar: Enter a maximum and minimum performance in the Cap and Floor fields, in percentage. » Check Spread Factor to define a spread. Then enter the spread and select the daycount. PRICE_CHANGE = Quantity * Spread Factor * Price Change (%) * (End Price * End FX – Start Price * Start FX) + Spread Factor * Quantity * Start Price * Start FX
Performance Schedule	Select the performance payoff schedule. • AT_MATURITY: The final payoff occurs on the end date. • CUSTOM_SCHEDULE: Enter the fields below to specify the payoff frequency.

Fields	Description
	 Select a payoff frequency, a roll day for weekly and monthly frequencies, stub rule if any, and period rule. The period rule can be ADJUSTED or UNADJUSTED to determine if the end date of a payoff period is adjusted or not when it falls on a non-business day (applicable with BUS lag payment), or select FRN or MAT_UNADJUSTED. • DATE_RULE: Select a date rule for generating the payoff schedule. The fixing date lag defaults to zero, and the fixing calendar defaults to the holiday calendar of the exchange for the stock/index. You can specify a different fixing lag as needed if the Date Calculation Method is not "Fixing -> Payment Date". Shortcut – You can enter for example 2b to specify 2 business days. Under fixing to payment date calculation method, cashflows generated on equity leg based on stub rule selection would drive the cashflow generation of funding leg. Under the independent Date Calculation method, stub rules from equity leg and funding leg will be independently used to generate cashflow periods for equity and funding legs.
Payment Date Lag	The payment lag defaults to the spot days of the reference stock/index: number of days between the payoff date and the actual payment date. You can specify a different payment lag as needed if the Date Calculation Method is not "Payment -> Fixing Date". The holiday calendar defaults to the calendar specified for the payment currency in the currency definition. Payment Holiday calendar will be used for period generation and Settle Holiday calendar will be used for payment date calculation. Shortcut – You can enter for example 2b to specify 2 business days.
Apply Roll Lag on Cmp Cashflows	When Apply Roll Lag on Cmp Cashflows checkbox will be checked, lag will be applied on the compounded cashflow dates calculated based on Roll On Day and Roll on Day Lag (derived from payment date lag on equity leg) field to get desired / adjusted dates.

Dividend – Only applies to TotalReturn and Dividend swaps.

Fields	Description
Schedule	Select the payment schedule associated with the equity: • NONE – No dividend payment. • AT_MATURITY – The dividend, if any, will be paid / received on the end date. • UPON_RECEIPT – The dividend, if any, will be paid / received on the dividend date. You can double-click the 0 Bus label in the Date Lag field to set a payment lag between the dividend date and the payment date. • PERF_SCHEDULE – Dividend will be recognized upon recognition, i.e. in the period corresponding to the ex-div date of the dividend. The dividend, if any, follows the performance payoff schedule. If Dividend Pmt Date is after the Trade End Date, Dividend Pmt Date in the cashflow will be the same as Trade End Date. • ASIAN_SCHEDULE - Dividend ownership relies on Ex-Div Date included in the period: when Trade Start Date < Ex-Div date, dividend is generated and when Trade Start date > Ex-div date, dividend is not generated. For the last flow of the schedule, dividend ownership is also driven by ex-div date: divPay date > startDate, divPay <= end date. • FUNDING_SCHEDULE - The payment date of the dividend flow is the first funding payment date on or after the dividend date. ***Dividend Ownership*** Does not apply to schedule NONE or ASIAN_SCHEDULE. You can select one of the following options: • Second Period - It relies on dividend ex-div date and it means each period from, but excluding, one fixing date to, and including, the next fixing date, except that the initial dividend period will commence on, but exclude, the trade date and the final dividend period will end on, and include, the final fixing date. • First Period - It relies on dividend record date included in period: record date >= funding leg effective date, record date < funding leg termination date.
Dividend Currency	Dividend currency of the underlying.
Dividend Settlement Currency	Select the dividend settlement currency. If the dividend settlement currency is different from the dividend currency, you can set the initial FX rate in the field Initial FX Rate. You can then specify if the FX rate is fixed or not. If it is not fixed, you can select the FX Rate Definition that will be used to fix the FX rates. FX Rate Definitions are created using **Calypso Navigator > Configuration > Foreign Exchange > FX Rate Definitions**.

Fields	Description
	FX Reset Fixing: Dividend Record Date - In this case, the dividend record date will be used to derive the FX Reset date. Dividend Payment Date - In this case, the original dividend payment date will be used to derive the FX Reset date. Cashflow Payment End Date - In this case, the original cashflow payment end date will be used to derive the FX Reset date. Cashflow Payment Date - In this case, the original cashflow payment date will be used to derive the FX Reset date.
Retrocession Rate (%)	Enter the percentage of dividend to be received or paid.
Tax Refund	Check this checkbox to indicate a refund for the taxes attached to the dividend. This is for information purposes only. This information is available in the Trade Browser. The system does not use this information to generate any cashflows or fees.

Funding Leg Details (Interest Rate)

Definition

Fields	Description
Direction	Direction: Pay or Receive. It is set based on the other leg's direction.
Effective Date	Effective date. It is set based on the trade's start date.
Termination Date	Termination date. It is set based on the trade's end date. You can double-click the Termination Date label to display the duration of the trade as a tenor, and the remaining days as of the valuation date.
Initial Notional	Initial trade amount in settlement currency. The amortization type is set by the system. Initial Notional Currency field is non-editable in Equity Linked Swap trade and is populated from the underlying security currency.
Currency	Settlement currency.

Funding Rate

Fields	Description
Leg Type	Select Fixed or Float.
Fixed Rate %	For a fixed leg, enter the fixed rate.

Fields	Description
	You can click to define a fixed rate schedule.
Rate Index	For a floating leg, select the rate index: currency, reference index, tenor, and source. You can also set the following parameters: • Index Factor • Spread in %. You can click to define a spread schedule. Spread changing intra reset periods is not currently supported. • Reset Lag - Number of day, bus / cal, holidays, date roll Use Observation Shift Period - When checked, it includes an Observation Shift that allows shifting the whole Sample Period in addition to the Reset Dates, such that the weights of any given daily fixing remains the same. • Reset Timing • First Reset in % • RoundingMethod - Rounding method and number of decimals.
Compounding	Check Compounding to enable compounding and specify the following fields as needed. **Frequency** - Select the compounding frequency. For WK/BIWK/LUN, you can select Original or Regular. Difference between Original and Regular (Example for a 3M swap paying MONTHLY compounding WEEKLY): • Original splits the 90 days into periods of 7 days and puts the remaining as STUB. • Regular splits the 90 days into 3 periods of 30 days each, and then splits the 30 day periods into periods of 7 days thus leaving stubs on each coupon period. **Cutoff Lag** - Only available for DLY frequency. You can enter a number of days for the cutoff lag, bus / cal days and holidays. **Sample Timing** - Only available for DLY frequency. Select BEG_PER / END_PER. **Method** - Select the compounding method: • Flat - Flat compounding - The spread is added after the compounding is computed if any. Current period interest is calculated using floating rate plus spread. But compound interest is calculated using floating rate only (and the spread is not added). • Spread - The interest compounds at the rate value plus spread. Enter the Spread in the Compounding Spread field. • SimpleSpr - This involves compounding the Floating Rate but treating the spread as simple interest. In other words, the floating rate interest is earned at the end of a period but not the spread (only the floating rate is added back into the principal). The spread is then calculated on the principal for the entire calculation period without compounding. • NoCmp - A cashflow is created at the compounding period without actually compounding the interest. The daily rate resets for the floating rate are used to

Fields	Description
	calculate the simple interest everyday and summed to find the total interest for the period. **Diff. Reset Date** - Check to generate the reset dates based on the coupon frequency. It uses the index tenor otherwise. **Multiplicative Spread** - Check "Multiplicative Spread" so that the spread over the rate index is multiplicative rather than additive.
Averaging Reset	Check Averaging Reset to enable averaging reset and specify the following fields as needed. **Averaging Method** - Select the averaging method: • Cutoff Adj. (Only applies to Daily reset) - Calculates weighting up to cutoff date. The cutoff date is set as a number of days from the last sample period's end date in Cutoff Days. • Cutoff Weekly (Only applies to weekly reset) - If you specify a reset cutoff, the last sample period will be "end date – reset cutoff". Set the cutoff lag in Cutoff Days. • Equal - Resets within the sampling period are equally weighted. You can specify a cutoff lag as needed to freeze the daily fixings for the remainder of the period. • Simple - The reset rate is calculated as the mean rate within the sampling period. You can specify a cutoff lag as needed to freeze the daily fixings for the remainder of the period. • Weighted - Resets are weighted according to the number of days for which they apply. For example, if a reset occurs on a Monday, the weight is 1 day; if it occurs on a Friday, the weight is 3 days (Friday, Saturday and Sunday). You can specify a cutoff lag as needed to freeze the daily fixings for the remainder of the period. **Frequency** - Select the reset frequency to sample resets at a frequency different from the coupon frequency. Otherwise, the resets are sampled at the coupon frequency. For Cutoff Days, you can enter the number of days, select bus / cal and the holidays. **Averaging Period Rule** - Select the period rule: • Match - Rates are sampled over the entire averaging period. • Custom - Rates are sampled over a user-defined period. Define the number of days of the sampling period in Start Offset.
Different Reset Dates per Coupon	Check to generate the reset dates based on the coupon frequency. It uses the index tenor otherwise.
DayCount	Specify the day-count convention. Daycount defaults to the day count of the Rate Index. See **Calypso Navigator > Help > Day-Count Conventions** for descriptions of the day-count conventions.

Fields	Description
Frequency	The payment frequency and stub rule are set based on the selected performance schedule.
Roll On Day	Roll On Day to be set by user to generate desired compounded cashflows dates.
Coupon Schedule	The coupon schedule is set based on the selected performance schedule.
Stub Rule	The stub rule is set based on the selected performance schedule.
Period Rule	The period rule is set based on the selected performance schedule.
Payment Date Lag	The payment date lag is set based on the selected performance schedule.

13.2 Cashflows Details

13.2.1 Performance Cashflows

Performance cashflows have the type PRICE_CHANGE. The columns calculated for performance cashflows are described below.

Columns	Description
Start Quantity End Quantity	Start Quantity and End Quantity are identical for the ELS equity leg.
Pmt Begin Pmt End	Start and End period. Usually End Date corresponds to the payment date and matches the Start Date of the following period.
Fixing Date	The date when a price fixing has occurred.
Start Price End Price	The Start Price and End Price correspond to the asset price observed to calculate the performance on asset. By definition Start Price corresponds to the End Price of the previous period.
Start FX Rate End FX Rate	If the reference currency does not match the pay currency, then the Start Price and End Price will be converted into the pay settlement currency using the FX rates available on the Start Date and End Date. The performance amount will be calculated as: Amount = Quantity * (endPrice*EndFXRate - startPrice*StartFXRate) * Performance%
Pay Start Price Pay End Price	The start price in the pay currency = Start Price * Start FX Rate. The end price in the pay currency = End Price * End FX Rate.
Amount	The payoff is calculated according to the ELS definition: Simple Payoff Amount = Quantity * (endPrice - startPrice) * Performance% Cap: If Perf > CapPerf then EndPrice = (startPrice* capPerf) + startPrice

Columns	Description
	Floor: If Perf < FloorPerf then EndPrice = (startPrice * floorPerf) + startPrice RangeFloater: Cap and Floor cases mixed. **[Note: if the equity currency does not match the ELS currency, Calypso converts the Start Price and End Price into the ELS currency using the Start FX Rate and the End FX Rate]**

13.2.2 Dividend Cashflows

Dividend cashflows have the type DIVIDEND.

When there is FX translation and:

- The FX rate is explicitly specified on the trade (flag “Is Fixed FX” checked, FX rate specified in “Initial FX Rate” field) – The proceeds will be known on the "ex-date". There will be a known payment. The Start FX Rate and any projected values are not required. The End FX Rate should equal the value on the trade.
- There is an FX Reset – The start FX Rate is not required. The amount of the flow is known on the "ex-date". The end FX Rate be calculated by the pricer when the valuation date < known date.

If the equity swap cashflows are customized, you can display the dividends added to the underlying equity product provided the domain "Equity.customCFDividend" contains the value EquityLinkedSwap.

The columns calculated for dividend cashflows are described below.

Columns	Description
Proj Amt Interest Amt	Projected dividend amount paid or received.
Div Unit Amount	The dividend unit amount is based on the projected dividend of the dividend curve associated with the trades. Important Note – In order to generate projected dividends, the dividend curve associated with the trade must be a discrete dividend curve.
Div Qty	Number of shares negotiated at transaction level.
Div Retro Rate	Retrocession Rate negotiated at transaction level. Final Dividend Amount adjusted by this coefficient.
Div Tax Refund	Not supported.
Div Ex-Date	Projected dividend ex-date based on the dividend rule associated with the trade.
Div Record Date	Projected dividend date based on the dividend curve associate with the trade.

Columns	Description
Div Ratio	100%
Pmt Date	Payment date according to the dividend rule associated with the trade.

13.2.3 Interest Rate Cashflows

Interest rate cashflows have the type INTEREST.

Compared to a standard interest rate swap leg, the ELS notional automatically adjusts if you select Adjust Funding Notional = On Pay Date or On Fixing Date.

According to the number of equities, initial price, and ELS settlement currency, Calypso calculates the initial notional as:

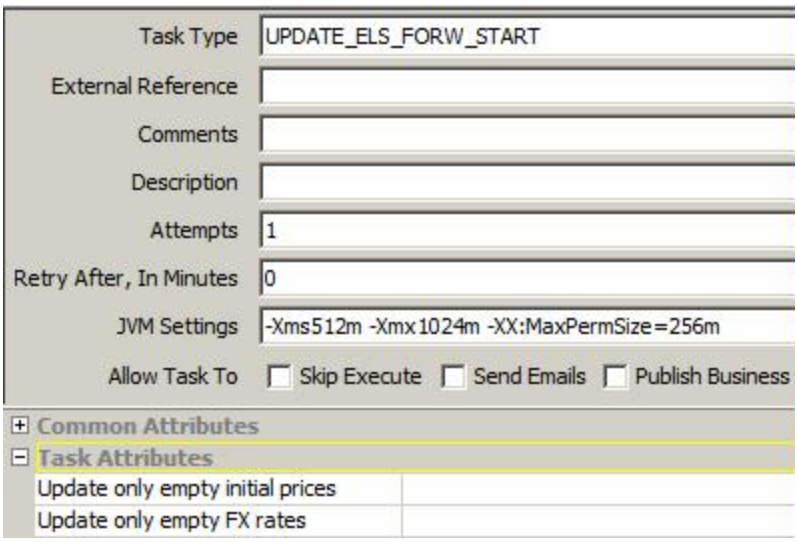
InitialNotional = StartPrice * Quantity * StartFXRate

In this case, at each price fixing, Calypso recalculates the next notional using the new price fixing (the start price of the next period).

13.3 Processing Forward Starting Trades

The initial price and quantity of forward starting trades is only known on the trade start date.

You need to use the scheduled task UPDATE_ELS_FORW_START to update the initial price and quantity.



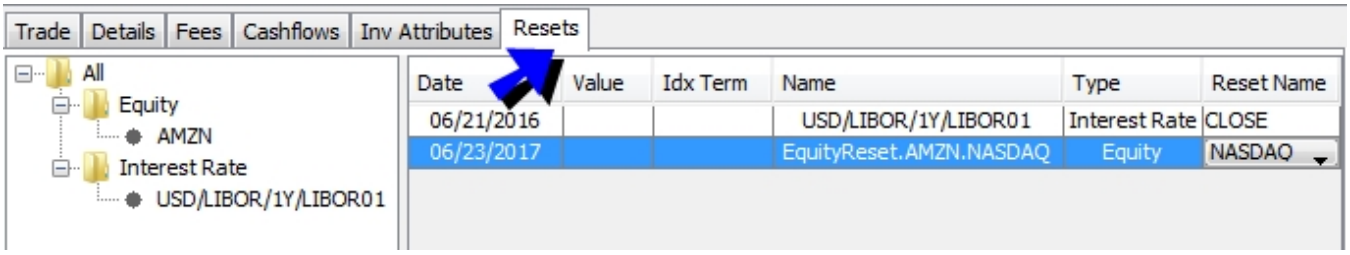
You can select the following attributes:

- Update only empty initial prices – true/false. If true: the trade field Initial Price will only be modified with a new value if it is empty. If false: it will be modified with a new value even if it already has a value. This will serve for corrections (for example the quote was incorrect and the scheduled task needs to be run again to correct the trades values).

- Update only empty FX rates – true/false. If true: the trade field Initial FX Rate will only be modified with a new value if it is empty. If false: it will be modified with a new value even if it already has a value.

13.4 Resets Details

You can select the Resets panel to display Resets details for the various legs.



You can select an equity reset from the Reset Name field. The fixing quote should be set for the quote name in the form "EquityReset.<equity name>.<reset name>". If you do not select an equity reset, CLOSE is selected by default. The fixing quote is the spot quote in that case.

You can also select "Specific Reset" and enter a manual fixing quote in the Value field.

Equity resets are defined in the Equity Definition or Equity Index Definition.

14. Capturing Dividend Swap Trades

A Dividend Swap is an OTC agreement between two counterparties to exchange Realized Dividends versus a Fixed Strike on one or more Future Dates.

- The Fixed Strike is stated in units of the underlying.
- A Dividend Swap is always cash settled.

Note that if you want to capture a dividend swap against an interest rate or another asset instead, you can use the Equity Swap worksheet.

▶ See Capturing Equity Swaps for details.

Choose **Trade > Equity > Dividend Swap** to open the Dividend Swap worksheet, from Calypso Navigator or from the Trade Blotter.

Dividend Swap Quick Reference

When you open a worksheet, the Trade panel is selected by default.

Underlying Configuration

» Equity products are created using **Calypso Navigator > Configuration > Equity > Equity**.

» Equity index products are created using **Calypso Navigator > Configuration > Equity > Equity Indexes**.

» Baskets are created using **Calypso Navigator > Configuration > Basket**.

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, see Field Description.

Note that the Trade Date is entered in the Details panel.

» Proceed to the other panels as applicable.

Saving a Trade

» Press F5 to save the trade, or choose **Trade > Save**.

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

Once saved, 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.

Pricing a Trade

» The Dividend Swap uses an Accrual Model. A Dividend Swap trade requires the following market data: discount curve, dividend curve, and equity or equity index quotes.

▶ Please refer to Calypso Analytics Library (Calib) documentation for details.

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

» Click **Price** to price the trade.

Trade Lifecycle

» You can fix prices using **Calypso Navigator > Trade Lifecycle > Reset > Price Fixing** or by using the PRICE_FIXING scheduled task.

» You can fix prices that are specific to the current trade only, by choosing **DividendSwap > Specific Resets** in the trade window.

» You can terminate the trade using **Back Office > Terminate**.

14.1 Dividend Swap Payoff Methodology

A dividend swap will either define its payoff in return or in quantity, depending on whether the swap is stated in notional or quantity.

The following formula components are used in the Payoff sections.

t=1,...,T – Denotes the periods of the swap.

i=1,...,N – Denotes the component of the baskets.

$Strike_{t,i}$ – Dividend Strike for period t and component i.

Currency – The payment currency of the swap.

FX Reset – If the Payment Currency of the Swap differs from the asset currency, an FX Reset is used to locate the appropriate FX Fixing on the End Date of the relevant period.

$RealizedDIV_{t,i}$ – RealizedDIVt is the Realized Dividends, based on Dividend Ownership over period *T*.

14.1.1 Notional Swap Payoff

For a Notional Swap, the Dividend Swap payoff for given period *t* is:

$$PeriodPayoff_t = NotionalAmount * \left| \frac{retro * RealizedDIV_t - Strike_t}{Strike_t} \right|$$

$$SwapPayoff_t = \sum_{t=1}^{T} NotionalAmount * \left| \frac{retro * RealizedDIV_t - Strike_t}{Strike_t} \right|$$

14.1.2 Quantity Swap Payoff

For a Quantity Swap, the Dividend Swap payoff for a given period is:

$$PeriodPayoff_t = Quantity * \left[retro * RealizedDIV_t - Strike_t \right]$$

$$SwapPayoff_t = \sum_{t=1}^{T} Quantity * \left[retro * RealizedDIV_t - Strike_t \right]$$

14.1.3 Basket Swap Payoff

In the case of baskets, the swap is represented as a basket of swaps; so the payoff would simply be the sum of the payoffs for the various components.

For quantity based trades

$$BasketSwapPayoff = \sum_{t=1}^{T} \sum_{i}^{N} Q_i * retro * RealizedDIV_{t,i} - Strike_{t,i}$$

For notional based trades the notional I split over the components according to the weights in the basket. In this case the basket has to be defined in weights.

$$BasketSwapPayoff_t = \sum_{i=1}^{N} \sum_{t=1}^{T} NotionalAmount_i * \left| \frac{retro * RealizedDIV_t - Strike_t}{Strike_t} \right|$$

14.1.4 Dividend Ownership

The dividend per share is the amount paid by the Underlying Share, if any, to the holders of the shares during the relevant yearly period before any deduction for withholding tax, and exclusive of any "avoir fiscal" or other imputation tax credit.

Dividends per share only include ordinary cash dividends and do not include extraordinary or special dividends.

Dividend ownership is typically determined based on the ex-dividend date. A dividend can be realized in a Dividend Swap if the ex-dividend date of the dividends falls between the start and end dates of the trade.

Dividend ownership between a Start and End Date is inclusive of the start date and exclusive of the end date.

In summary, a dividend can be realized for a period t= [t1 ,t2] if $RealizedDIV_{t,i}$.

14.1.5 Dividend Periods Methodology

A Dividend Swap is set up as one or more Dividend Periods governed by the Start Date, End Date, and Frequency attribute. Each Period represents a cashflow that is based on the Payoff methodology.

Each Period has a cashflow that is paid with a lag based on the Pay Lag attribute.

The Period generation algorithm begins at the End date and moves backwards to the Start Date. The first period may end up Short.

For example,

Start Date: Jan-01-2009

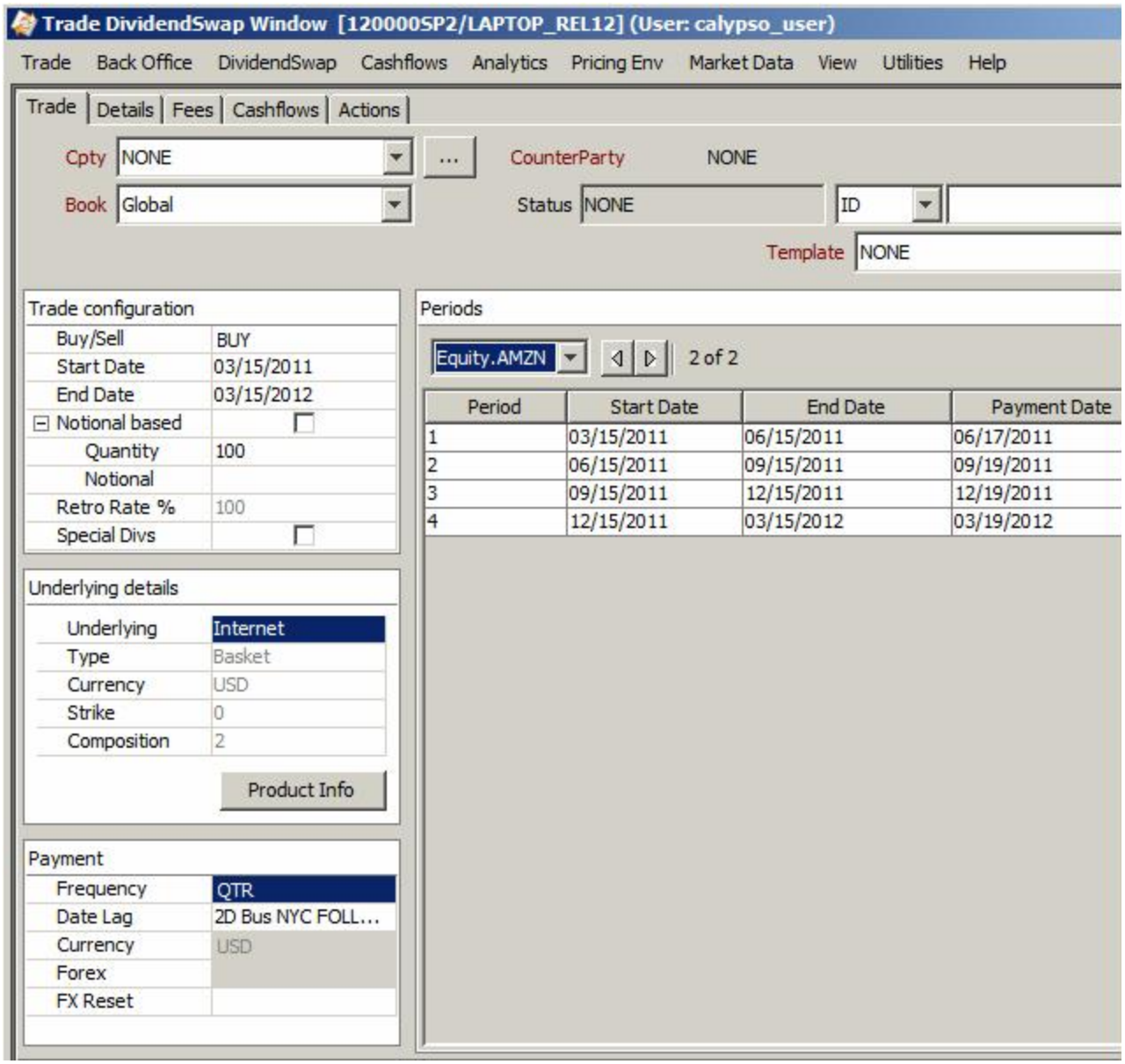
End Date: Jan-11-2010

Frequency: PerAnnum(PA)

The generated Periods are:

Start Date	End Date
Jan-01-2009	Jan-11-2010
Jan-11-2010	Jan-11-2011

14.2 Sample Dividend Swap Trade



Dividend Swap Trade Window - Sample Trade

» Enter the fields described below as needed.

14.2.1 Fields Description

Trade Details

Fields	Description
Role/Cpty	The first two fields in the worksheet identify the trade counterparty. You can select a legal entity of specified role from the first field provided you have setup favorite counterparties. Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Alternatively, double-click the Cpty label to set the list of favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character. Otherwise, click ... to select a legal entity of specified role from the Legal Entity Chooser. The second field identifies the trade counterparty's role. The default role is specified using **Utilities > Set Default Role**. However, you can change it as applicable. Alternatively, double-click the CounterParty label to change the role.
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**. Alternatively, double-click the Book label to set the list of favorite books. Otherwise, click ... to select a book. The owner of the book (a processing organization) identifies your side of the trade.
Status	Current status of the trade. The status is automatically assigned by the system based on the workflow configuration. The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.
ID Ext Ref Int Ref	Unique identification number of the trade. The trade id is automatically assigned by the system when the trade is saved. You can load an existing trade by typing the trade id into this field, and pressing [Enter]. You can also display the internal reference of external reference. The default trade reference 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.
Template	You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.

Trade Configuration Details

Fields	Description
Buy/Sell	Select the direction of the trade from the book's perspective: BUY or SELL. If you are buying the dividend swap, you are receiving the realized dividend, and paying the

Fields	Description
	fixed strike.
Start Date	Enter the start date of the first dividend period.
End Date	Enter the end date of the last dividend period.
Notional based	Check to book the trade in notional. You can enter the notional amount in the Notional field. The payoff will be reflected in Return. Or clear to book the trade in quantity. You can enter the quantity in the Quantity field.
Retro Rate%	Enter the percentage of dividend to pay / receive. For Baskets, the Retro Rate is set at the component level. Click **Product Info** to set the Retro Rate for each component. ▶ See Basket Components for details.
Special Divs	Check to include special dividends.

Underlying Details

Fields	Description
Underlying	Select the underlying: It can be an equity, an equity index or a basket. You can also type in the underlying's name. **[NOTE: Only baskets weighted in quantity are supported]** You can click **Product Info** to bring up more details pertaining to the underlying.
Type	Displays the type of underlying.
Currency	Displays the underlying currency.
Strike	Enter the dividend strike. For Baskets, the Strike is set at the component level. Click **Product Info** to set the Strike for each component. ▶ See Basket Components for details.
Composition	Displays the number of components in the basket.

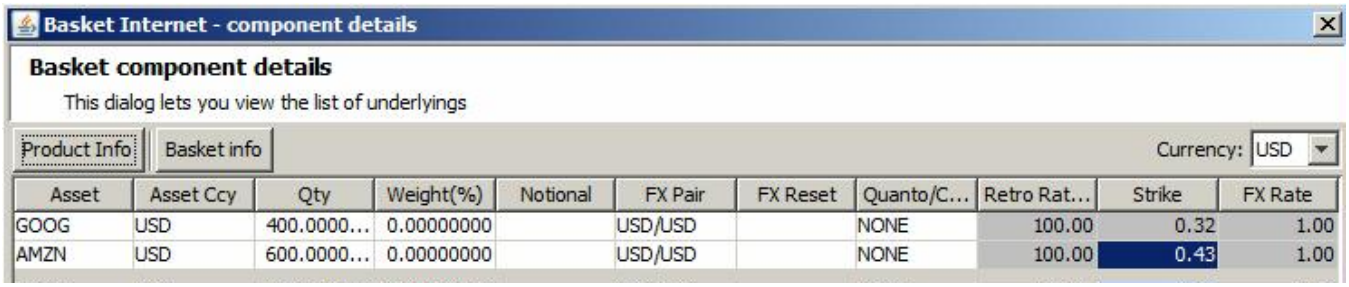
Payment Details

Fields	Description
Frequency	Select the payment frequency.
Date Lag	Enter the number of days between the dividend date and the actual payment date.

Fields	Description
Currency	Select the payment currency.
Forex FX Reset Fixed Rate	Select the type of FX rate you want to use if the settlement currency is different from the underlying currency: • Compo – The FX rate is retrieved from an FX Rate Definition – Select the FX Rate Definition from the FX Reset field. • Quanto – The FX rate is fixed – Enter the FX rate in the Fixed Rate field. For Baskets, it is the type of FX rate set at the component level. FX Rate Definitions are created using **Calypso Navigator > Configuration > Foreign Exchange > FX Rate Definitions**.

14.2.2 Basket Components

When you select a basket as the underlying instrument, you can click **Product Info** to view the basket components.



Basket Components Details

» You can set the retrocession rate and strike for each component.

» You can click **Basket info** to bring up the Basket Definition window - Help is available from that window.

14.2.3 Viewing Dividend Periods

The dividend periods are based on the payment frequency.

Select the equity from the drop-down menu to display the periods for that equity.

The system generates a cashflow for each period.

15. Capturing Variance Swap Trades

You can capture the following swaps using the Variance Swap worksheet: Variance, Volatility, Weighted Variance (Gamma), Conditional Variance.

A variance swap is an OTC contract whose value at maturity is based on the realized volatility experienced by the underlying. The underlying can be an Equity or an Equity Index. Pricing is based on implied volatility levels found in relevant listed option prices. There is no up-front premium for the Variance Swap and it is cash settled.

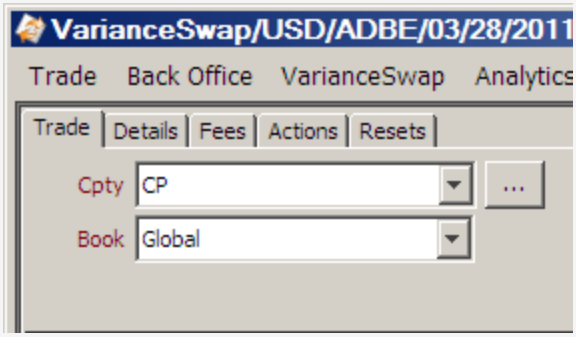
Typically, the investor specifies:

- The underlying security (e.g., S&P 500 Index)
- The tenor of the swap (e.g., “1year” or “June 2004 listed options expiration”)
- The desired amount of volatility exposure of the swap in currency units per volatility point (e.g., "$100,000 per volatility point”). This number represents the variance swap’s approximate sensitivity to volatility. This “Value per Volatility Point” is sometimes referred to as VEGA NOTIONAL or VEGA AMOUNT.

The dealer makes a market in volatility terms (e.g., 22.5 bid, 24.0 ask).

From the Trade Blotter or from Calypso Navigator, select **Trade > Equity > Variance Swap** to open the Variance Swap worksheet.

Variance Swap Quick Reference



When you open a worksheet, the Trade panel is selected by default.

Underlying Configuration

» Equities – Create equity products using **Calypso Navigator > Configuration > Equity > Equity**.

» Equity Indexes – Create equity index products using **Calypso Navigator > Configuration > Equity > Equity Indexes**.

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, see Field Description.

Note that the Trade Date is entered in the Details panel.

» Proceed to the other panels as applicable.

Saving a Trade

» Press F5 to save the trade, or choose **Trade > Save**.

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

The title bar of the Trade Worksheet then changes to include the Trade Description and the assigned Trade ID, and trade's status is modified according to the workflow configuration.

Pricing a Trade

» In the Pricer Configuration, a Variance Swap Pricer should be assigned to each Variance Swap subtype.

▶ Please refer to Calypso Analytics Library (Calib) documentation for details.

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

» Click **Price** to price the trade.

Trade Lifecycle

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

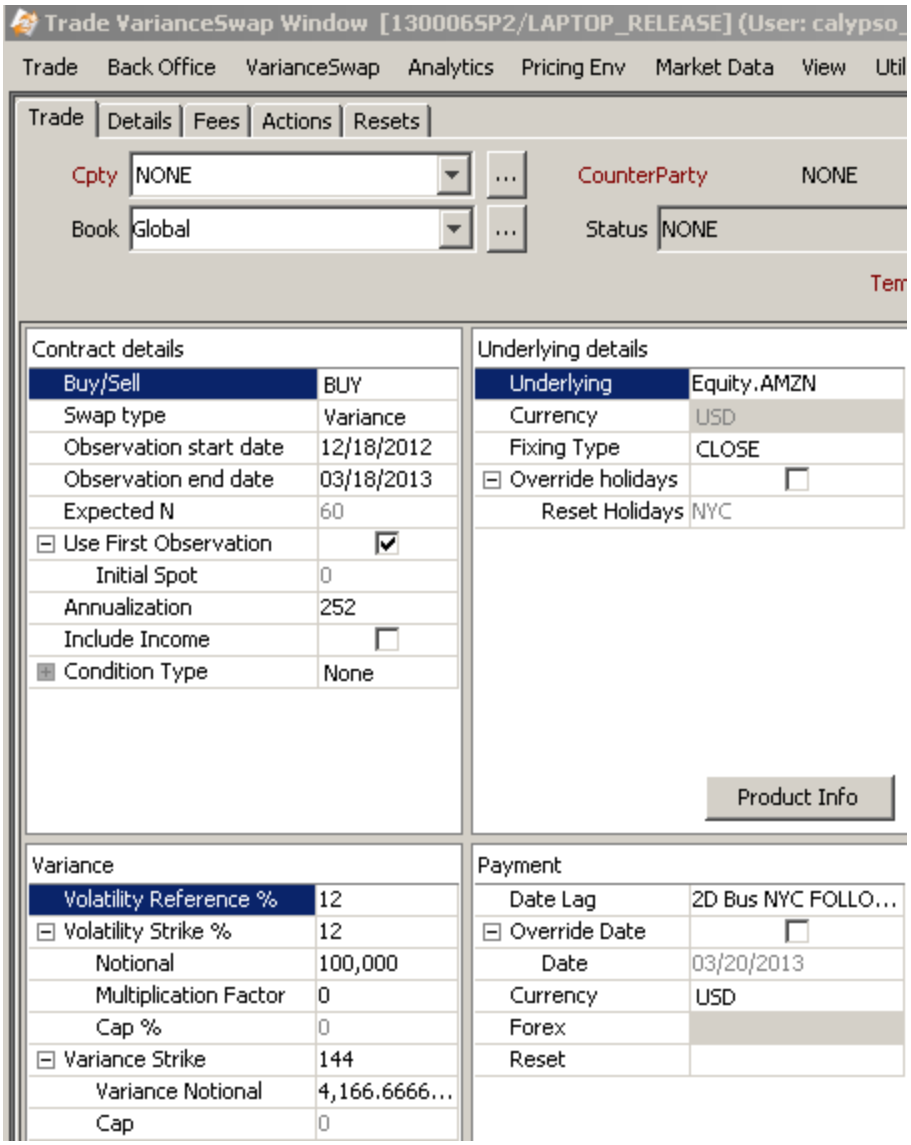
» You can terminate the trade using **Back Office > Terminate**.

» You can apply corporate actions to Equity and Equity Index products using **Calypso Navigator > Trade Lifecycle > Corporate Action > Corporate Action**, or using the CORPORATE_ACTION scheduled task.

» You can fix prices using **Calypso Navigator > Trade Lifecycle > Reset > Price Fixing** or by using the PRICE_FIXING scheduled task.

You can fix prices that are specific to the current trade, only from the Resets tab in the trade window.

15.1 Sample Variance Swap Trade



Variance Swap Trade Window - Sample Trade

» Enter the fields described below as needed.

15.1.1 Payoff Formulas

The payoff for the following swaps equals:

Notional * (Min (Payoff, Cap) - K_v) * PO,

Notional equals Variance Notional for all swaps except Volatility

Kv = Variance Strike for all swaps except Volatility

Where PO (Percentage Occurrences) and Payoff equals the following:

Variance Swap

A Variance Swap payoff is:

$$\frac{Bus}{N}\sum_{i=1}^{n}\left\{\ln\left(\frac{index_i}{index_{i-1}}\right)\right\}^2 \times 10000$$

Where:

N = number of observations

n = number of returns

Bus = is the number of business days in the year (typically 252)

PO = 1

Volatility Swap

A Volatility Swap payoff equal to the sqrt(Variance Swap Payoff)

PO = 1

Notional = Volatility Notional

Strike = Volatility Strike

Weighted Variance (Gamma) Swap

A Gamma Swap payoff is:

$$\frac{Bus}{N}\sum_{i=1}^{n}\left\{\ln\left(\frac{index_i}{index_{i-1}}\right)\right\}^2 \frac{index_i}{index_o} \times 10000$$

Where,

$index_o$ = the value of the underlying at the outset of the swap.

PO = 1

Conditional Variance Swap

A conditional Variance Swap payoff is:

$$\frac{Bus}{NR}\sum_{i=1}^{n}\left\{\ln\left(\frac{index_i}{index_{i-1}}\right)\right\}^2 \times C \times 10000$$

Where:

C = 1 if Condition is met else 0

NR = number of returns that have a Condition of 1 (Condition Met)

PO = NR / N

All of these payoffs can be represented using a generalized Variance Payoff:

$$\frac{Bus}{NR}\sum_{i=1}^{n}\left\{\ln\left(\frac{index_i}{index_{i-1}}\right)\right\}^2 \times S \times C \times 10000$$

Where:

S = is a constant

Given this generalized payoff, a Vanilla Variance Swap can be represented with:

S = 1

C = 1

A Gamma Swap can be represented with:

S = $\frac{index_i}{index_o}$

C = 1

A Conditional Variance Swap can be represented with:

S = 1

C = 1 if Lower <= $index_{i-1}$<= Upper, else zero.

15.1.2 Fields Description

Trade Details

Fields	Description
Role/Cpty	The first two fields in the worksheet identify the trade counterparty. You can select a legal entity of specified role from the first field provided you have setup favorite counterparties. Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Alternatively, double-click the Cpty label to set the list of favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character.

Fields	Description
	Otherwise, click ... to select a legal entity of specified role from the Legal Entity Chooser. The second field identifies the trade counterparty's role. The default role is specified using **Utilities > Set Default Role**. However, you can change it as applicable. Alternatively, double-click the CounterParty label to change the role.
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**. Alternatively, double-click the Book label to set the list of favorite books. Otherwise, click ... to select a book. The owner of the book (a processing organization) identifies your side of the trade.
Status	Current status of the trade. The status is automatically assigned by the system based on the workflow configuration. The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.
ID Ext Ref Int Ref	Unique identification number of the trade. The trade id is automatically assigned by the system when the trade is saved. You can load an existing trade by typing the trade id into this field, and pressing [Enter]. You can also display the internal reference of external reference. The default trade reference 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.
Template	You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable. The dates will be saved as relative in the trade template only if the dates were entered as tenors. Observation start date should be a tenor compared to the val date. Observation end date should be a tenor compared to the observation start date. Payment date should be a tenor compared to the observation end date (defined in date lag). An automatic roll convention of FOLLOWING will be applied on the Observation Start Date and Observation End Date. The calendar used for the roll is the same as the calendar of the underlying Exchange.

Contract Details

Fields	Description
Buy / Sell	Select either Buy or Sell to indicate whether the book is the buyer or seller of the variance trade.
Swap Type	Select the type of swap: Variance, Weighted Variance (Gamma), or Volatility.
Observation Start Date	Enter the first date on which the underlying is observed or fixed.
Observation End Date	Enter the last date on which the underlying is observed or fixed.
Expected N	Displays the expected number of observation days.
Use First Observation	By default, the price on the first observed date is used. You can clear the "Use First Observation" checkbox and enter the initial price in the Initial Spot field.
Annualization	Enter the number of business days in a year to calculate the annualized volatility. Default is 252.
Include Income	This checkbox only applies to Equity and Equity Index underlyings. When you check the “Include Income” checkbox, the dividends are included in the calculation of the daily return. The dividend, if any, is displayed in the Income column of the observation schedule.
Condition Type	You can select a condition type to include observations. • None – No condition. • Upside – You can set a lower return. The observation must be greater or equal to the lower return to be included. • Downside – You can set an upper return. The observation must be lower than the upper return to be included. • Corridor – You can set a lower return and an upper return. The observation must be within the lower and upper return to be included.

Variance Details

Fields	Description
Volatility reference (%)	The volatility reference is used to computed the vega notional (or volatility exposure). The amount of volatility exposure in currency units per volatility point. VEGA_NOTIONAL = NOTIONAL / 2 * Volatility Reference = 100 000 / 2*27 = 1851,85
Volatility Strike (%)	The volatility strike is the fixed level against which the payout is computed: Payout = Notional Amount x (VOLRealised 2 – VOLStrike2) ***Volatility Strike (%)*** Enter the strike volatility. This is a percentage value.

Fields	Description
	Notional Enter the notional – This number represents the variance swap's approximate exposure to volatility. Expressed as currency units per volatility point. The number of decimal points depends on the payment currency. ***Multiplication Factor*** Enter the factor for arriving at the cap value. ***Cap %*** Volatility Cap = Volatility Strike * Multiplication Factor
Variance	**[NOTE: Disabled for Volatility Swap]** ***Variance Strike*** Displays the volatility strike squared. Modifying this field re-computes the Volatility Strike %. Variance Strike = (Volatility Strike)^2 ***Variance Notional*** Displays the notional amount for the variance swap. The payout is linked to this amount. Modify as needed and it will recompute the volatility notional. Variance Notional = Volatility Notional / (2 * Volatility Strike) ***Cap*** The volatility cap squared. Variance Cap = (Volatility Cap) ^2

Underlying Details

Fields	Description
Underlying	Select the underlying: It can be an equity or an equity index. You can also type in the underlying's name. You can click **Product Info** to view the details of the underlying.
Currency	Displays the currency of the underlying.
Fixing Type	Select the fixing type. If the underlying allows special quotes, you can select the corresponding fixing type.
Override Holidays	Select to override the default reset holiday calendar. You can enter the reset holiday in the Reset Holidays field.

Payment Details

Fields	Description
Date Lag	Enter the number of days between the forward date and the actual payment date.
Override Date	Check to override the payment of the realized volatility. You can enter the date in the Date field.
Currency	Select the settlement currency.
Forex FX Reset Fixed Rate	Select the type of FX rate you want to use if the settlement currency is different from the underlying currency: • Compo – The FX rate is retrieved from an FX Rate Definition – Select the FX Rate Definition from the FX Reset field. • Quanto – The FX rate is fixed – Enter the FX rate in the Fixed Rate field. For Baskets, it is the type of FX rate set at the component level. FX Rate Definitions are created using **Calypso Navigator > Configuration > Foreign Exchange > FX Rate Definitions**.

Observations Details

The observation schedule is generated between the observation start and end dates. It displays the observed prices of the underlying product and the values calculated from it.

Observations

Returns (Realized)	6
Returns (Unrealized)	58
Returns (Total)	64
Included Returns (Realized)	6
Included Returns(%)	100%

Return#	Date	Value	Income	Return	Cum. Volatility	Include?	Condition Met?
	06/03/2011	235				☑	
1	06/06/2011	238		1.26851595%	20.13706647%	☑	1
2	06/07/2011	241		1.25262598%	20.01134119%	☑	1
3	06/08/2011	245		1.64612771%	22.23931302%	☑	1
4	06/09/2011	232		-5.45208389%	47.36696171%	☑	1
5	06/10/2011	238		2.55333020%	46.08129559%	☑	1
6	06/13/2011	248		4.11580725%	49.81009952%	☑	1
7	06/14/2011					☑	0
8	06/15/2011					☑	0

Observations panel

Fields	Description
Returns (Realized)	Number of realized returns (underlying quotes are fixed).
Returns (Unrealized)	Number of unrealized returns.
Returns (Total)	Total number of returns.
Included Returns (Realized)	Number of included realized returns.
Included Returns(%)	Percentage of included returns with respect to the total number of returns.
Return#	Return number given by the system.
Date	Observation date.
Value	Price / quote Prices are set using **Calypso Navigator > Trade Lifecycle > Reset > Price Fixing** or you can set prices on the trade using **"product menu" > Specific Resets**. The Value includes dividends if you select the “Include Income?” checkbox in the trade details.
Income	When you check the “Include Income” checkbox, the Income column displays any dividend amount attached to the underlying product.
Return Weighted Return	Percentage of return / weighted return over the initial price
Cum. Volatility Weighted Cum. Volatility	Cumulative volatility / weighted volatility to date
Include?	All dates are included by default. You can clear the Include? checkbox to remove an observation date. If an observation date is excluded and the valuation date equals the excluded observation date, when the trade is priced, the spot price is applied to the row immediately preceding the excluded date.
Condition Met?	1 if there is no condition or the condition is met, or 0 otherwise.

15.2 Actions Panel

In the Actions panel, you can view the implications of split corporate actions that are applied to the underlying Equity or Equity Index.

- You can select an action and click **Details** to view the details of the Corporate Action.
- You can select an action and click **Following** to view the trade version after the selected action. The corresponding trade window will be opened.

16. Capturing Variance Option Trades

A variance option is an option on a variance swap.

You can capture options on Variance swaps using the Variance Option worksheet.

The payoff of a Variance Option is:

- Call = max (min (Variance Cap,Realized Variance) - Strike Variance , 0) * Notional
- Put = max (Strike Variance – min(Realized Variance,cap), 0) * Notional

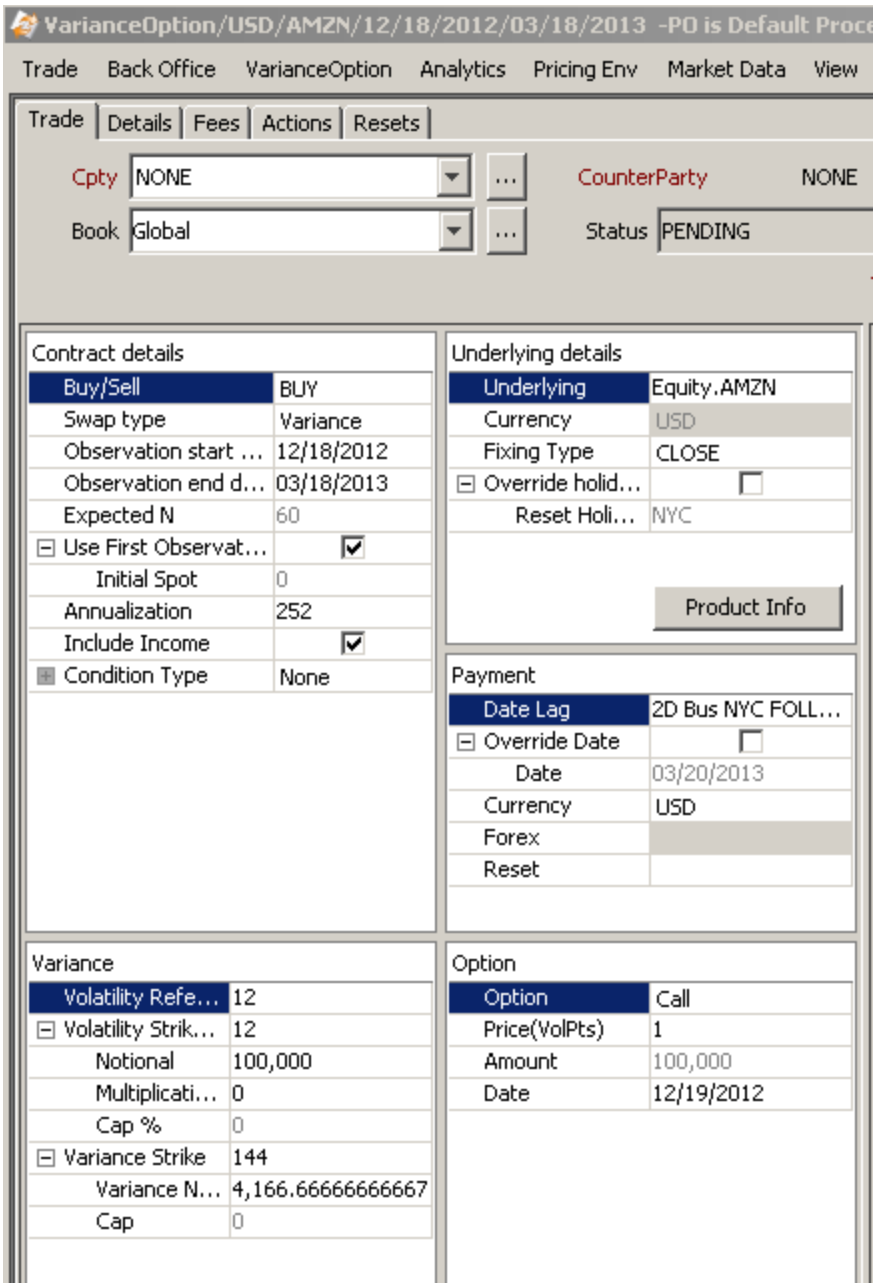
Variance Options:

- Are always cash-settled.
- The payment can lag from the observation end date.
- Have an initial premium typically paid to the option seller.

The option premium can be entered as follows:

- Absolute amount.
- In units of variance or volatility notional, example 3.1% volatility notional equals 3.1 * the volatility notional.

Choose **Trade > Equity > Variance Option** to open the Variance Option worksheet, from Calypso Navigator or from the Trade Blotter.



Variance Option Trade Window - Sample Trade

» Enter the variance swap details as needed.

▶ See Variance Swap for details.

» Then specify the option details described below as needed.

Option Details

Fields	Description
Option	Select a Put or a Call on the realized variance over some time period T. The maturity date of the option is aligned with the end date of the variance period since the final payoff is known at that time.
Price (VolPts)	Enter the units of variance or volatility notional. For example, enter 3.1 for 3.1% volatility notional. The premium amount is 3.1 * the volatility notional.
Amount	Trade notional.
Date	Premium date.

17. Capturing Correlation Swap Trades

A Correlation Swap is an OTC transaction between two parties to exchange the difference between a “Strike Correlation” and the “Realized Correlation”. The Correlation is calculated based on the period including the Observation Start Date and Observation End Date.

Correlation is a statistical function relating how the changes between the returns of two assets are related. A correlation is between -1 and 1, where 1 means perfect correlation and -1 means perfect negative correlation. For example, if the correlation of IBM and GE is 1, then a 1% move in IBM would imply a 1% move in GE.

The historic, or calculated correlation, is over a period. The correlation will vary based on the calculation start and end date.

A Correlation Swap can be transacted on N assets. In this case the pair-wise correlations are averaged against the “Correlation Average Strike”.

Correlation Swaps can be transaction on any type of Asset. For example, a Correlation Swap can be between IBM and BRENT Crude Oil.

The correlation amount payment occurs as follows:

If > 0, Seller shall be the Equity Amount Payer and shall pay the Correlation Buyer the Equity Amount on the Cash Settlement Payment Date.

If < 0, Correlation Buyer shall be the Equity Amount Payer and shall pay the Correlation Seller the absolute value of the Equity Amount on the Cash Settlement Payment Date.

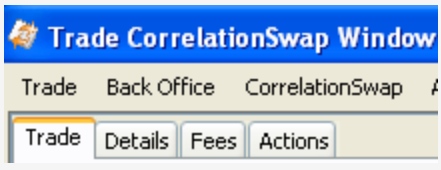
If = 0, there will be no Equity Amount Payer and neither party shall be required to make any payment to the other party.

For the buyer of the Correlation Swap, the trade is settled based on the following formula:

$$EquityAmount = NA * FX * (\rho_{Realized} - \rho_{Strike}) x100$$

Choose **Trade > Equity > Correlation Swap** to open the Correlation Swap worksheet, from Calypso Navigator or from the Trade Blotter.

Correlation Swap Quick Reference



When you open a worksheet, the Trade panel is selected by default.

Underlying Configuration

» Baskets are created using **Calypso Navigator > Configuration > Basket**.

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, see Field Description.

Note that the Trade Date is entered in the Details panel.

» Proceed to the other panels as applicable.

Saving a Trade

» Press F5 to save the trade, or choose **Trade > Save**.

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

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

Pricing a Trade

» A correlation swap trade requires the following market data: discount curve for the notional currency and settlement currency, quotes for the basket assets, correlation matrix between the assets in the basket, FX quotes as needed, FX resets as needed.

▶ Please refer to Calypso Analytics Library (Calib) documentation for details.

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

» Click **Price** to price the trade.

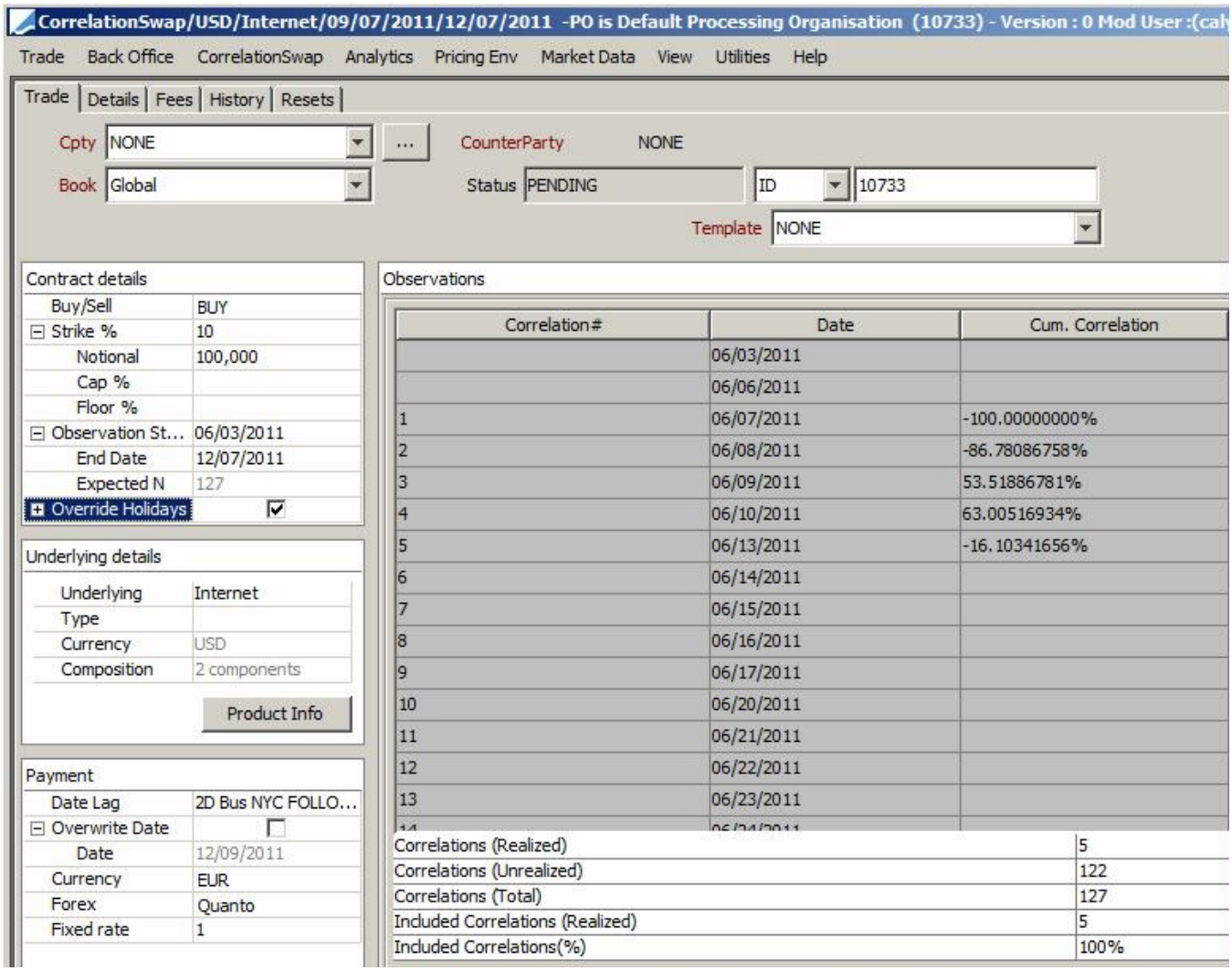
Trade Lifecycle

» You can fix prices using **Calypso Navigator > Trade Lifecycle > Reset > Price Fixing** or by using the PRICE_FIXING scheduled task.

» You can fix prices that are specific to the current trade only, by choosing **CorrelationSwap > Specific Resets** in the trade window.

» You can terminate the trade using **Back Office > Terminate**. You can specify a buyout correlation level and this will calculate the NPV. Enter a number in percentage in the Closing Corr field in the Correlation Swap Termination window.

17.1 Sample Correlation Swap Trade



Correlation Swap Trade Window - Sample Trade

» Enter the fields described below as needed.

17.2 Fields Description

Trade Details

Fields	Description
Role/Cpty	The first two fields in the worksheet identify the trade counterparty. You can select a legal entity of specified role from the first field provided you have setup favorite counterparties. Favorite counterparties are specified using **Utilities > Configure**

Fields	Description
	Favorite Counterparties. Alternatively, double-click the Cpty label to set the list of favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character. Otherwise, click ... to select a legal entity of specified role from the Legal Entity Chooser. The second field identifies the trade counterparty's role. The default role is specified using **Utilities > Set Default Role**. However, you can change it as applicable. Alternatively, double-click the CounterParty label to change the role.
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**. Alternatively, double-click the Book label to set the list of favorite books. Otherwise, click ... to select a book. The owner of the book (a processing organization) identifies your side of the trade.
Status	Current status of the trade. The status is automatically assigned by the system based on the workflow configuration. The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.
ID Ext Ref Int Ref	Unique identification number of the trade. The trade id is automatically assigned by the system when the trade is saved. You can load an existing trade by typing the trade id into this field, and pressing [Enter]. You can also display the internal reference of external reference. The default trade reference 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.
Template	You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.

Contract Details

Fields	Description
Buy/Sell	Select the direction of the trade from the perspective of the book: BUY or SELL.
Strike %	Enter the level at which the investor buys or sells the correlation swap. This is quoted in %.
Notional	Enter the notional amount.
Cap %	Enter the cap % as needed - $\rho_{Realized}$ is capped at this level.

Fields	Description
Floor %	Enter the floor % as needed - $\rho_{Realized}$ is floored at this level.
Observation Start Date	Enter the start date of the observation period.
Observation End Date	Enter the end date of the observation period.
Expected N	Displays the expected number of observations in the period.
Override Holidays	By default, the holiday calendars assigned to the currency will be used. Check to define the holiday calendars used to calculate the business days in the observation period. You can select the holiday calendars in the Reset Holidays field.

Underlying Details

Fields	Description
Underlying	Select the underlying basket. You can also type in the underlying's name. **[NOTE: Only baskets weighted in quantity are supported]** You can click **Product Info** to view the basket components.
Type	Displays the type of underlying.
Composition	Displays the number of components in the basket.

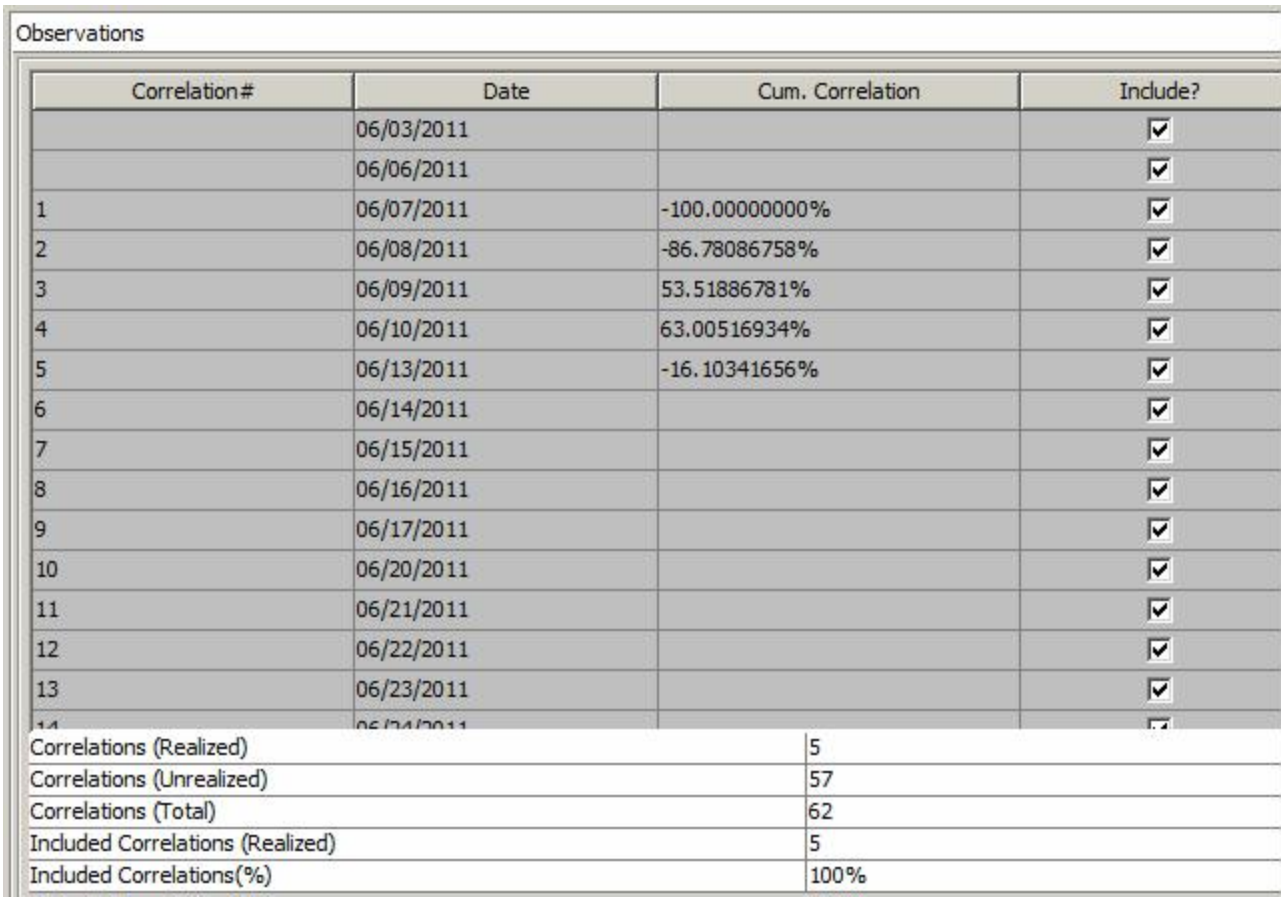
Payment Details

Fields	Description
Date Lag	Define the payment lag from the Observe End date. » Select the holiday calendar to define the business days. » Enter a number of lag days in the Offset field. Days lag "D" can be business days or calendar days. Double-click the Bus label to switch to Cal as needed. The "No Tenor" checkbox only applies to days lag, when you enter more than 31 days. If you check the "No Tenor" checkbox, the offset will not be converted to a tenor.
Overwrite Date	By default, the payment date calculated by the Date Lag from the Observation End Date is displayed in the Date field and used. Check the Overwrite Date checkbox to specify a different payment date in the Date field. Double-click the Date field to select a date from the calendar.
Currency	Select the settlement currency from the drop-down menu. The settlement currency defaults to the notional currency.

Fields	Description
Forex FX Reset Fixed Rate	Type of FX rate set at the component level: fixed rate (Quanto) or FX Reset (Compo). FX Rate Definitions are created using **Calypso Navigator > Configuration > Foreign Exchange > FX Rate Definitions**.

Observations Details

The observation schedule is generated between the observation start and end dates. It displays the cumulative correlation of the underlying products for each date in the observation period.



Correlation Swap - Observation details

Fields	Description
Correlation#	Correlation number set by the system.
Date	Observation date.
Cum. Correlation	Cumulative correlation to date – This requires price fixings / quotes for the components of

Fields	Description
	the basket for each correlation date, and a correlation surface. Prices are set using **Calypso Navigator > Trade Lifecycle > Reset > Price Fixing** or you can set prices on the trade using **Correlation Swap > Specific Resets**.
Include?	All dates are included by default. You can clear the Include? checkbox to remove an observation date. If an observation date is excluded and the valuation date equals the excluded observation date, when the trade is priced, the spot price is applied to the row immediately preceding the excluded date.
Correlations (Realized)	Number of realized correlations (underlying quotes are fixed).
Correlations (Unrealized)	Number of unrealized correlations.
Correlations (Total)	Total number of correlations.
Included Correlations (Realized)	Number of included realized correlations.
Included Correlations (%)	Percentage of included correlations with respect to the total number of correlations.

18. Capturing Equity Forward Trades

An Equity Forward transaction is an Over-the-Counter (OTC) trade between two parties to buy or sell an asset at a specified price on a forward date. The underlying can be an equity, an equity index, or a basket.

An Equity Forward can be settled in cash or physical:

- Cash settlement requires the user to specify a "fixing" to determine the settlement amount. The fixing is observed on the forward date.
- Physical settlement requires the exchange of securities, versus cash, on the payment date. The physical settlement is computed through the scheduled task EQD_FWD_SETTLE which creates the actual equity trade.

Choose **Trade > Equity > Equity Forward** to open the Equity Forward worksheet, from Calypso Navigator or from the Trade Blotter.

Equity Forward Quick Reference

When you open a trade worksheet, the Trade panel is selected by default.

Underlying Configuration

» Equity products are created using **Calypso Navigator > Configuration > Equity > Equity**.

» Equity index products are created using **Calypso Navigator > Configuration > Equity > Equity Indexes**.

» Baskets are created using **Calypso Navigator > Configuration > Basket**.

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, see Field Description.

Note that the Trade Date is entered in the Details panel.

» Proceed to the other panels as applicable.

Saving a Trade

» Press F5 to save the trade, or choose **Trade > Save**.

You can also press F3 to save the current trade as a new trade, or choose **Trade >**

Save As New.

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

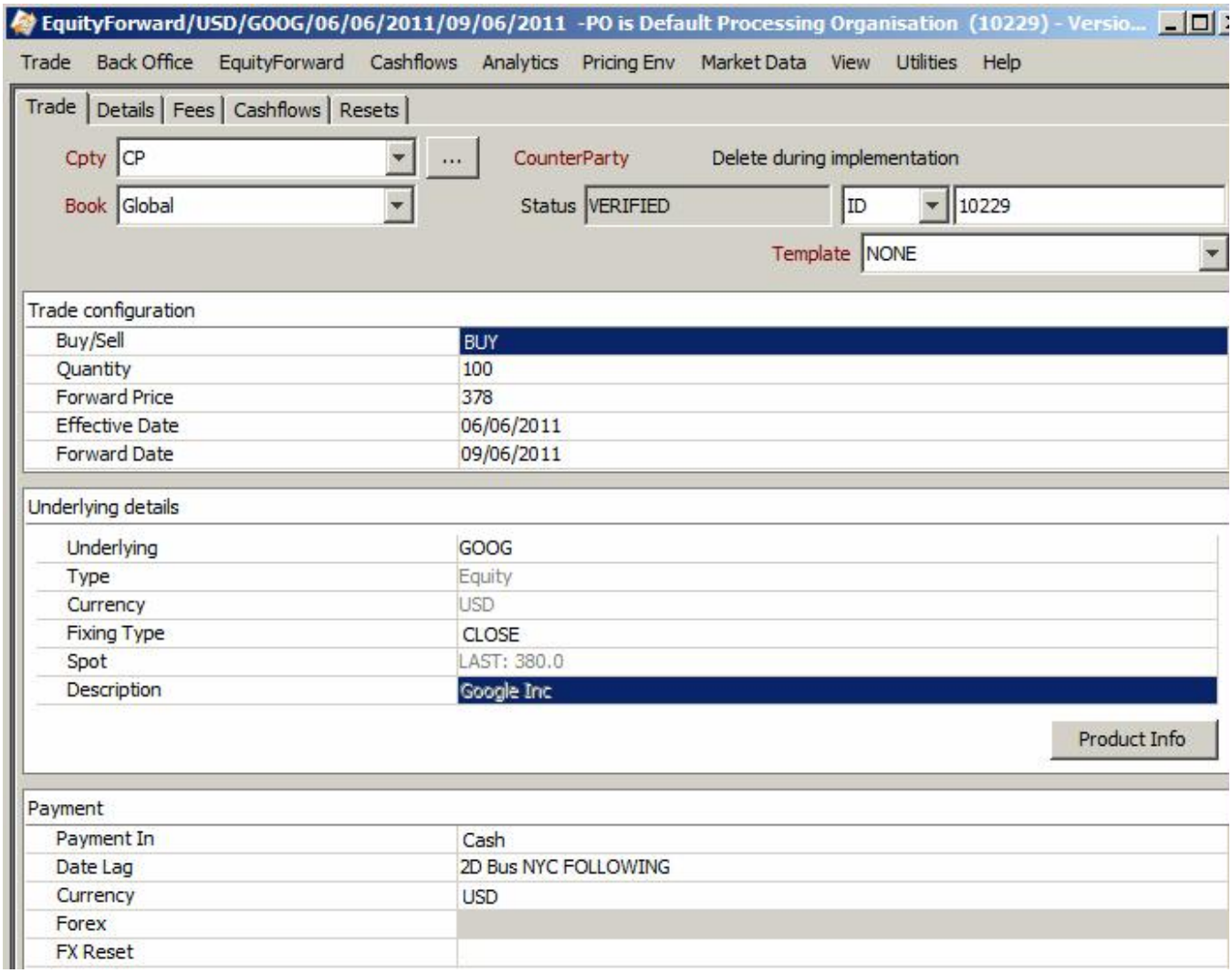
Pricing a Trade

- An equity trade requires the following market data: a discount curve, quote for the equity. If the settlement currency is a different currency than the product currency, then an FX quote is also required.
- You can choose **Pricing Env > Check** to check if all required pricing data are available in the Pricing Environment.
- Click **Price** to price the trade.

Trade Lifecycle

- You can allocate the trade to multiple books using **Back Office > Allocate**.
- You can terminate the trade using **Back Office > Terminate** or by using the Scheduled Task EQD_FWD_SETTLE.
- You can apply corporate actions using **Calypso Navigator > Trade Lifecycle > Corporate Action > Corporate Action**, or using the CORPORATE_ACTION scheduled task.

18.1 Sample Trade



Equity Forward Trade Window - Sample Cash Trade

» Enter the fields described below to capture an equity forward trade.

18.1.1 Fields Details

Trade Details

Fields	Description
Role/Cpty	The first two fields in the worksheet identify the trade counterparty. You can select a legal entity of specified role from the first field provided you have setup

Fields	Description
	favorite counterparties. Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Alternatively, double-click the Cpty label to set the list of favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character. Otherwise, click ... to select a legal entity of specified role from the Legal Entity Chooser. The second field identifies the trade counterparty's role. The default role is specified using **Utilities > Set Default Role**. However, you can change it as applicable. Alternatively, double-click the CounterParty label to change the role.
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**. Alternatively, double-click the Book label to set the list of favorite books. Otherwise, click ... to select a book. The owner of the book (a processing organization) identifies your side of the trade.
Status	Current status of the trade. The status is automatically assigned by the system based on the workflow configuration. The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.
ID Ext Ref Int Ref	Unique identification number of the trade. The trade id is automatically assigned by the system when the trade is saved. You can load an existing trade by typing the trade id into this field, and pressing [Enter]. You can also display the internal reference of external reference. The default trade reference 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.
Template	You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.

Trade Configuration Details

Fields	Description
Buy/Sell	Select the direction of the trade from the book's perspective: BUY or SELL.
Quantity	Enter the number of units of the underlying. For Baskets, it is the quantity specified at the component level.
Forward Price	Enter the agreed upon forward price.

Fields	Description
	For Baskets, the Forward Price is set at the component level. Click **Product Info** to set the Forward Price for each component. ▶ See Basket Components for details.
Effective Date	Enter the effective date.
Forward Date	Enter the forward date.

Underlying Details

Fields	Description
Underlying	Select the underlying: It can be an equity, an equity index or a basket. You can also type in the underlying's name. **[NOTE: Only baskets weighted in quantity are supported]** You can click **Product Info** to view the details of the underlying.
Type	Displays the type of underlying.
Currency	Displays the currency of the underlying.
Fixing Type	Select an equity reset as needed. Equity resets are defined in the Equity Definition or Equity Index Definition. If not selected, the default is CLOSE, indicating that the fixing is done using the spot quote. You can view details about equity resets in the Resets panel. ▶ See Resets Details for more information. **[NOTE: For baskets, the only supported fixing type is "CLOSE"]**
Spot	Displays the spot price retrieved from real-time quotes.
Description	Displays the name of the underlying. For a baskets, it displays the number of components in the basket.

Payment Details

Fields	Description
Payment In	Select the settlement type: Cash or Physical. **[NOTE: Physical can only be selected for Equity underlyings]** ▶ See Settlement Process for details.

Fields	Description
Date Lag	Enter the number of days between the forward date and the actual payment date.
Currency	Select the settlement currency for cash settlement.
Forex FX Reset Fixed Rate	Select the type of FX rate you want to use if the settlement currency is different from the underlying currency: • Compo – The FX reset rate is determined using the prevailing rate on trade maturity date. • Quanto – The FX rate is fixed – Enter the FX rate in the Fixed Rate field. For Baskets, it is the type of FX rate set at the component level. FX Rate Definitions are created using **Calypso Navigator > Configuration > Foreign Exchange > FX Rate Definitions**.

18.1.2 Basket Components

When you select a basket as the underlying instrument, you can click **Product Info** to view the basket components.

Basket Components Details

- You can set the forward price for each component.
- You can click **Basket info** to bring up the Basket Definition window - Help is available from that window.

18.1.3 Pricing

A MTM methodology based on the Underlying Stock/Basket's theoretical Forward level is used. The final payoff is equal to:

$$TradeQuantity * \sum_{i=1..N} Quantity_i * (Fixing_i - ForwardPrice_i) * FX_{reset}$$

In a MTM approach, the NPV is equal to the discounted present value of such payment, which is equal to:

$$NPV(Settle\ Ccy) = df * Expected\ Payoff = df *$$

$$TradeQuantity * \sum_{i=1..N} Quantity_i * (ExpectedFixing_i - ForwardPrice_i) * ExpectedFX_{reset}$$

where,

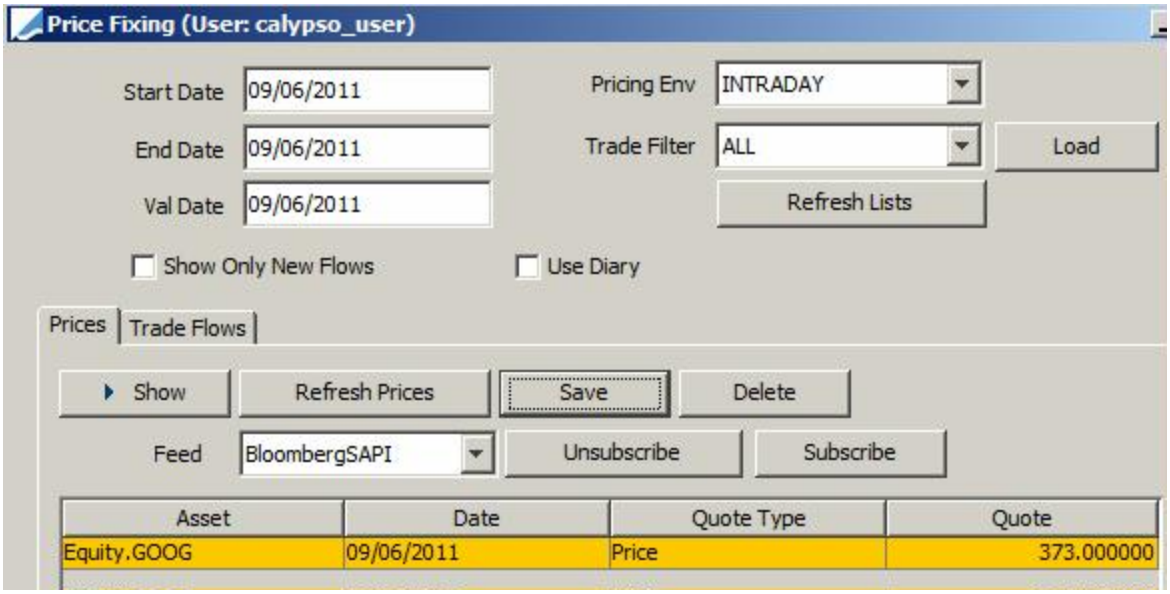
- **ExpectedFixing$_i$** – Forward level of the of the ith component to the Fixing Date.
- **ExpectedFX$_{reset}$** – Forward level of the FX$_{reset}$ to the Fixing Date (if any).

18.2 Settlement Process

The settlement process depends on the type of settlement: Cash or Physical.

18.2.1 Cash Settlement

Enter the fixing on the forward date using **Calypso Navigator > Trade Lifecycle > Reset > Price Fixing**.



Price Fixing Window - Prices panel

» Set the price in the Prices panel, then click **Save**.

» Then select the Trade Flows panel to apply the fixing to the cashflows.

Equity Forward Trade Window - "Fixed" cashflow

The settlement amount is computed using the following formulas:

Forward Payment for equity and equity index = Trade Quantity * (Fixing - Forward Price) * FX rate

The FX rate only applies if the underlying currency is different from the payment currency, on the fixing date.

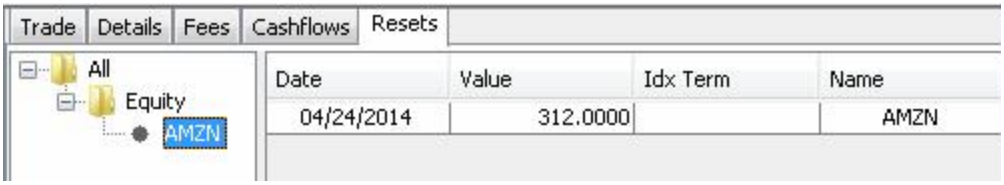
Forward Payment for basket =

$$TradeQuantity * \sum_{i=1..N} Quantity_i * (Fixing_i - ForwardPrice_i) * FX_{reset}$$

where,

- **TradeQuantity** – Number of baskets in the trade.
- **Quantity$_i$** – Number of shares of the ith component.
- **Fixing$_i$** – Observed level of the the ith component.
- **Forward Price$_i$** – Agreed upon price of the ith component.
- **FX$_{reset}$** – FX rate between the component currency and payment currency on the fixing date if any.

You can view the price fixing, if any, in the Resets panel of the trade.

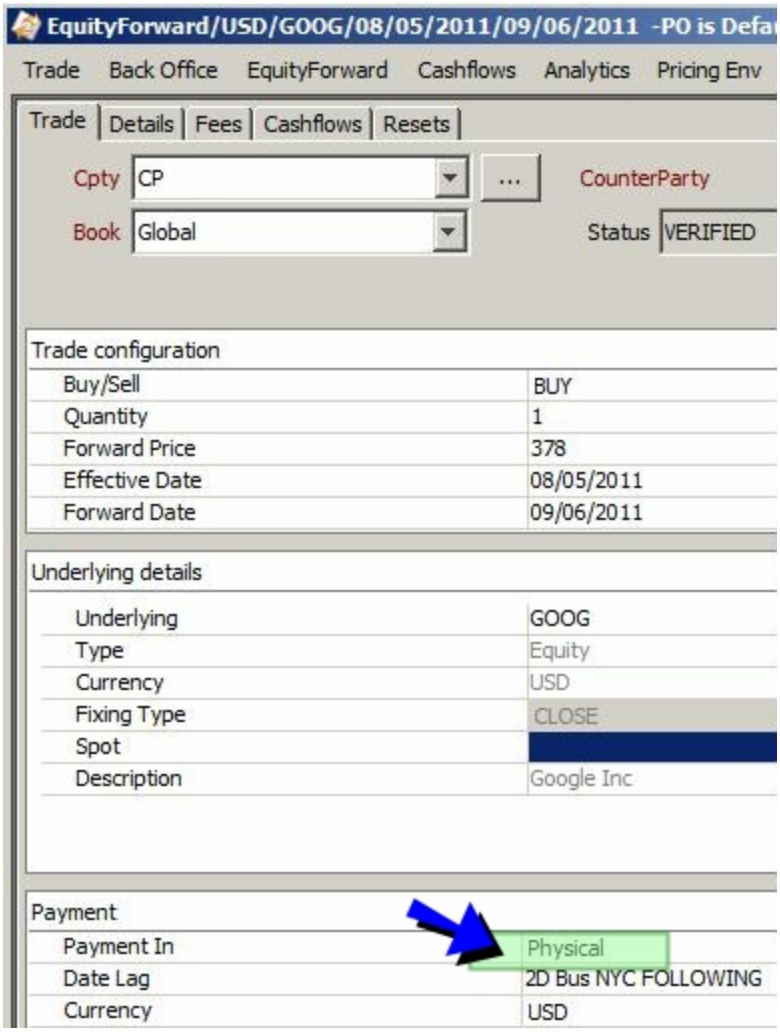


18.2.2 Physical Settlement

You need to run the scheduled task EQD_FWD_SETTLE to perform the physical settlement.

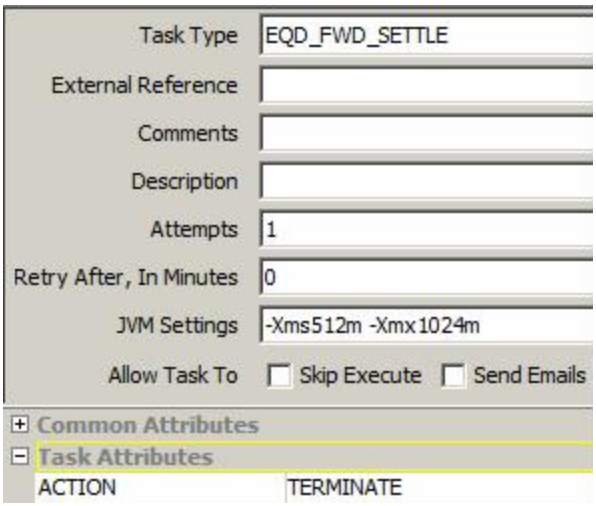
The scheduled task terminates the equity forward trade on the payment date (forward date + payment lag) and generates an equity trade.

Sample Physical Trade



Equity Forward Trade Window - Sample Physical Trade

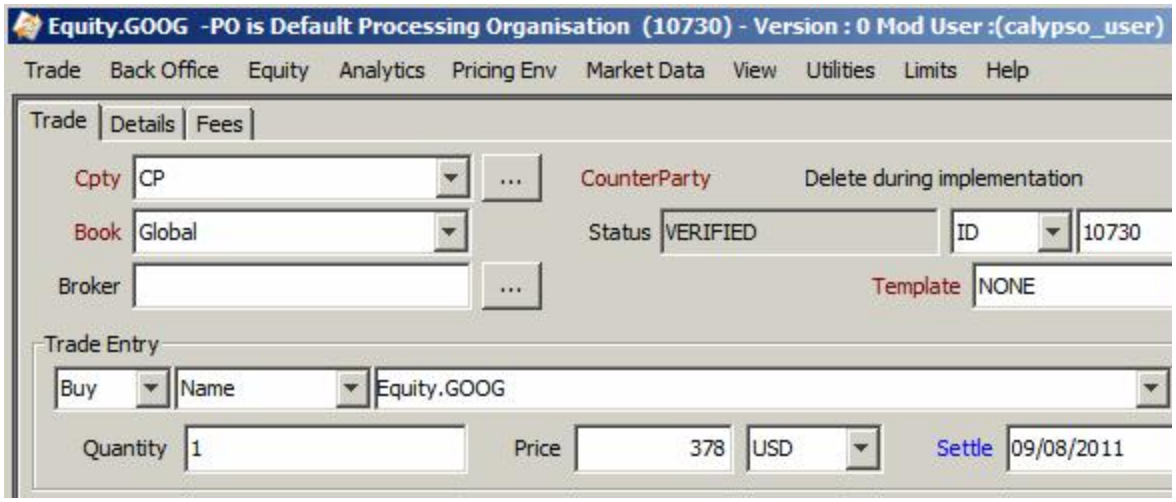
Scheduled Task EQD_FWD_SETTLE



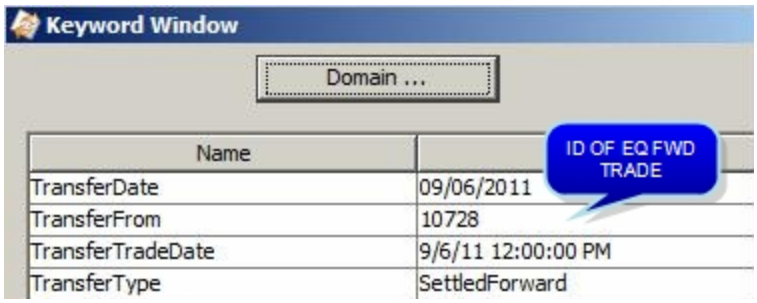
- Make sure to select a trade filter that contains the equity forward trades, a pricing environment, and an action to be applied.
- When you run the scheduled task, the equity forward trade is terminated – The trade keyword "TransferTo" contains the ID of the equity trade generated by the scheduled task.

  The new equity trade is booked at the forward price.

  The settlement date is the forward date plus the payment lag.



The following trade keywords are set on the equity trade:



18.3 Termination

To terminate an Equity Forward with a basket underlying, the system will request the quotes of all the components of the basket on the termination date.

An Equity Forward trade can also be terminated using the Scheduled Task EQD_FWD_SETTLE. This Scheduled Task only settles when the task execution date is the same as the trade's forward date. The Scheduled Task then changes the trade status to Terminated and applies the following trade keywords:

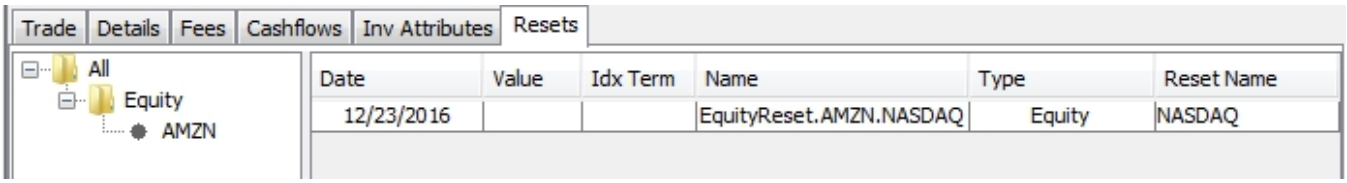
- TransferType: SettledForward
- TradeTransferDate: valDateTime (same as forwardDate & currTime)
- TransferTo: New Equity trade's Id (considered as child trade)

After executing this Scheduled Task, pricing an Equity Forward trade on forward date has the following use-cases / possibilities:

- valDate > forwardDate, NPV should be 0
- valDate < forwardDate, a valid NPV should be computed and shown
- valDate = forwardDate
  - valDateTime > fowardDateTime, NPV should be 0
  - valDateTime < fowardDateTime, a valid NPV should be computed and shown
  - valDateTime = fowardDateTime, NPV should be 0

18.4 Resets Details

You can select the Resets panel to display Resets details for the various legs.



You can select an equity reset from the Reset Name field. The fixing quote should be set for the quote name in the form "EquityReset.<equity name>.<reset name>". If you do not select an equity reset, CLOSE is selected by default. The fixing quote is the spot quote in that case.

You can also select "Specific Reset" and enter a manual fixing quote in the Value field.

Equity resets are defined in the Equity Definition or Equity Index Definition.

19. Capturing ETO Equity Trades

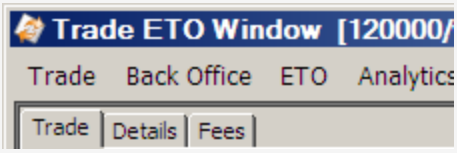
Prior to capturing ETO equity trades, you need to specify ETO equity contracts using **Calypso Navigator > Configuration > Listed Derivatives > Option Contracts**. The system will create the actual ETO equity product on the fly when the contract is selected in the trade worksheet, unless TRADE_ETO_READ_ONLY is true.

If TRADE_ETO_READ_ONLY is true, the actual ETO equity products have to be generated from the Option Contracts window, or they can be imported using a custom mechanism.

▶ See Creating ETO Contracts for details.

Choose **Trade > Equity > Listed Options** to open the ETO Equity worksheet, from Calypso Navigator or from the Trade Blotter.

ETO Equity Quick Reference



When you open a worksheet, the Trade panel is selected by default.

Underlying Configuration

» Define the equity product using **Calypso Navigator > Configuration > Equity > Equity**.

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, see Field Description.

Note that the Trade Date is entered in the Details panel.

» Proceed to the other panels as applicable.

Saving a Trade

» Press F5 to save the trade, or choose **Trade > Save**.

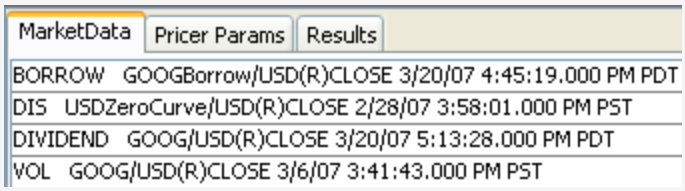
You can also press F3 to save the current trade as a new trade, or choose **Trade > Save As New**.

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

Pricing a Trade

- 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.

  An ETO equity trade requires the following market data: a discount curve, a dividend curve for the equity, an EQUITY volatility surface for the equity, and quotes for the equity and ETO equity. You can also use a borrow curve, but it is not required.



When pricing from quotes, 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.

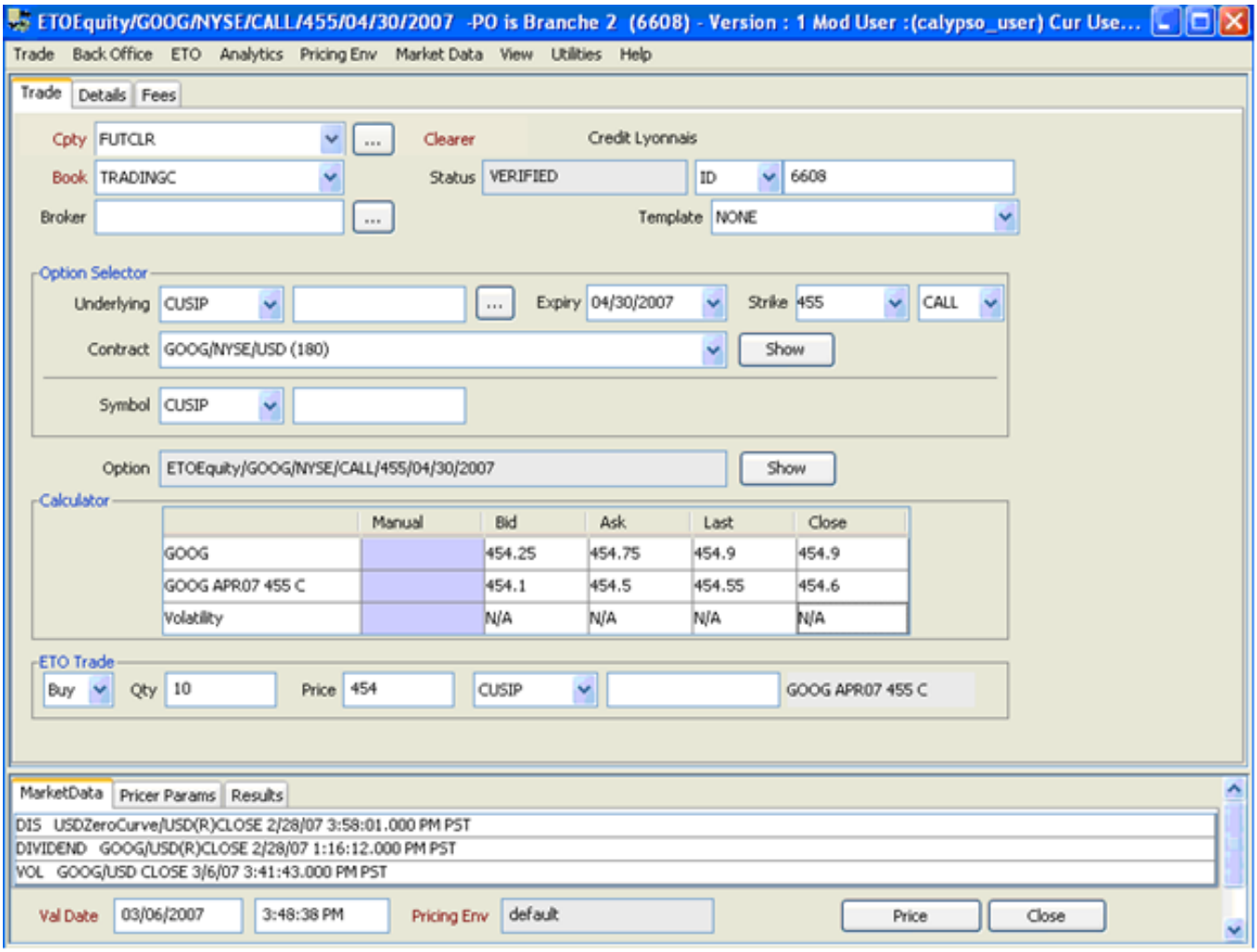
The system uses an upper boundary and a lower boundary to find a solution for the price: pricing parameters MAX_IMPLIED_VOL (default is 1000%) and MIN_IMPLIED_VOL (default is -1000%).

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

Trade Lifecycle

- You can allocate the trade to multiple books using **Back Office > Allocate**.
- You can liquidate the trade manually using **Back Office > Manual Liquidation**.
- You can apply corporate actions using **Calypso Navigator > Trade Lifecycle > Corporate Action > Corporate Action**, or using the CORPORATE_ACTION scheduled task.
- You can exercise the trade using **Calypso Navigator > Trade Lifecycle > Expiration & Exercise > Future Option / ETO Exercise**.

19.1 Sample ETO Equity Trade



ETO Trade Window - Sample Trade

» Enter the fields described below as needed.

19.2 Fields Description

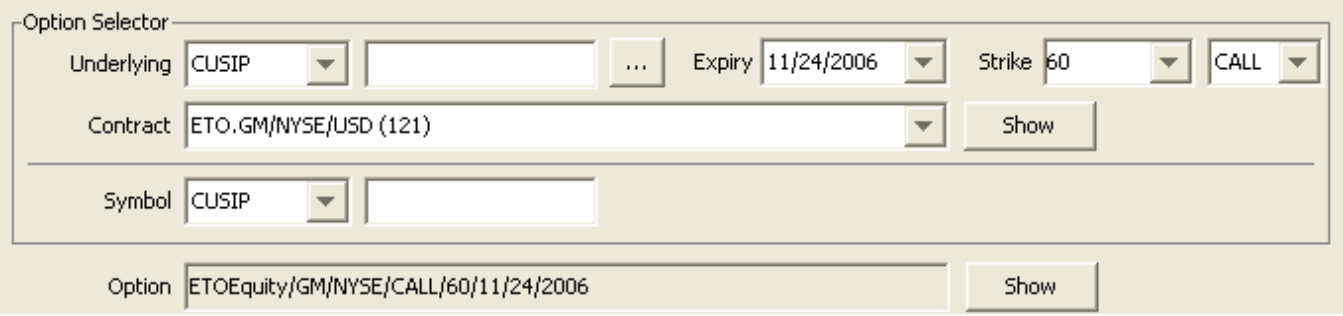
Trade Details

Fields	Description
Role/Cpty	The first two fields in the worksheet identify the trade counterparty. You can select a legal entity of specified role from the first field provided you have setup favorite counterparties. Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Alternatively, double-click the Cpty label to set the list of favorite counterparties. You can also type in a character to display the favorite counterparties that

Fields	Description
	start with that character. Otherwise, click ... to select a legal entity of specified role from the Legal Entity Chooser. The second field identifies the trade counterparty's role. The default role is specified using **Utilities > Set Default Role**. However, you can change it as applicable. Alternatively, double-click the CounterParty label to change the role.
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**. Alternatively, double-click the Book label to set the list of favorite books. Otherwise, click ... to select a book. The owner of the book (a processing organization) identifies your side of the trade.
Status	Current status of the trade. The status is automatically assigned by the system based on the workflow configuration. The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.
ID Ext Ref Int Ref	Unique identification number of the trade. The trade id is automatically assigned by the system when the trade is saved. You can load an existing trade by typing the trade id into this field, and pressing [Enter]. You can also display the internal reference of external reference. The default trade reference 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.
Template	You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.

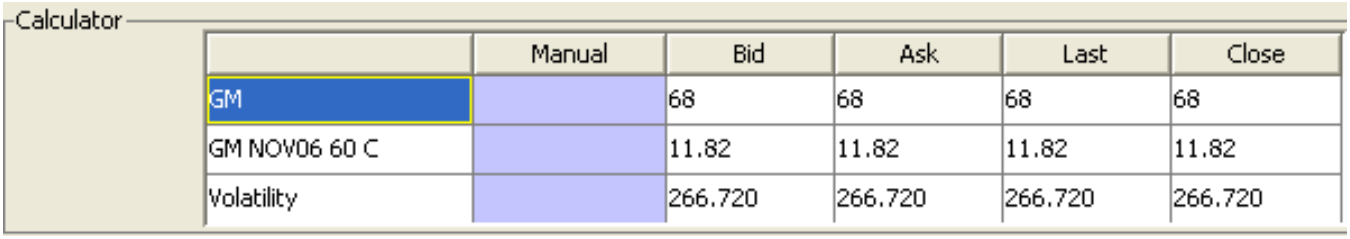
Broker	Select a legal entity of role Broker as needed. It adds a fee of type BRK to the Fees panel. Please select the Fees panel to modify the fee as needed.

Option Selector Details



Fields	Description
Underlying	You can select a security code, and type in a few characters in the adjacent field to display all equities starting with those characters. You can select an equity from the list. You can also click **...** to bring up the equity product chooser. Once you have selected an equity, the first ETO equity product that exists in the system will be automatically selected. You can change the expiration date, strike, and option type to select a different ETO equity product. If there is no existing product and TRADE_ETO_READ_ONLY is False, you can select a contract, an expiration, an option type, and enter a strike. The system will create the corresponding ETO equity product on the fly.
Expiry	You can select an available expiration date, based on the expiration date rule selected in the ETO contract.
Strike	Select a strike if available, or enter a strike to create a new ETO equity product.
Option Direction	Select the option's direction from the book's perspective: CALL or PUT.
Contract	If a contract exists for the selected underlying, it will be automatically selected. You can select another one as needed. You can click **Show** to view the contract details.
Symbol	You can select a security code of the ETO equity product, and the corresponding value will be displayed in the adjacent field. The actual ETO equity product is shown in the Option field.
Option	Displays the actual ETO equity product that has been selected, based on the contract, expiration date, strike, and option direction. You can click **Show** to view the product details. You can view the actual ETO equity products from **Calypso Navigator > Configuration > Equity > Stock Options**.

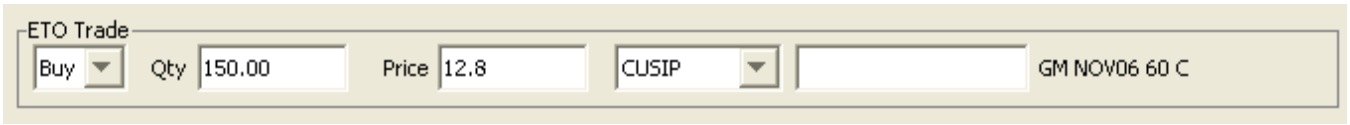
Calculator Details



The calculator displays the current quotes of the underlying equity and ETO equity, and the current volatilities.

You can enter a manual value for the underlying equity and volatility, and it will calculate the quote of the ETO equity.

ETO Trade Details



Fields	Description
Buy / Sell	Select the direction of the trade from the book's perspective: Buy or Sell.
Qty	Enter the number of options that you are buying or selling.
Price	Enter the unit price of the option.
Security Code	You can select a security code of the option, and the corresponding value will be displayed in the adjacent field.

NPV = Contract Size * Price * Quantity

19.3 ETO Transfers

By default ETO transfers for ETO Equity Index trades are DFP.

You need to add the domain "ETODAPSupport" with Value = true to create DAP transfers for ETO Equity Index trades if the same SDI applies to Cash and Security.

20. Capturing Structured Note Trades

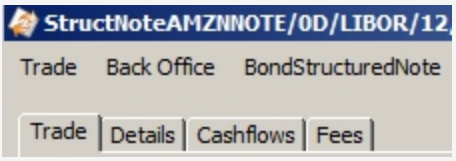
Structured Notes are a type of instrument based on the resale of notes issued by an entity. The notes can also be issued by the seller. A sales desk would profit by taking a margin between the prices of the purchase and the sale.

In parallel with the sale of notes to investors, the issuer hedges against the equity risk and obtains a financial rating for its liquidity. The trading desk can either retain a residual position or fully hedge the risk.

Notes are typically sold to investors on or just prior to the issue date and held until the Maturity Date unless a redemption event occurs or the investor requests a sell back.

Choose **Trade > Equity > Structured Note** to open the Structured Note worksheet from Calypso Navigator or from the Calypso Workstation.

Structured Note Quick Reference



When you open a trade worksheet, the Trade panel is selected by default.

Underlying Configuration

» Structured Note products are created using **Calypso Navigator > Configuration > Equity > Structured Note**.

▶ Create a Bond Structured Note

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, see Field Description.

Note that the Trade Date is entered in the Details panel.

» Proceed to the other panels as applicable.

Saving a Trade

» Press F5 to save the trade, or choose **Trade > Save**.

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

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

workflow configuration.

Pricing a Trade

» A structured note trade requires the following market data: a discount curve and a quote for the equity. If the settlement currency is a different currency than the product currency, then an FX quote is also required.

You will need to define a Dividend Curve and Volatility Curve for the underlying Equity asset. A Discount Curve is required for the settlement currency.

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

» Click **Price** to price the trade.

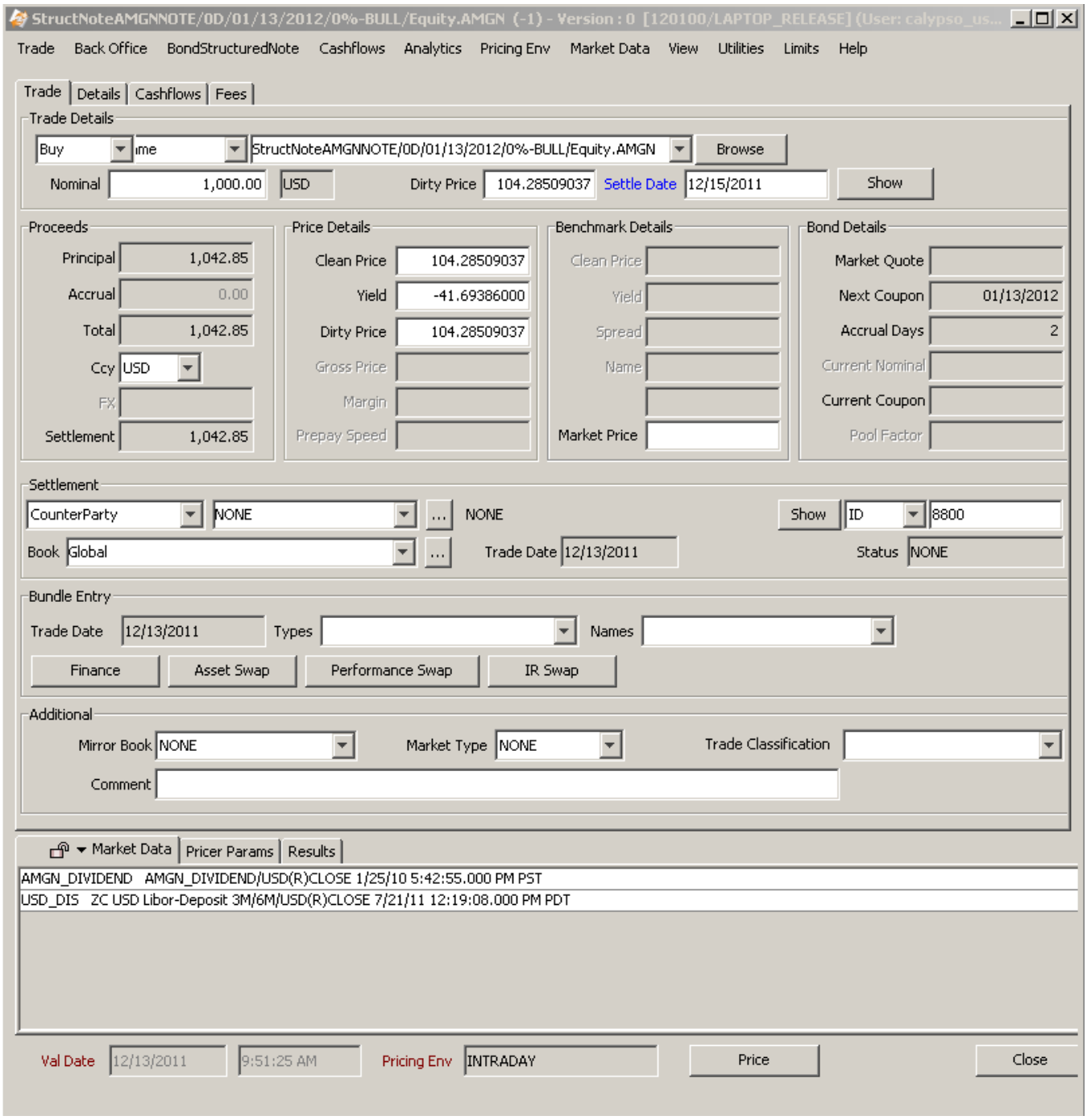
Trade Lifecycle

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

» You can terminate the trade using **Back Office > Terminate**.

» You can apply corporate actions using **Calypso Navigator > Trade Lifecycle > Corporate Action > Corporate Action**, or using the CORPORATE_ACTION scheduled task.

20.1 Sample Structured Note Trade

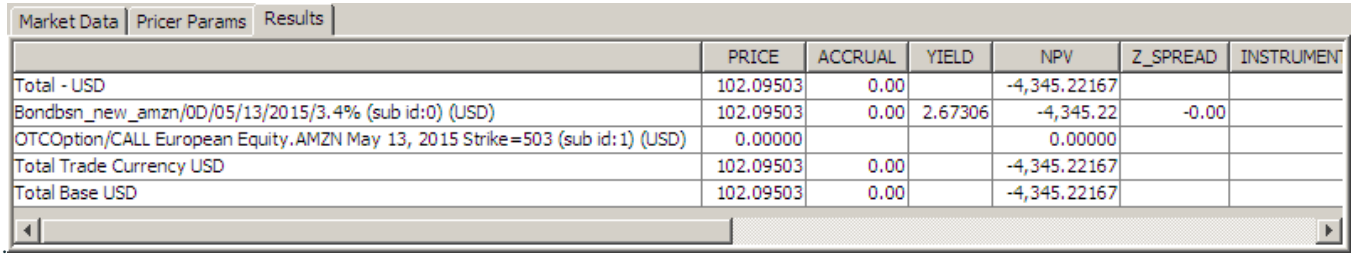


Structured Note Trade Window - Sample Trade

- Select the trade type (Buy/Sell/Issue/Upsize/Re-Open/Close).
- Enter the unique Identifier or click ... to select the Bond Structured note using the Product Chooser.

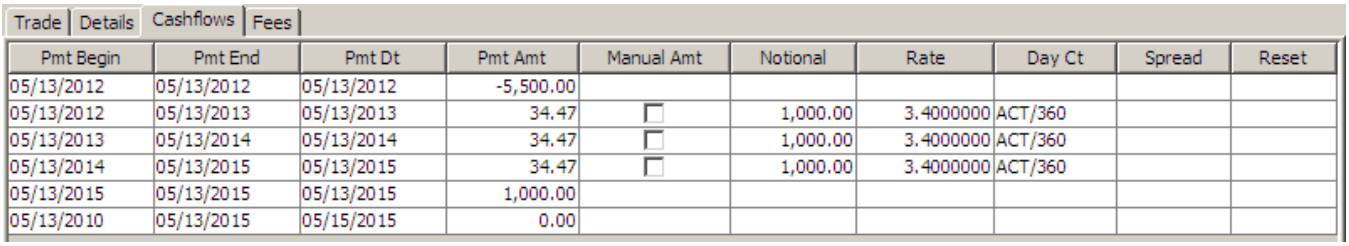
» Enter the **Nominal Amount**, **Dirty Price**, **Settle Date**, and **Yield**.

» Click **Price**.



Market Data | Pricer Params | Results

	PRICE	ACCRUAL	YIELD	NPV	Z_SPREAD	INSTRUMENT
Total - USD	102.09503	0.00		-4,345.22167		
Bondbsn_new_amzn/0D/05/13/2015/3.4% (sub id:0) (USD)	102.09503	0.00	2.67306	-4,345.22	-0.00	
OTCOption/CALL European Equity.AMZN May 13, 2015 Strike=503 (sub id:1) (USD)	0.00000			0.00000		
Total Trade Currency USD	102.09503	0.00		-4,345.22167		
Total Base USD	102.09503	0.00		-4,345.22167		



Trade | Details | Cashflows | Fees

Pmt Begin	Pmt End	Pmt Dt	Pmt Amt	Manual Amt	Notional	Rate	Day Ct	Spread	Reset
05/13/2012	05/13/2012	05/13/2012	-5,500.00						
05/13/2012	05/13/2013	05/13/2013	34.47	☐	1,000.00	3.4000000	ACT/360		
05/13/2013	05/13/2014	05/13/2014	34.47	☐	1,000.00	3.4000000	ACT/360		
05/13/2014	05/13/2015	05/13/2015	34.47	☐	1,000.00	3.4000000	ACT/360		
05/13/2015	05/13/2015	05/13/2015	1,000.00						
05/13/2010	05/13/2015	05/15/2015	0.00						

20.2 Fields Details

Trade Details

Fields	Description
Buy / Sell / Issue / Upsize / Re-Open / Close	Select Buy or Sell as applicable to indicate the direction of the trade from the book's perspective. You can switch between the trade directions using the space bar (note that the space bar is not active in the Speed Entry Panel). Issue, Upsize / Re-Open / Close apply to activity related to bond issues from the processing org. ⓘ **[NOTE: Close can only be used if issuance has been performed on the product]** ▶ Refer to Calypso Fixed Income documentation for details.
Product code Product description	You can select a structured note using one of the following methods: • Select a product code, and type in a few characters of the code value in the adjacent field. The system searches all the structured notes defined in the system, and those that satisfy the request are displayed in a list. Select a structured note from the list. Note that the product code defaults to the Security Code selected in the User Defaults.

Fields	Description
	• Click ... to select a structured note from the Product Chooser Window - Help is available from that window. Once you have selected a structured note, you can click **Show** to view the product details in the Structured Note Product window.
Nominal	Enter the amount of nominal that is traded. This is the original nominal. The adjacent field displays the product's currency.
Dirty Price	The label actually displays the quote type of the product. Defaults to the market quote as of the trade date if any. Modify as applicable. See Clean Price, Yield and Dirty Price below for details. If there is no market quote and BOND_FROM_QUOTE is false, we price the product from curve to produce an initial price for trading.
Settle Date	The settlement date defaults to the trade date + the number of settle days specified in the product. The settlement date uses the holiday calendar of the product to identify business days. If you change the trade date in the Details panel, double-click the Settle Date label to update the settlement date accordingly.

Proceeds Details

Fields	Description
Principal	The principal amount is calculated as Nominal * Clean Price
Accrual	The amount of accrued interest is calculated based on the Accrual Days.
Settlement	The settlement amount is calculated as principal + accrual
Ccy	The settlement currency defaults to the product's currency. Modify as applicable from the drop-down menu.
FX	The FX field is enabled when the settlement currency is different from the product's currency. » Enter the FX rate between the settlement currency and the product's currency. The settlement amount is recalculated accordingly.

Price Details

Fields	Description
Clean Price Yield	Enter the clean price, yield, or dirty price, and the other fields will be calculated accordingly. The dirty price is clean price + unit accrual.

Fields	Description
Dirty Price	For structured notes quoted using Price32, you can enter the trade's price with two, three, or four digits after the dash. The first two digits represent the number of thirty-seconds (between 1 and 31). If the price contains 3 digits, the third digit represents the number of eighths of a thirty second (or 1/256, between 1 and 7). A price entered as "99-022" will be read as [99 + 2/32 + 2/8(1/32)], or 99.0703125. The third digit can also be +, indicating 4/8 of a thirty second. If the price contains 4 digits, the last two digits represent the number of sixteenths of a thirty second (or 1/512, between 1 and 15). Note that the four-digit logic only applies to notes with the tick size 512.
Gross Price	Not used.
Margin	Not used.
Prepay Speed	Not used.

Benchmark Details

Fields	Description
Clean Price	Not used.
Yield	Not used.
Spread	Not used.
Name	Not used.
Market Price	Specify the market price.

Bond Details

Fields	Description
Market Quote	Displays the latest quote as of the trade date, if any. If there is no quote, and BOND_FROM_QUOTE is false, we do not try to calculate a quote from curve.
Next Coupon	Displays the next coupon date.
Accrual days	Displays the number of days between the last coupon date and the settlement date.
Current Nominal Pool Factor	Not used.
Current Coupon	Displays the current coupon rate.

Settlement Details

Fields	Description
Legal entity	The first field identifies the legal entity role. The default role is specified using **Utilities > Set Default Role**. However, you can change it as applicable. You can select a legal entity of specified role from the second field provided you have setup favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character. Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Otherwise, click ... to select a legal entity of specified role from the Legal Entity Chooser. You can also type Ctrl-F to invoke the Legal Entity Chooser, or directly enter a Legal Entity short name. Click **Show** to display the details of the selected legal entity. You can also choose **Utilities > Selected Counterparty Info**.
Id Ext Ref Int Ref	Unique identification number of the trade. The trade id is automatically assigned by the system when the trade is saved. You can load an existing trade by typing the trade id into this field, and pressing [Enter]. You can also display the internal reference or external reference. The default trade reference to be displayed can be selected in the User Defaults. The internal reference and external reference can be set in the Details panel of the trade worksheet.
Book	Trading book to which the trade belongs. Defaults to the book selected in the User Defaults. You can modify as applicable. You can select a book provided you have setup favorite books. You can also type in a character to display the favorite books that start with that character. Click ... to specify favorite books or **Utilities > Configure Favorite Books**. The processing org of the book identifies the processing org of the trade.
Trade Date	Displays the trade date specified in the Details panel.
Status	Current status of the trade. The status is automatically assigned by the system based on the workflow configuration. The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.

Bundle Entry Details

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

You can also finance the trade, capture an asset swap, capture a performance swap. or capture an interest rate swap by clicking on the corresponding buttons.

Fields	Description
Trade Date	The Trade Date is displayed from the Details panel.
Types	Select a bundle type.
Names	Select a bundle.

Additional Details

Fields	Description
Mirror Book	Select a mirror book if you want to mirror the current trade. You can select the mirror trader from the Details panel. A mirror trade will be saved with the current trade to the selected book, and you can view the mirror trade id from the Details panel.
Market Type	Defaults to the market type selected in the User Defaults. You can modify as applicable. Market types are created in the *marketType* domain.
Trade Classification	You can select a classification for the trade as applicable. This classification is for information purposes only. It is stored in the trade keyword "TradeClassification", and available values can be set in domain *keyword.TradeClassification*. It can be used in filters to filter trades for various processes, and can be viewed in reports throughout the system.
Comment	Enter a free comment as applicable.
Commission (%)	For Issue, Upsize, Re-Open, and Close trades, you may specify the commission.

21. Capturing Exotic Note Trades

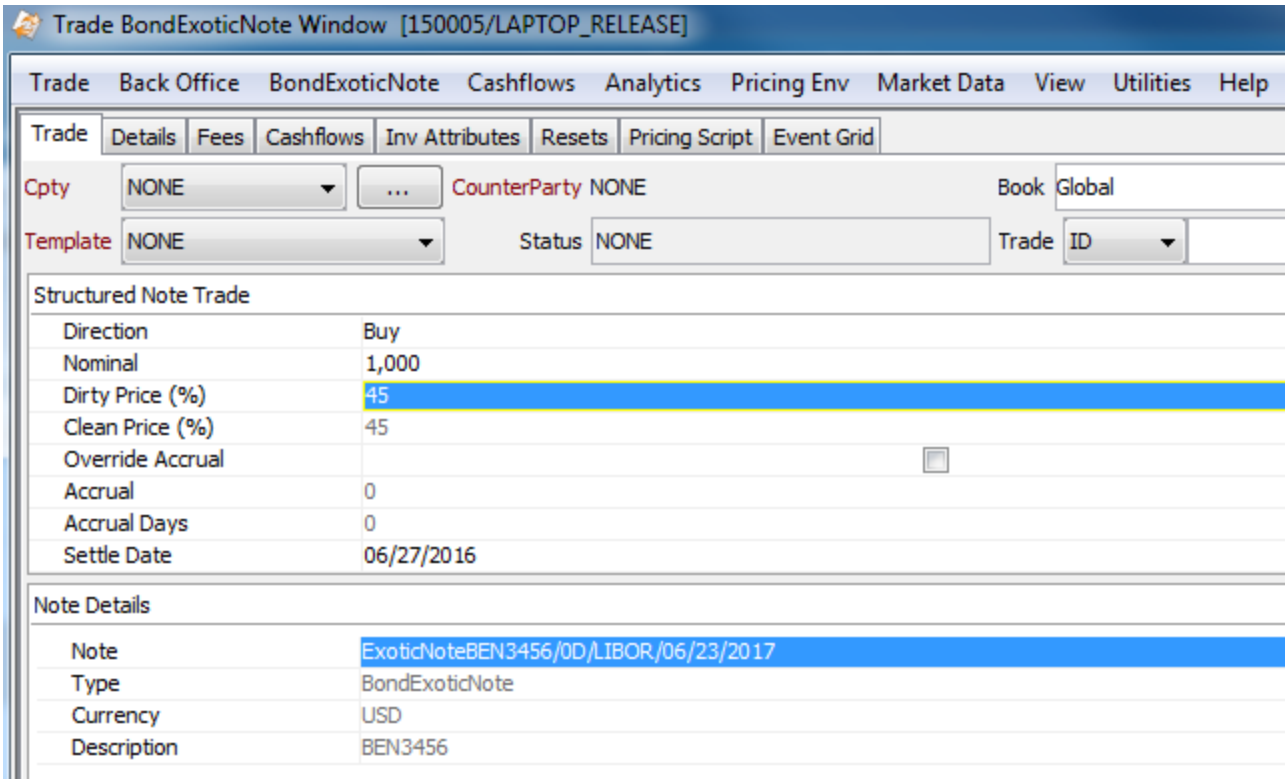
This document describes how to capture Exotic Note trades.

Choose **Trade > Equity > Exotic Note** (menu action `trading.TradeBondExoticNoteWindow`) to open the Exotic Note Trade Window.

Prior to trading, you must define Exotic Notes.

▶ See Exotic Note Definition for details.

21.1 Sample Exotic Note Trade



Exotic Note trade window - Trade panel

» Enter the fields described below, then proceed to the other panels as needed.

» Choose **Trade > Save** to save the trade as applicable.

Trade Details

Fields	Description
Role/Cpty	The first two fields in the worksheet identify the trade counterparty.

Fields	Description
	You can select a legal entity of specified role from the first field provided you have setup favorite counterparties. Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Alternatively, double-click the Cpty label to set the list of favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character. Otherwise click ... to select a legal entity of specified role from the Legal Entity Chooser. The second field identifies the trade counterparty's role. the default role is specified using **Utilities > Set Default Role**. However, you can change it as applicable. Alternatively, double-click the counterpart label to change the role.
Book	Trading book to which the trade belongs. Defaults to the book selected in the User Defaults. You can modfy as applicable. You can select a book provided you have setup favorite books. Favorite books are specified using **Utilities > Configure Favorite Books**. Alternatively double-click the Book label to set the list of favorite books. Otherwise, click ... to select a book. The owner of the book (a processing organization) identifies your side of the trade.
Status	Current status of the trade. The status is automatically assigned by the system based on the workflow configuration. The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.
Id Ext Ref Int Ref	Unique identification number of the trade. The trade is automatically assigned by the system when the trade is saved. You can load an existing trade by typing the trade id into this field, and pressing [Enter]. You can also display the internal reference of external reference. The default trade reference 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.
Template	You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.

Field Details

Fields	Description
Direction	Click the field to select either Buy or Sell. You can also select Issue / Upsize / Re-Open / Close for activity related to bond exotic note issues from the processing org. See Issuance Activity for details.
Nominal	The amount of nominal that is traded. The nominal must be a multiple of the note's denomination.

Fields	Description
	Nominal value defaults to the Denomination specified in the Exotic Note Definition window.
Dirty Price (%)	Enter the dirty price, which is the clean price + accrual.
Clean Price (%)	You cannot directly input the Clean Price. The Clean Price is automatically calculated based on the Nominal, Dirty Price, and Accrual.
Override Accrual	Tick the checkbox to manually input the Accrual below.
Accrual	Displays the accrual percentage as of the settle date.
Accrual Days	Not currently used.
Settle Date	Enter the settlement date for the trade.
Note	Click **...** and select the Exotic Note to trade. The type, currency, and description will be displayed based on the details specified in the Exotic Note window. You can click **Product Info** to view the product details.
Commission %	Percentage of issuance commission. This percentage will be applied to the position at the time of coupon.

21.2 Displaying Pricing Script Results

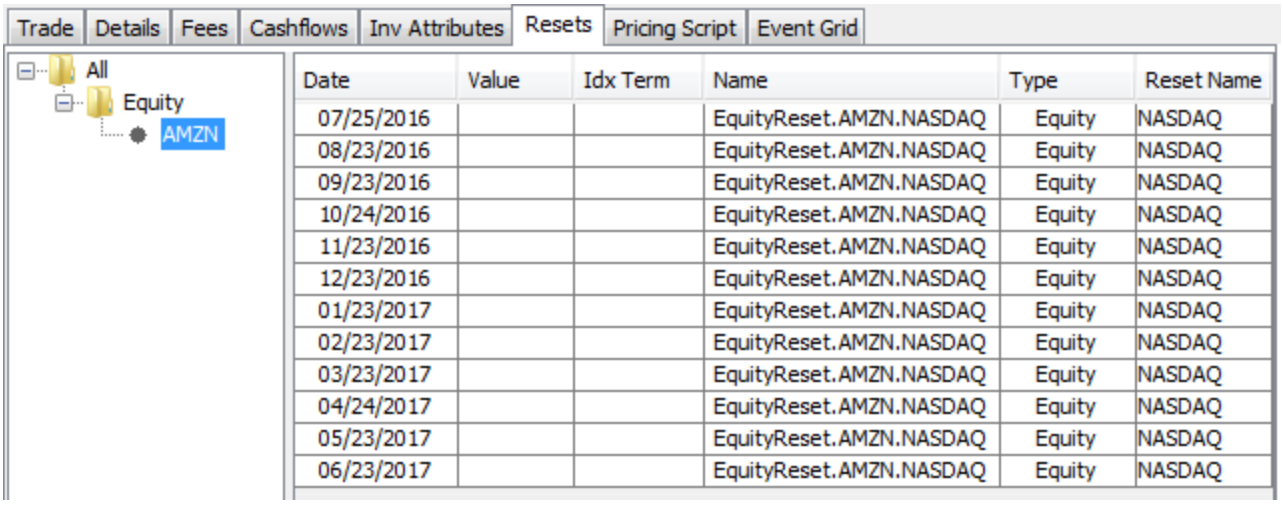
If the Pricing Script defines measures, you can select the Script Results panel to display the values of all the measures defined in the script.

▶ Refer to Calypso Pricing Script documentation for details.

21.3 Displaying Resets

Select the Resets panel to display reset values for the trade.

Click **Load Resets** to load reset details.



Date	Value	Idx Term	Name	Type	Reset Name
07/25/2016			EquityReset.AMZN.NASDAQ	Equity	NASDAQ
08/23/2016			EquityReset.AMZN.NASDAQ	Equity	NASDAQ
09/23/2016			EquityReset.AMZN.NASDAQ	Equity	NASDAQ
10/24/2016			EquityReset.AMZN.NASDAQ	Equity	NASDAQ
11/23/2016			EquityReset.AMZN.NASDAQ	Equity	NASDAQ
12/23/2016			EquityReset.AMZN.NASDAQ	Equity	NASDAQ
01/23/2017			EquityReset.AMZN.NASDAQ	Equity	NASDAQ
02/23/2017			EquityReset.AMZN.NASDAQ	Equity	NASDAQ
03/23/2017			EquityReset.AMZN.NASDAQ	Equity	NASDAQ
04/24/2017			EquityReset.AMZN.NASDAQ	Equity	NASDAQ
05/23/2017			EquityReset.AMZN.NASDAQ	Equity	NASDAQ
06/23/2017			EquityReset.AMZN.NASDAQ	Equity	NASDAQ

You can select an equity reset from the Reset Name field. The fixing quote should be set for the quote name in the form "EquityReset.<equity name>.<reset name>". If you do not select an equity reset, CLOSE is selected by default. The fixing quote is the spot quote in that case.

You can also select "Specific Reset" and enter a manual fixing quote in the Value field.

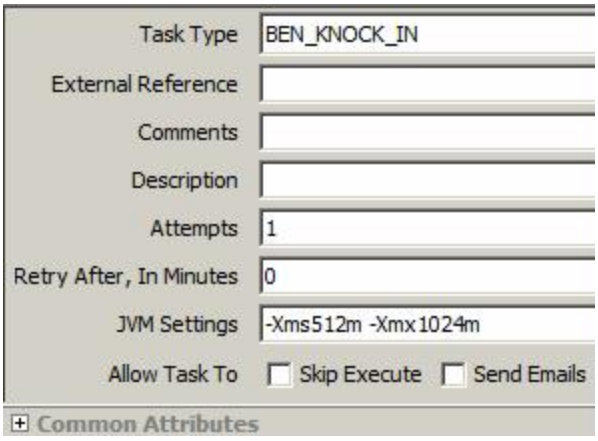
Equity resets are defined in the Equity Definition or Equity Index Definition.

21.4 BEN_KNOCK_IN Scheduled Task

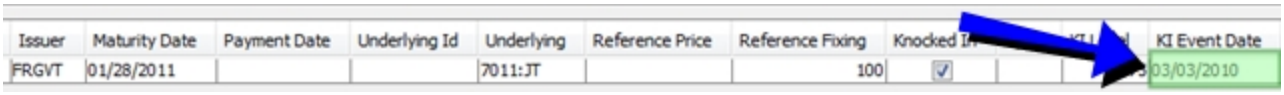
The BEN_KNOCK_IN scheduled task can be used for monitoring Knock In events.

You may need to add it to the domain *scheduledTask*.

Keep in mind that the BEN_KNOCK_IN scheduled task only checks for events on the scheduled task's valuation date.



After running the scheduled task, if there is a KI event, the KI Event Date is saved and can be viewed in the Exotic Settlement Report.



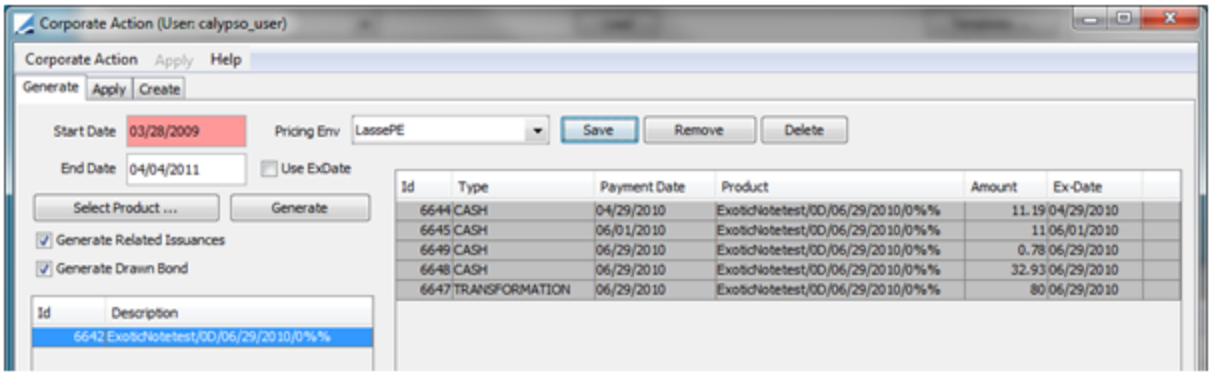
Issuer	Maturity Date	Payment Date	Underlying Id	Underlying	Reference Price	Reference Fixing	Knocked In	KI Event Date
FRGVT	01/28/2011			7011:JT		100	☑	03/03/2010

▶ Refer to Calypso Pricing Script documentation for details.

21.5 Corporate Actions

For Exotic Notes, corporate actions are used for managing cash flow based events.

- To generate Corporate Actions for realized cash flows, open the Corporate Action (CA) window.
- Select a Note using the **Select Product** product chooser.
- Then click **Generate**. This will generate Corporate Actions for all cash flows of this product.
- Select the CA you want to save and click **Save**. This saves the Corporate Actions to the database and they can be applied.

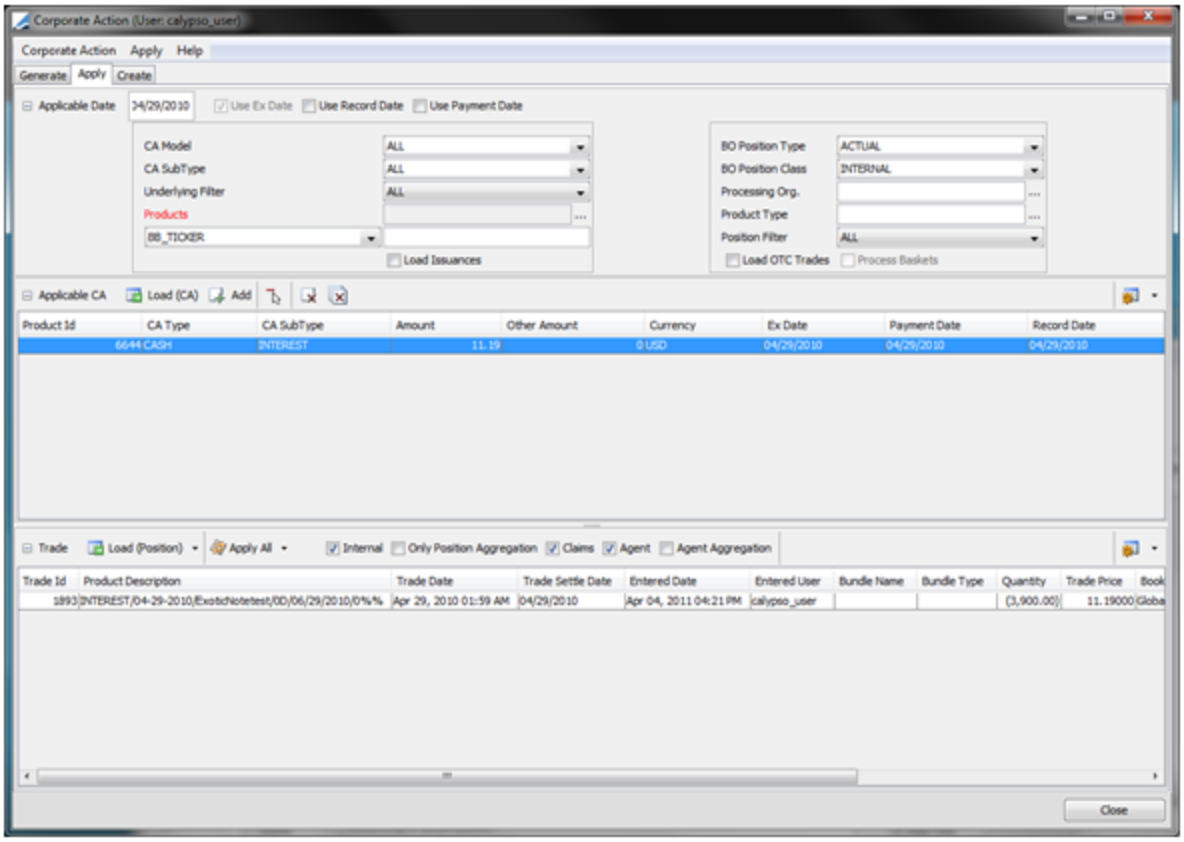


Double clicking a CA from the previous view brings the CA into the Apply section of the window.

The example below shows an interest payment. The CA can be applied to the open position.

- Click **Load (Position)**.
- Click **Apply All**.

This will generate a trade. The trade id can be seen at the bottom of the Corporate Action window.

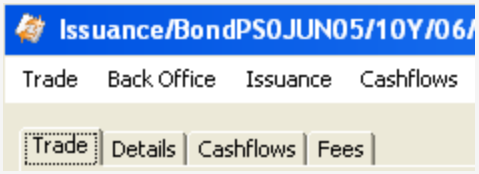

Corporate Action (User: calypso_user)
Corporate Action
Apply
Help
Generate
Apply
Create
Applicable Date
04/29/2010
Use Ex Date
Use Record Date
Use Payment Date
CA Model
ALL
CA SubType
ALL
Underlying Filter
ALL
Products
BB_TICKER
Load Issuances
BO Position Type
ACTUAL
BO Position Class
INTERNAL
Processing Org.
Product Type
Position Filter
ALL
Load OTC Trades
Process Baskets
Applicable CA
Load (CA)
Add
Product Id
CA Type
CA SubType
Amount
Other Amount
Currency
Ex Date
Payment Date
Record Date
6644 CASH
INTEREST
11.19
0 USD
04/29/2010
04/29/2010
04/29/2010
Trade
Load (Position)
Apply All
Internal
Only Position Aggregation
Claims
Agent
Agent Aggregation
Trade Id
Product Description
Trade Date
Trade Settle Date
Entered Date
Entered User
Bundle Name
Bundle Type
Quantity
Trade Price
1893
INTEREST/04-29-2010,Exoticnotetest/0D/06/29/2010/0%%
Apr 29, 2010 01:59 AM
04/29/2010
Apr 04, 2011 04:21 PM
calypso_user
(3,900.00)
11.19000
Close

22. Capturing BEN Issuance Trades

An issuance trade allows configuring issues offered by a processing org.

To configure an issuance trade, navigate to **Trade > Equity Derivatives > Issuance** (menu action `trading.TradeIssuanceWindow`).

Issuance Quick Reference



Entering Trade Details

- You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable.

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

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

Saving a Trade

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

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

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

Pricing a Trade

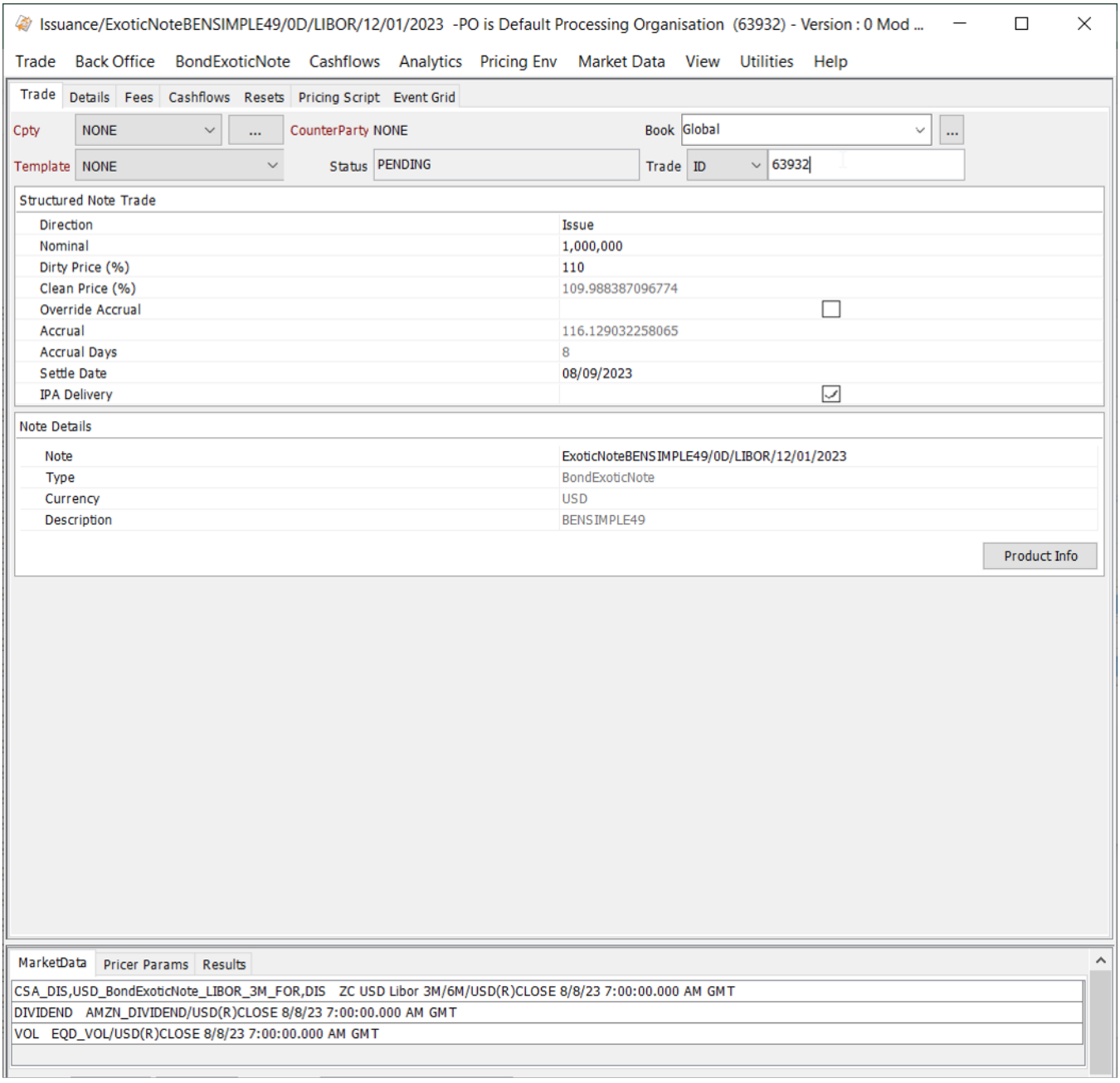
- You can choose **Pricing Env > Check** to check if all required pricing data are available in the Pricing Environment.
- Click **Price** to price the trade.

Trade Lifecycle

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

22.1 Sample Issuance Trade

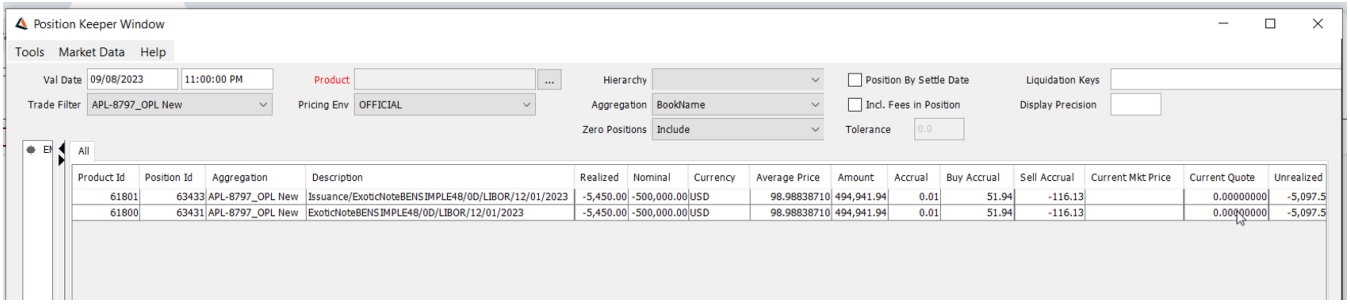
Ben issuance trades can be booked using Direction 'Issue'.



22.2 Issuance Position

From the Calypso Navigator, navigate to **Position & Risk > Positions** to view the open position of the issuance, provided the liquidation is running.

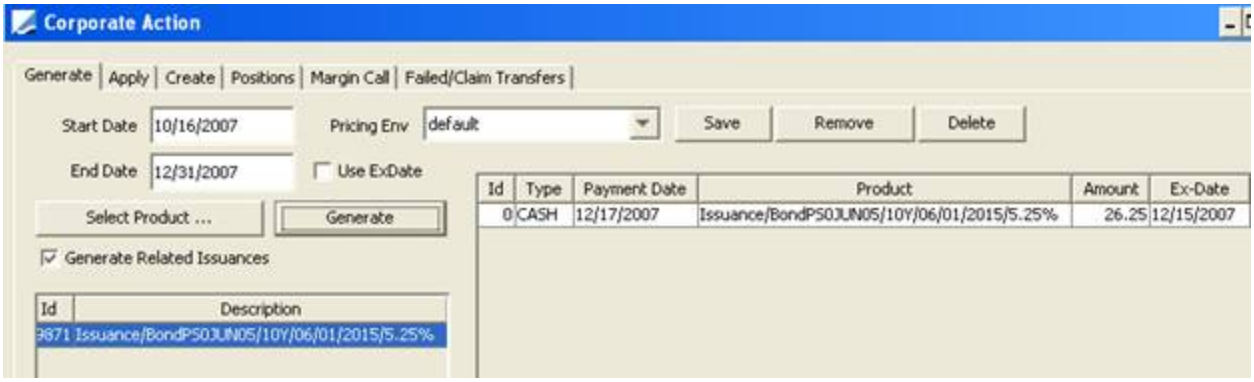
Note that the system creates an Issuance product linked to the bond exotic note, when the Issuance Trade is validated.



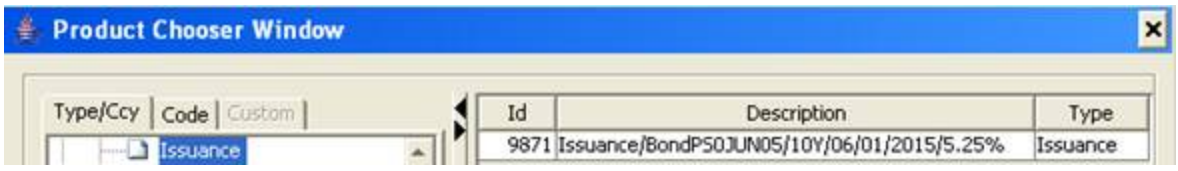
22.3 Issuance Corporate Actions

From the Calypso Navigator, navigate to **Trade Lifecycle > Corporate Action > Corporate Action** to generate corporate actions. The Corporate Action window will appear as shown below.

The characteristic of corporate actions on issuance trades is that they are generated on the Issuance product created by the system and not on the bond exotic note of the issuance trade.



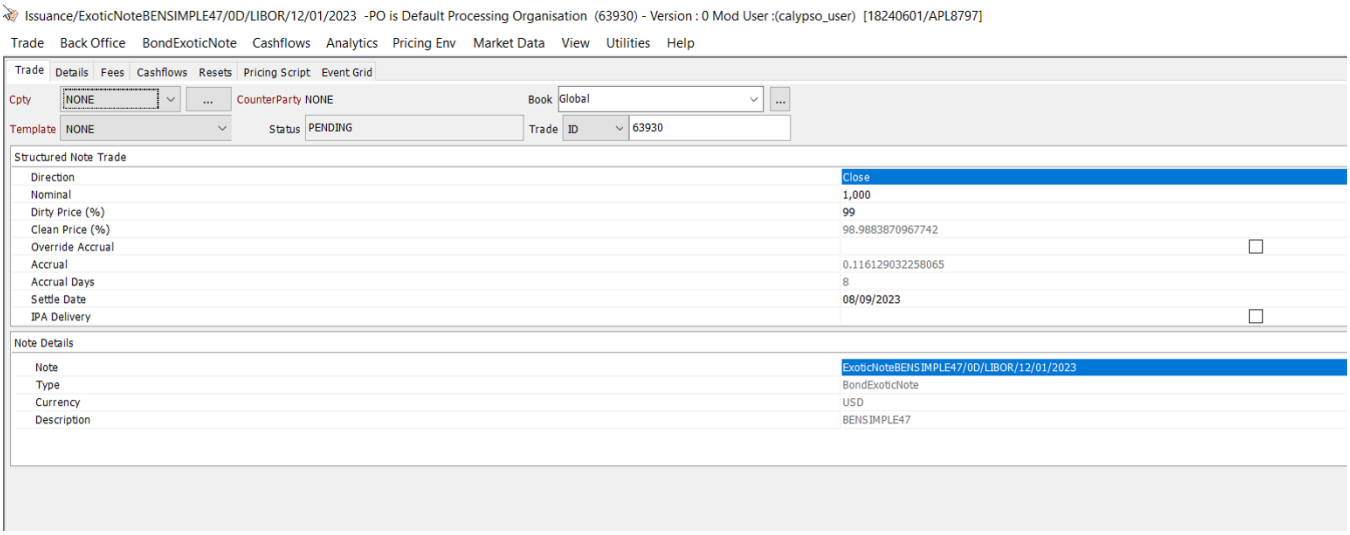
- Enter the start and end dates as applicable.
- Click **Select Product** and choose the Issuance product as shown below.



- Then click **Generate** to generate the corporate actions.

22.4 Closing an Issuance

You can close an issuance by entering a Closing trade on the bond exotic note, using the Bond exotic window to buy back the bond exotic note.



The Closing trade will liquidate the entire open position of the bond exotic note.

22.5 Issuance Activity

22.5.1 Issuing a Bond Exotic Note

The issue corresponds to the sale of a note from the perspective of the processing org.

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

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

22.5.2 Upsizing a Bond Exotic Note

Once a note has been issued but not yet settled, you can use that action to modify the total issued on the bond. Select the note that has been issued, and enter a nominal amount to increase the total issued.

22.5.3 Re-Opening a Bond Exotic Note

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

22.5.4 Closing a Bond Exotic Note

This action allows buying back the note.

23. Capturing Equity Structured Option Trades

An Option is an agreement between two parties to exchange one or more fees based on a Payout Type. The Payout formula typically refers to Underlyings. For example, an option pays out $2 if a particular equity is above a specified level.

To enter an option, the user must provide the following details:

- Payout – The desired Payout Type. The Payout Type corresponds to a Payout Formula, which determines the amount and the number of fees.
- Underlying – The Payoff Formula is based upon the underlying instruments, including baskets.
- Expiration Date – The Option expires or has its final Payout on this date.

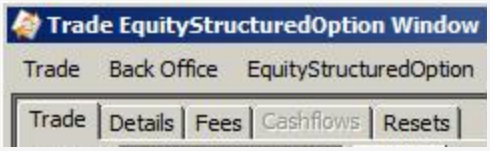
The Equity Structured Option Trade Window allows the user to capture trade details for numerous Equity Option Payout types. The available Payout Types are:

- Vanilla – Gives the buyer the right, but not the obligation, to buy or sell an equity or equity index at a fixed price on or before a specified date. There are several variations of the Vanilla option.
- Asian/Lookback – An Asian Strike and Rate option, or Asian In and Out, is one where the Strike and/or Final reference level of the option is the average of one or more fixing dates.
- Barrier (Single/Double Barrier, Full/Partial/At Expiry Window, with/without Rebates) – Barrier (or Knock) options are standard options whose value depends on whether a certain barrier is reached.
- Chooser – The Chooser Payoff allows the holder to choose whether to enter into one of two possible options on the Expiration Date.
- Cliquet – A Cliquet is a multi-period option with a single payoff at maturity.
- Compound – An Equity Compound Option is an option on a simple option (which is the underlying).
- Digital (Cash or Asset) – Payout for a Digital is pre-determined at the beginning of the contract and is paid according to whether the spot level is achieved (or not achieved).
- Forex – Trades where the Trade Currency and Settlement Currency are different.
- Performance – Rainbow, Best Of and Worst Of structures are not supported in the Equity Structured Option Trade window. Please use the Pricing Script to model these structures.

  ▶ Please refer to Calypso Pricing Script Examples documentation for details.
- Structured Vanilla – A Structured Vanilla trade allows the user to create a vanilla trade using features from Forex, Digitial, Asian, Lookback, and Barriers.

Choose **Trade > Equity > Equity Structured Option** to open the Equity Structured Option worksheet, from Calypso Navigator or from the Trade Blotter.

Equity Structured Option Quick Reference



When you open a worksheet, the Trade panel is selected by default.

Underlying Configuration

- Equity products are created using **Calypso Navigator > Configuration > Equity > Equity**.
- Equity index products are created using **Calypso Navigator > Configuration > Equity > Equity Indexes**.
- Baskets are created using **Calypso Navigator > Configuration > Basket**.

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, see Field Description.

  Note that the Trade Date is entered in the Details panel.

  Choose a Payout type. Your choice of Payout determines which panes the application displays in the Payout Parameter area on the right-hand side of the trade window. The application only displays the panes applicable to the style of payout you have selected. Note that the Trade Configuration, Underlying Details, and Trade Settlement panes are common to all Payout types.
- Proceed to the other panels as applicable: Details, Fees (premium), Resets (fixing requirements).

Saving a Trade

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

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

  Once saved, 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.

Pricing a Trade

- Equity structured option trades need the following market data: Discount curves, Dividend curves, Borrow curves, EQUITY volatility surfaces, Correlation Matrices,

Quotes.

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

» Click **Price** to price the trade.

Trade Lifecycle Equity – Equity Index

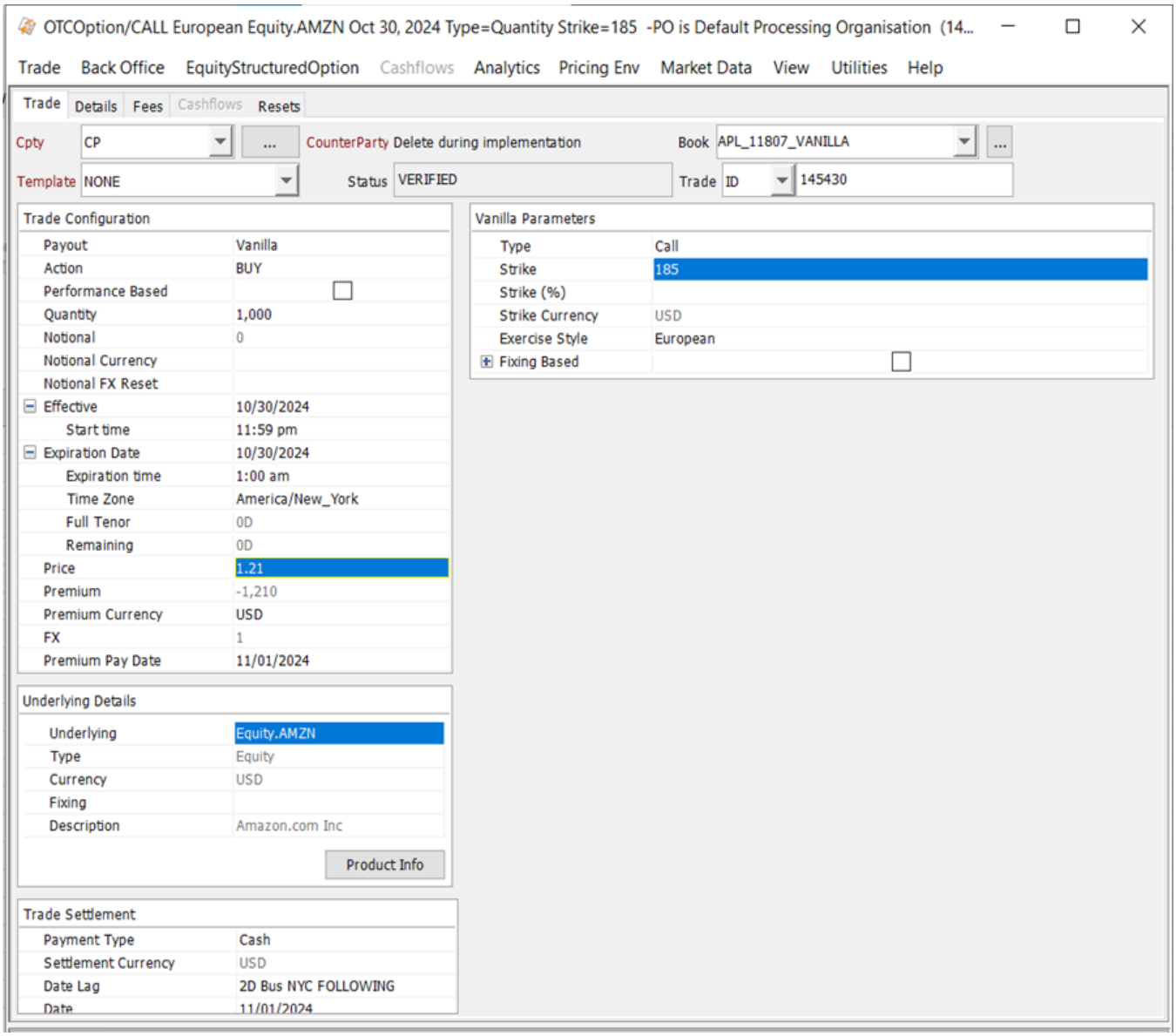
» You can fix prices using **Calypso Navigator > Trade Lifecycle > Reset > Price Fixing** or by using the PRICE_FIXING scheduled task.

You can fix prices that are specific to the current trade only in the Resets tab.

» You can terminate the trade using **Back Office > Terminate**.

» Option exercise is described below.

23.1 Sample Vanilla Equity Structured Option



Equity Structured Option Trade Window - Sample Vanilla Trade

» Enter the fields described below as needed.

23.1.1 Fields Details

Trade Details

Fields	Description
Role/Cpty	The first two fields in the worksheet identify the trade counterparty. You can select a legal entity of specified role from the first field provided you have setup favorite counterparties. Favorite counterparties are specified using **Utilities > Configure Favorite Counterparties**. Alternatively, double-click the Cpty label to set the list of favorite counterparties. You can also type in a character to display the favorite counterparties that start with that character. Otherwise, click ... to select a legal entity of specified role from the Legal Entity Chooser. The second field identifies the trade counterparty's role. The default role is specified using **Utilities > Set Default Role**. However, you can change it as applicable. Alternatively, double-click the CounterParty label to change the role.
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**. Alternatively, double-click the Book label to set the list of favorite books. Otherwise, click ... to select a book. The owner of the book (a processing organization) identifies your side of the trade.
Status	Current status of the trade. The status is automatically assigned by the system based on the workflow configuration. The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.
ID Ext Ref Int Ref	Unique identification number of the trade. The trade id is automatically assigned by the system when the trade is saved. You can load an existing trade by typing the trade id into this field, and pressing [Enter]. You can also display the internal reference of external reference. The default trade reference 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.
Template	You can select a template from the Template field to populate the worksheet with default values. Then modify the fields as applicable. The dates will be saved as relative in the trade templates only if the dates are entered as tenors. Effective Date should be a tenor compared to the valuation date. Expiration Date should be a tenor compared to the effective date. Premium Pay Date should be a tenor compared to the effective date. Trade settlement date should be a tenor compared to the expiration date (defined in trade

Fields	Description
	settlement date lag). An automatic roll will be applied on the Effective Date, Expiration Date and Premium Pay Date. The roll convention will be set as FOLLOWING in the trade template. Effective Date and Expiration Date will use the calendar of the Exchange. Premium Pay Date will use the calendar of the underlying currency.

Trade Configuration

Fields	Description
Payout	Select the Payout. Based on the payout, you will be prompted to select additional details. • Vanilla – Vanilla details are described below. • Asian/Lookback • Barrier • Chooser • Cliquet • Compound • Digital • Forex • Structured Vanilla
Action	Select BUY or SELL from the perspective of the processing org.
Performance Based	The amount of an option can be represented in units of underlying (Quantity) or Notional. Check "Performance Based" to specify the amount in notional, or clear "Performance Based" to specify the amount in quantity.
Quantity	Enter the number of shares for a non performance-based trade.
Notional	Enter the notional for a performance-based trade.
Notional Currency	Select the notional currency for a performance-based trade.
Notional FX Reset	Select the FX rate reset for a performance-based trade. FX rate resets are defined from the Calypso Navigator using **Configuration > Foreign Exchange > FX Rate Definitions**.
Effective	Enter the start date. Start time - Enter Start Time. The Effective Date and Time is in Expiry time zone.
Expiration Date	Enter the last exercise date for American or Bermudan options, or the exercise date for European options.

Fields	Description
	You can double-click the Expiration Date label to specify view additional parameters: • Expiration Time – Enter the time of day the option is exercised. • Time Zone – Select the expiry timezone. • Full Tenor – Total duration of the trade as a tenor. • Remaining – Remaining days as of the valuation date.
Price	Enter the option price in units or percentage.
Premium	Displays the premium amount. It generates a fee of type PREMIUM by default. Otherwise, you can specify the type of the fee in the domain *EquityStructuredOptionPremiumType*.
Premium Currency	Select the settlement currency of the premium.
FX	Enter the FX rate if the premium settles in a different currency.
Premium Pay Date	Select the payment date of the premium.

Underlying Details

Fields	Description
Underlying	Select the underlying: It can be an equity, an equity index or a basket. You can also type in the underlying's name. You cannot select a basket underlying for the payouts Chooser and Compound. **[NOTE: A performance-based trade does not accept baskets weighted in quantity as underlying]** **[NOTE: Only baskets of equity and equity index are supported]** You can click **Product Info** to view the details of the underlying.
Type	Displays the type of underlying.
Currency	Displays the currency of the underlying.
Fixing Date Roll	Choose a roll convention to be applied on basket components when defining the fixing date/s. The roll convention will be the same for all basket components but the Holiday of each component (defined on the Exchange level) will be respected separately.
Fixing	This field is no longer used. You can select an equity reset or set the fixing price in the Resets panel. ▶ See "Resets Details" on page 181 for more information.
Description	Displays the name of the underlying.

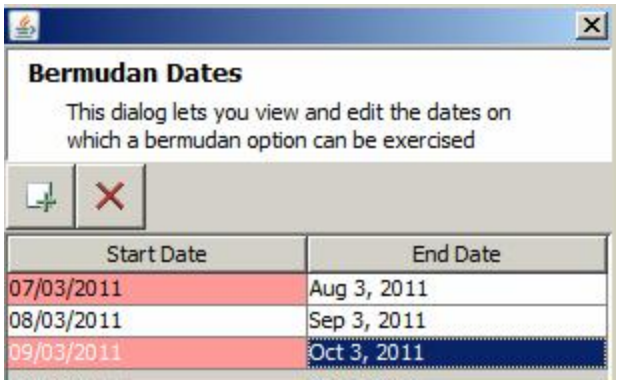
Fields	Description
	For a basket, it displays the number of components in the basket.

Trade Payment Details

Fields	Description
Payment Type	Select whether the payment occurs in cash or physical delivery. **[NOTE: Physical settlement on ESO with Basket or Equity Index underlying is not supported. Physical settlement on Performance based ESO with any type of underlying is not supported]**
Settlement Currency	Displays the currency of the underlying equity, equity index or basket.
Date Lag	Specify the trade date lag for calculating the delivery date. The default value is 2 business days following the expiration date. To modify this value, click ... to define the date lag adjustment.
Date	Displays the payment date for a European style option. You can modify as needed.
Auto Exercise	You can check the “Auto Exercise” checkbox if you want the option to be to automatically exercised when the AUTOMATIC_EXERCISE scheduled task is run and the option is in-the-money.

Vanilla Details

Fields	Description
Type	Select the option type: PUT or CALL.
Strike / Strike (%)	Enter the strike price of the option in units. You can also enter a percentage of spot.
Exercise Style	Select the exercise style. • European options are exercisable at maturity only. • American options are exercisable between the first exercise date and the maturity date. You can enter the first exercise date in the First Ex Date field. It defaults to the effective date of the trade. • Bermudan options are exercised according to a user defined schedule. You can enter the exercise dates in the Bermudan Dates field. It brings up the Bermudan Dates dialog.

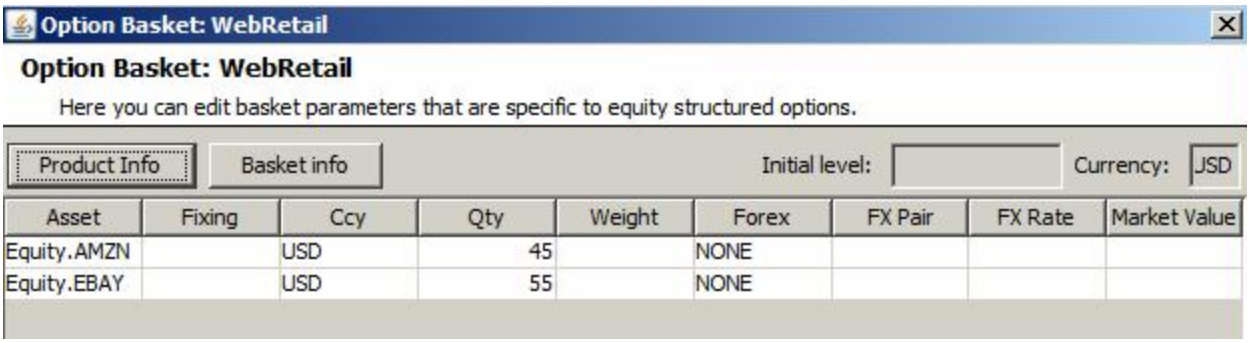
Fields	Description
	 Click to add a date row then edit the start and end dates as needed. Repeat for each exercise date.
Fixing Based	For a forward starting option. Check to specify the forward setting date of the spot price in the Fixing Date field. ***Forward Starting Option*** A Forward Starting Option begins in the future and expires on a date further in the future. The buyer receives a put or call option. Because the initial fixing price of the underlying is unknown at trade creation, the strike price is set in %. That strike price can set the option at the money initially, or some percentage in the money or out of the money. The absolute strike price becomes known when the option is activated (at Fixing Date).

23.1.2 Basket Components

When you select a basket as the underlying instrument, you can click **Product Info** to view the basket components.

[NOTE: It is not possible to use a weighted basket as an underlying of a quantity based trade]

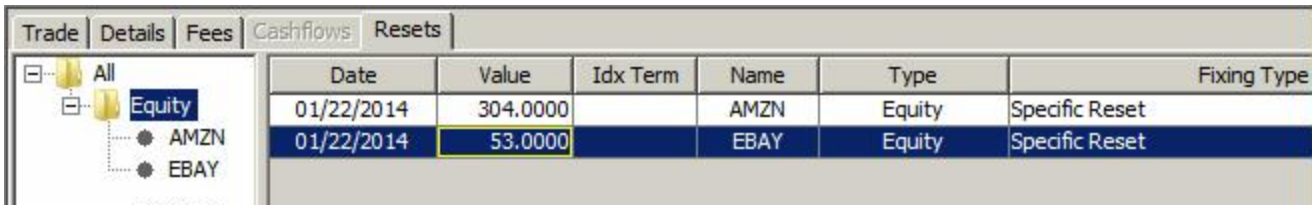
[NOTE: Only baskets of equity and equity index are supported]



Basket Components Details

» You can click **Basket info** to bring up the Basket Definition window - Help is available from that window.

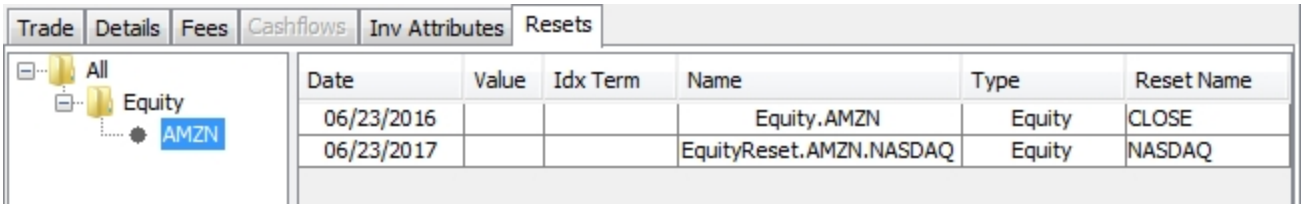
» You cannot set the fixing price for each component in this window. Please use the Resets tab instead.



The fixing price is loaded from the market data if available. Otherwise, you can select the fixing type "Specific Reset" and set the fixing price in the Value field.

23.2 Resets Details

You can select the Resets panel to display Resets details for the various legs.



You can select an equity reset from the Reset Name field. The fixing quote should be set for the quote name in the form "EquityReset.<equity name>.<reset name>". If you do not select an equity reset, CLOSE is selected by default. The fixing quote is the spot quote in that case.

You can also select "Specific Reset" and enter a manual fixing quote in the Value field.

Equity resets are defined in the Equity Definition or Equity Index Definition.

It is recommended to use Equity Reset which would provide the correct Reset risk.

23.3 Option Exercise / Expiration

We recommend the following process for exercising / expiring options.

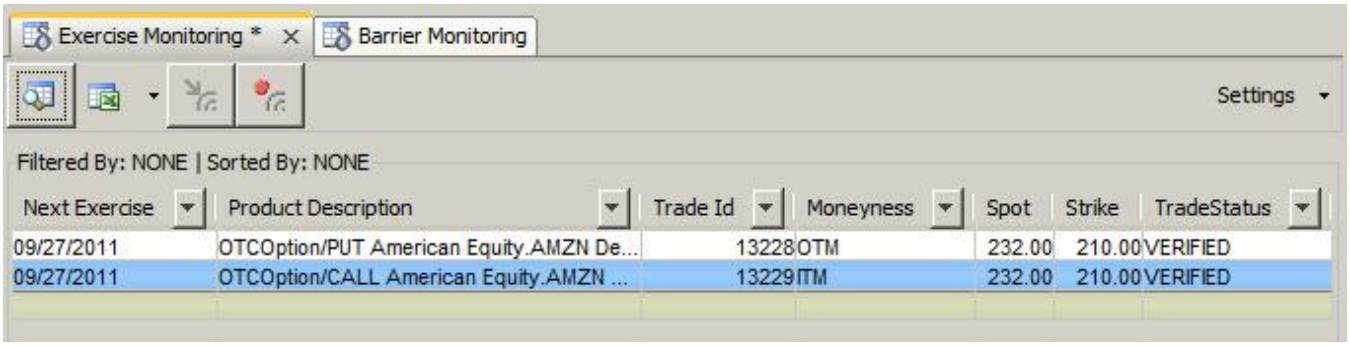
[NOTE: For Barrier options, you first need to process the barriers, as described in the Barrier Options documentation, prior to exercising / expiring the options]

▶ See Barriers Processing for details.

Monitoring Exercise and Expiration

In order to monitor options for exercise and expiration, you need to run the Option Lifecycle analysis with the configuration "EQD.Exercise".

▶ *You can also refer to Calypso Option Lifecycle documentation for setup details.*



Sample Option Lifecycle analysis - Exercise Monitoring

In this example, the second option is in-the-money and can be exercised.

Processing Exercise and Expiration

You can right-click the trades you want to exercise / expire and choose Exercise / Expire as applicable.

If you want more control over the exercise process, you can also bring up the trades in the Option Exercise window and perform the exercise from there - Help is available from that window.

23.4 Messages and Confirmations

23.4.1 Confirmation messages

Calypso provides ISDA confirmation templates as defined in:

http://isda.org/publications/isdaequityderivdefconfir.aspx

The HTML Calypso templates can be configured in the Calypso Back Office system. (Message Configuration).

For Equity Structured Option confirmation messages, some message keywords allow displaying basket information.

▶ Please refer to Calypso Message Templates documentation for details.

23.4.2 Settlement messages

Calypso provides the ability to generate SWIFT messages for rate reset and pricing fixing, payment advices and order of payment with its existing Back Office configuration.

24. Capturing Asian / Lookback Equity Structured Options

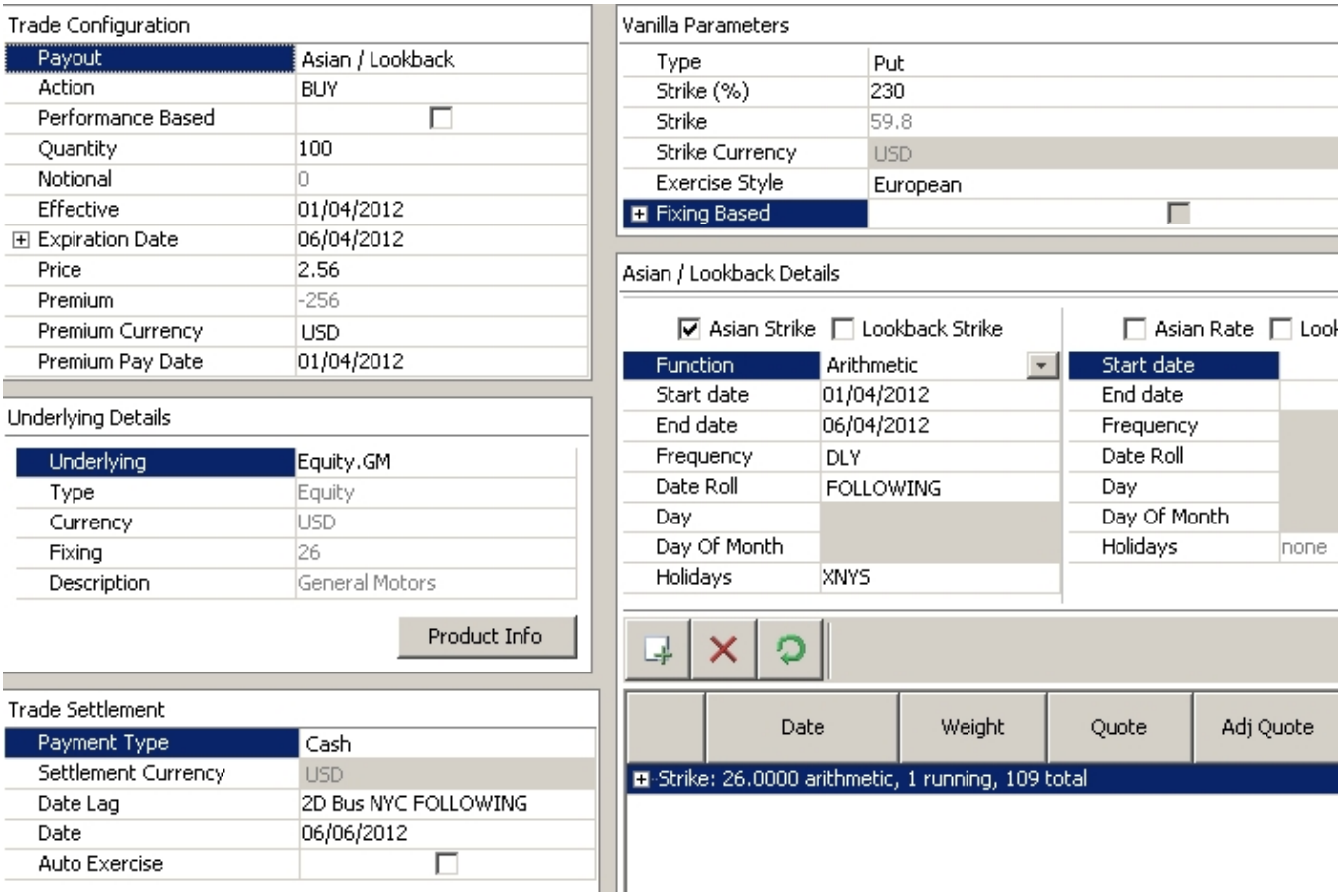
An Asian Strike and Rate option, or Asian In and Out, is one where the Strike and Final reference level of the option is the average of one or more fixing dates.

An Asian Rate option, or Asian Out, is one where the Final reference level of the option is the average of one or more fixing dates.

The Asian/Lookback payout allows the user to create a option trade using Asian and Lookback characteristics.

Choose **Trade > Equity > Equity Structured Option** to open the Equity Structured Option worksheet, from Calypso Navigator or from the Trade Blotter.

» Select the Asian / Lookback payout.



Equity Structured Option Trade Window - Sample Asian Strike trade

▶ See Capturing Equity Structured Options for general details.

Asian / Lookback Details

Asian or average rate options derive the final spot as the arithmetic or geometric average of a series of pre-specified dates.

- Select the type of option: Asian Strike, Lookback Strike, Asian Rate, Lookback Rate.
- Then enter the fields described below as needed.
- The observation schedule is generated. You can modify the weight of each observation date.

  You can click  to add an observation date as needed.

  You can click  to regenerate the observation schedule.

Fields	Description
Function	Select the averaging function for Asian options. • Arithmetic – Arithmetic average options where the average is ∑xn, cannot be valued using a closed form solution. There are approximations (Turnbull and Wakeman 1991), that are fairly accurate, or Monte Carlo simulations can be applied. • Geometric – Geometric average options where the average is ((x1...xn)1/n), have a closed form solution, but are far less common in practice than arithmetic averages.
Start Date	Select the start date of the observation period.
End Date	Select the end date of the observation period.
Frequency	Select the observation frequency.
Date Roll	Select the date roll convention when the observation date is not a business day.
Day	Enter the day of the week for weekly frequencies.
Day of Month	Enter the day of the month for monthly frequencies.
Holidays	Select the holiday calendar to determine business days.

25. Capturing Barrier Equity Structured Options

Barrier (or Knock) options are standard options whose value depends on whether a certain barrier is reached.

Options can be knocked-in or -out.

- "In" Barrier options are paid for today but first come into existence if the underlying price hits the barrier before expiration.
- "Out" Barrier options begin as standard options except that the option is knocked out, or becomes worthless, if the barrier is hit.

It is possible to include a previously specified cash rebate, which is paid out if an "In" option is never knocked in, or an "out" option is knocked out.

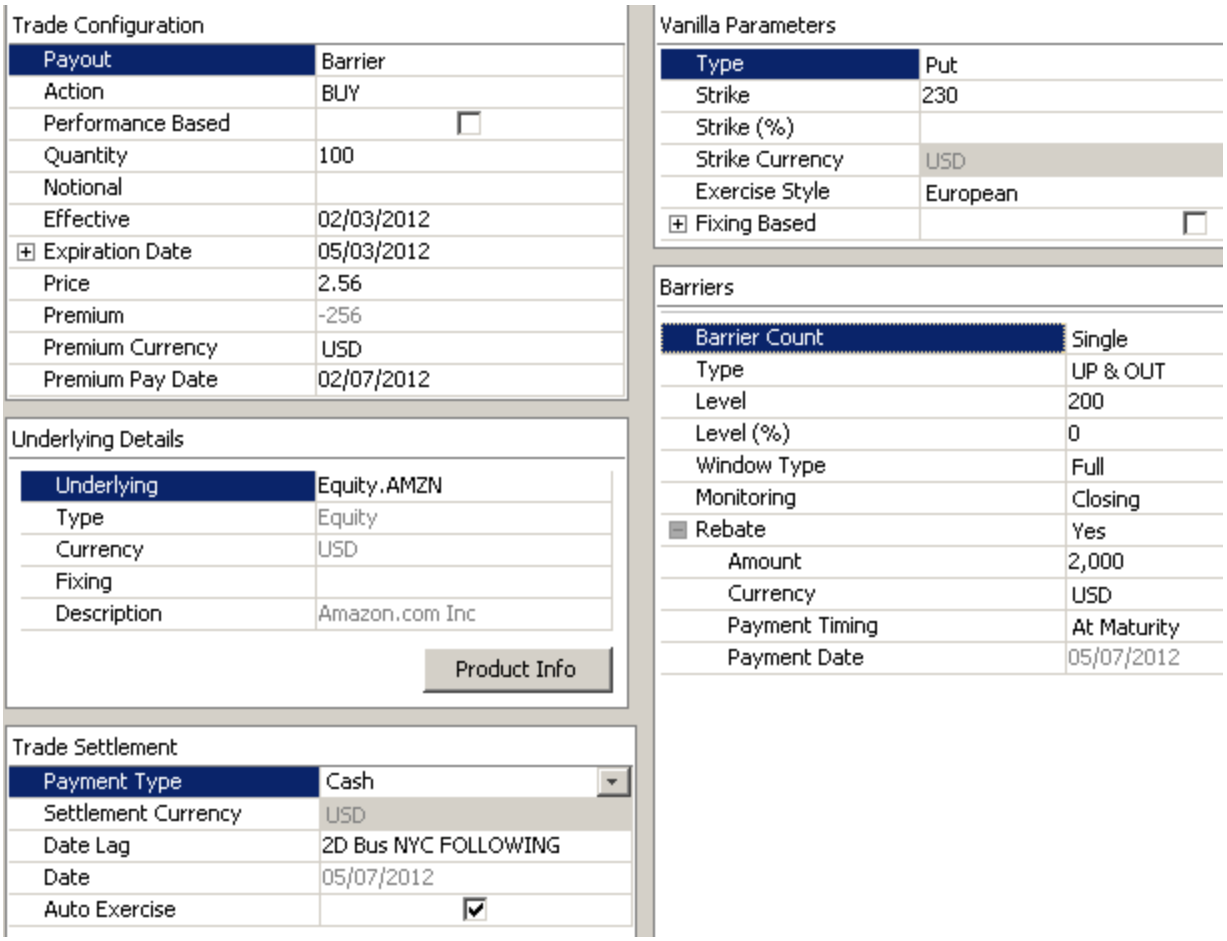
There are standard closed form pricing formulas for knock options whose knock window extends over the life of the knock. If the knock window extends over part of the life of the option, it must be calculated using a lattice or Monte Carlo.

The following example illustrates the entry of an At The Money call option with a Knock Up and Out barrier of 120% of the Strike with a $15 rebate.

25.1 Trade Capture

Choose **Trade > Equity > Equity Structured Option** to open the Equity Structured Option worksheet, from Calypso Navigator or from the Trade Blotter.

» Select the Barrier payout.



Equity Structured Option Trade Window - Sample Single Barrier trade

▶ See Capturing Equity Structured Options for general details.

Barrier Details

» Select the Barrier Count: Single (single barrier upper or lower) or Double (upper and lower barrier).

» Then enter the fields described below as needed.

Single Barrier

Fields	Description
Type	Select the type of barrier: UP & IN, DOWN & IN, UP & OUT, DOWN & OUT. • UP defines an upper barrier and no lower barrier. • DOWN defines a lower barrier and no upper barrier. • IN options are paid for today but first come into existence if the underlying price hits the

Fields	Description
	barrier before expiration. • OUT options begin as standard options except that the option is knocked out, or becomes worthless, if the barrier is hit.
Level / Level (%)	Enter the barrier level in price or percentage. In the case of Forward Starting Barrier option, the barrier can only be entered in percentage.

Double Barrier

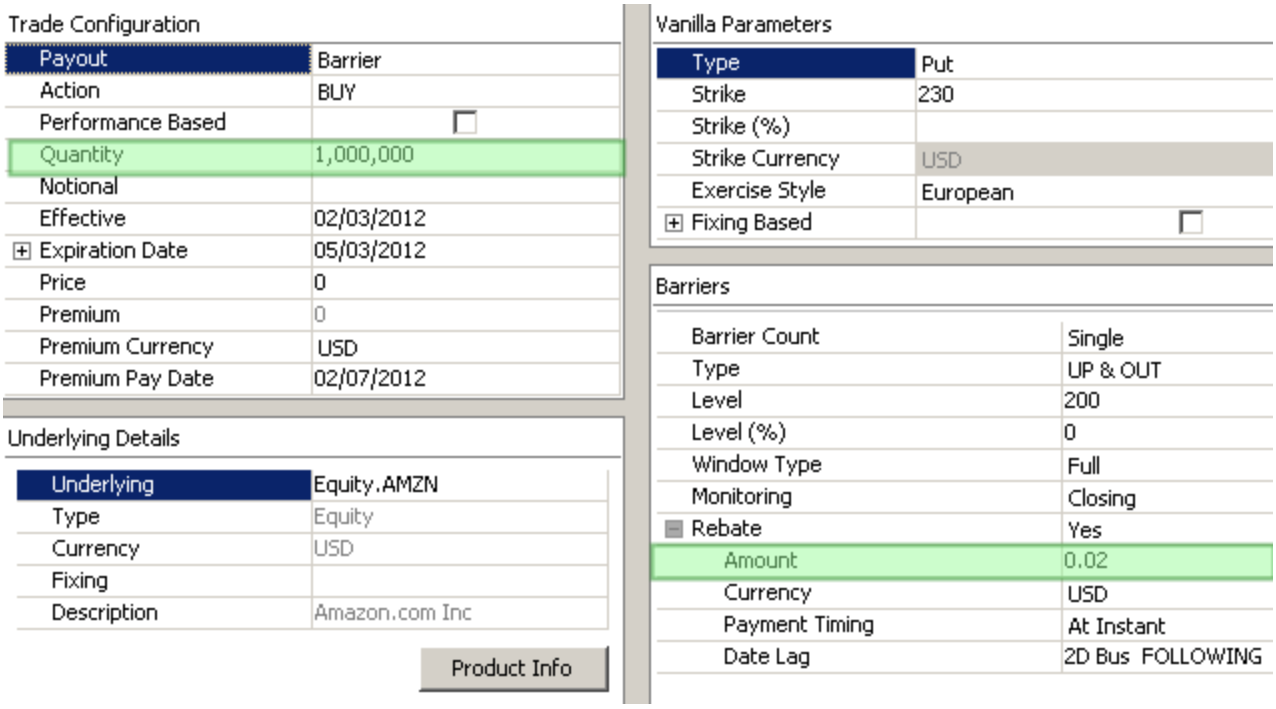
Fields	Description
Up Barrier Type	Select the type of the upper barrier: In or Out.
Upper Level / Upper Level (%)	Enter the upper barrier level in price or percentage.
Down Barrier Type	Select the type of the lower barrier: In or Out.
Lower Level / Lower Level (%)	Enter the lower barrier level in price or percentage.

Additional Fields

Fields	Description
Window Type	Select the type of barrier: • Full - The barrier is monitored over the life of the option. • Partial - The barrier is monitored over a given period. Enter the start and end dates of the period in the Start Date and End Date fields. • Expiry - The barrier is monitored at expiration only.
Monitoring	Select the type of quote you want to use to monitor the barrier: • Closing: At the end of the day, the barrier level is compared to the CLOSE quote. The barrier is hit if UP BARRIER < CLOSE or DOWN BARRIER > CLOSE. • Continuous: At the end of the day, the barrier level is compared to the HIGH and LOW quotes of the day. The barrier is hit if UP BARRIER < HIGH or DOWN BARRIER > LOW.
Rebate	Select Yes if there is a rebate payout, or No otherwise. For quantity based options, the rebate fee is computed from the rebate unit amount and the quantity. The formula is "fee = unit amount * trade quantity". For performance based options, the rebate fee is computed from the rebate percentage and the notional. The formula is "fee = rebate percentage * trade notional / 100". If there is a rebate, you can set the following parameters:

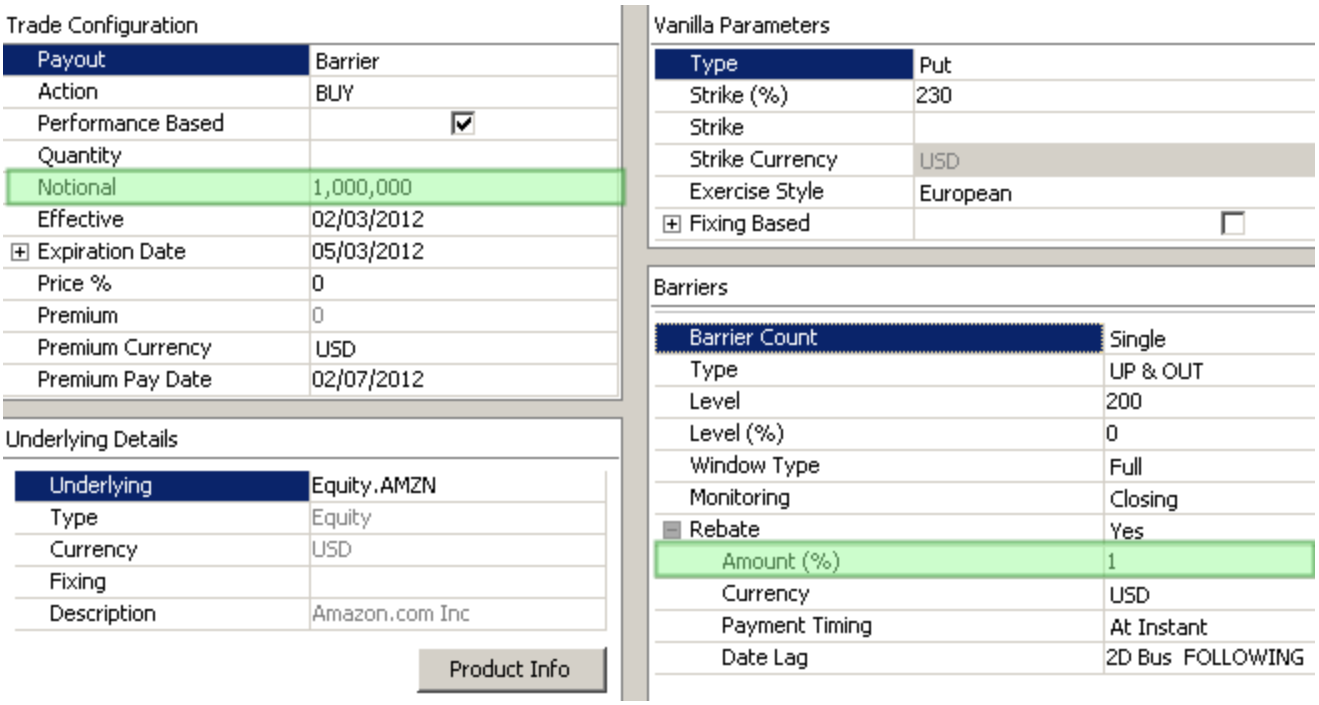
Fields	Description
	• Amount / Amount (%): Rebate amount in units / Rebate percentage. • Currency: Rebate currency. • Payment Timing: Select At Instant (the rebate is paid at the knock-in/knock-out date plus the rebate pay lag), or At Maturity (the rebate is paid at the payment date of the trade). For "At Instant", you can define a payment date lag. For "At Maturity", the payment date is displayed.

Example: Calculating Quantity Based Option Rebate



In the example above, the rebate fee would be 1 million multiplied by 0.02.

Example: Calculating Performance Based Option Rebate



In the example above, the rebate fee would be 1 multiplied by 1 million divided by 100.

25.2 Barriers Processing

The process to knock-in / knock out equity derivatives barriers is a manual process.

We recommend the following process for processing barriers.

Exercise / expiration activity can be performed after processing the barriers, as applicable.

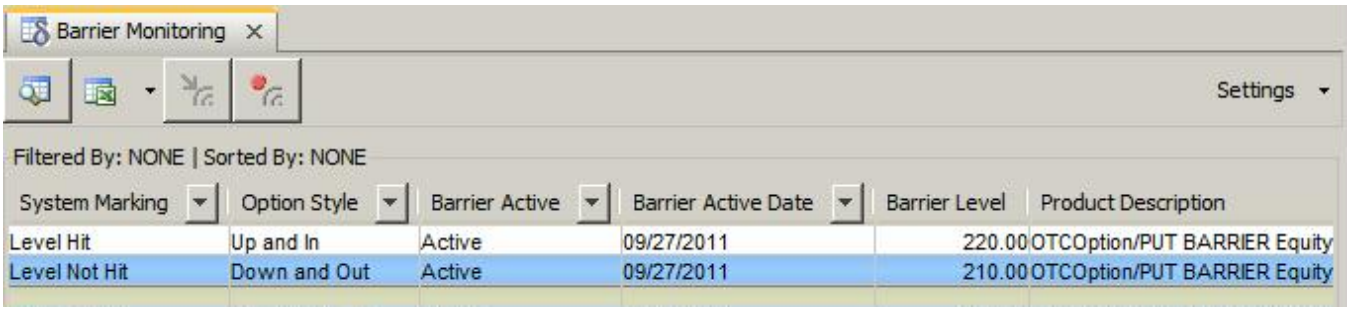
You can knock-in barriers manually of using the KNOCK_IN scheduled task.

25.2.1 Monitoring Barriers

In order to monitor barriers, you need to run the Option Lifecycle analysis with the configuration "EQD.Barrier".

[NOTE: Make sure that the proper monitoring quotes are set based on the Monitoring type of the barrier]

You can also refer to Calypso Option Lifecycle documentation for setup details.

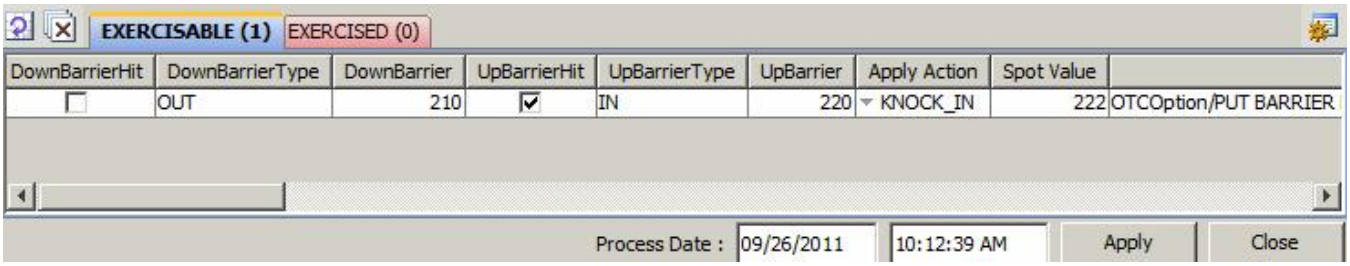


25.2.2 Manual Knock-in

You can load the trades you want to knock in the Trade Blotter, and apply the actions from there (recommended for bulk processing). Or you can apply the actions from the Option Exercise window.

Once the options are loaded in the Option Exercise window, the checkboxes Up Barrier Hit or Down Barrier Hit are checked based on the underlying's monitoring quotes.

Depending on the type of option (In or Out), you can knock-in / knock-out the barrier by applying the corresponding action.



Option Exercise Window - Sample Knock-in

- Select the applicable action.
- For a KI option , **Create Underlying** must be checked as well.
- Then click **Apply**.

Recommended Workflow Setup

Origin Status	Action	Resulting Status	Rule	Comments
KNOCKED_IN	UN-KNOCK_IN	VERIFIED	UnexerciseOption	Trade undo knock in.
KNOCKED_IN	UNEXERCISE	VERIFIED	UnexerciseOption	
KNOCKED_OUT	UN-KNOCK_OUT	VERIFIED	UnexerciseOption	Trade undo knock out.
KNOCKED_OUT	UNEXERCISE	VERIFIED	UnexerciseOption	

Origin Status	Action	Resulting Status	Rule	Comments
VERIFIED	KNOCK_IN	KNOCKED_IN		
VERIFIED	KNOCK_OUT	KNOCKED_OUT		

Processing Results

- The status of the trade on which the action is performed will be changed to the status associated with the action in the workflow.
- A fee corresponding to the rebate is generated:
  - When a KO barrier is hit.
  - When a KI trade is expired without having been knocked-in.
- For KI options, a trade is generated that has the same characteristics as the parent trade, expect it has no KI barrier, and the effective date of the trade equal to the event process date. All other trade attributes on the generated trades are the same as those on the parent trade:
  - Notional / Quantity
  - Underlying
  - Maturity
  - Strike
  - etc.
- In addition, trade Termination keywords are populated on both the parent and child trades.
  - On the parent trade:

TerminationDate	Event Process Date
TerminationPayIntFlow	true
TerminationTradeDate	Event Process Date and Time
TerminationType	UpBarrierOUT / DownBarrierOUT / UpBarrierIN / DownBarrierIn

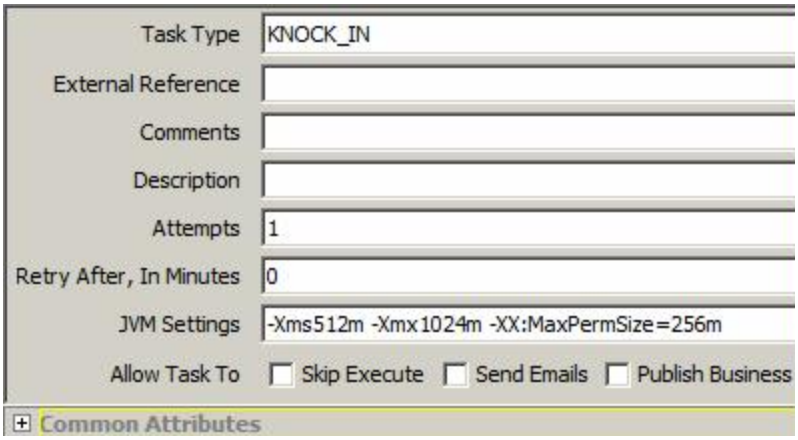
  - On the child trade:

ExercisedOption	Parent Trade_ID
TransferDate	Parent Trade Maturity Date
TransferFrom	Parent Trade_ID
TransferTradeDate	Parent Trade Maturity Date and Time

25.2.3 KNOCK_IN Scheduled Task

You can also knock-in barriers using the KNOCK_IN scheduled task.

Choose **Calypso Navigator > Configuration > Scheduled Tasks** and select the KNOCK_IN task type.



This scheduled task does not have any specific attributes. Select a trade filter as applicable, and schedule the task for execution.

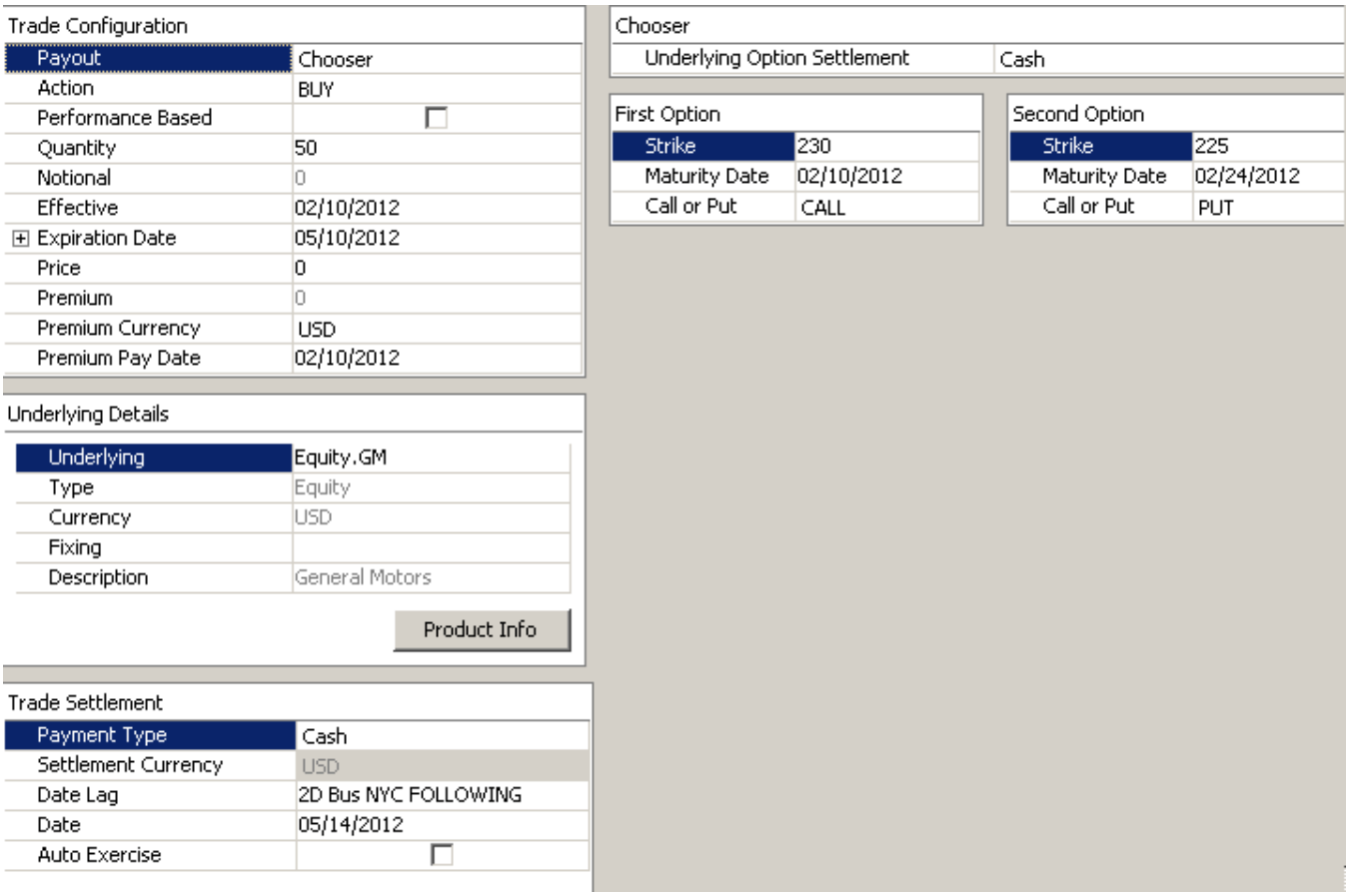
If the trade has hit the KI level, the trade status changes from VERIFIED to KNOCKED_IN after the scheduled task has run.

26. Capturing Chooser Equity Structured Options

The Chooser Payoff allows the holder to choose whether to enter into one of two possible options on the Expiration Date. Each of the possible options has its own Strike, Put/Call and Maturity Date. All options are European. Typically, one option is a Call and one is a Put.

Choose **Trade > Equity > Equity Structured Option** to open the Equity Structured Option worksheet, from Calypso Navigator or from the Trade Blotter.

» Select the Chooser payout.



Equity Structured Option Trade Window - Sample Chooser trade

▶ See Capturing Equity Structured Options for general details.

Chooser Details

» Enter the fields described below as needed.

Chooser

Fields	Description
Underlying Option Settlement	Select Cash or Physical.

First Option / Second Option

Fields	Description
Strike	Enter the strike price of the option.
Maturity Date	The option's Maturity Date.
Call or Put	Select Call or Put.

27. Capturing Cliquet Equity Structured Options

A Cliquet is a multi-period option with a single payoff at maturity. Each period has a return that can be floored and/or capped. The sum of the period returns can be globally capped and floored.

The Payoff is defined as:

Let S_i equal the price of an asset and $0 = T_0 < T_1 < T_2 \ldots < T_N$ by N+1 * points:

Payoff =

$$NAx\left[\max\left(F_{global}, \min\left(C_{global}, C_{initial} + \sum_{i=1}^{N} \max\left(F_{local}, \min\left(C_{local}, Perf_i\right)\right)\right)\right)\right]$$

Where:

$$Perf_i = Partxoax(R_i - K)$$

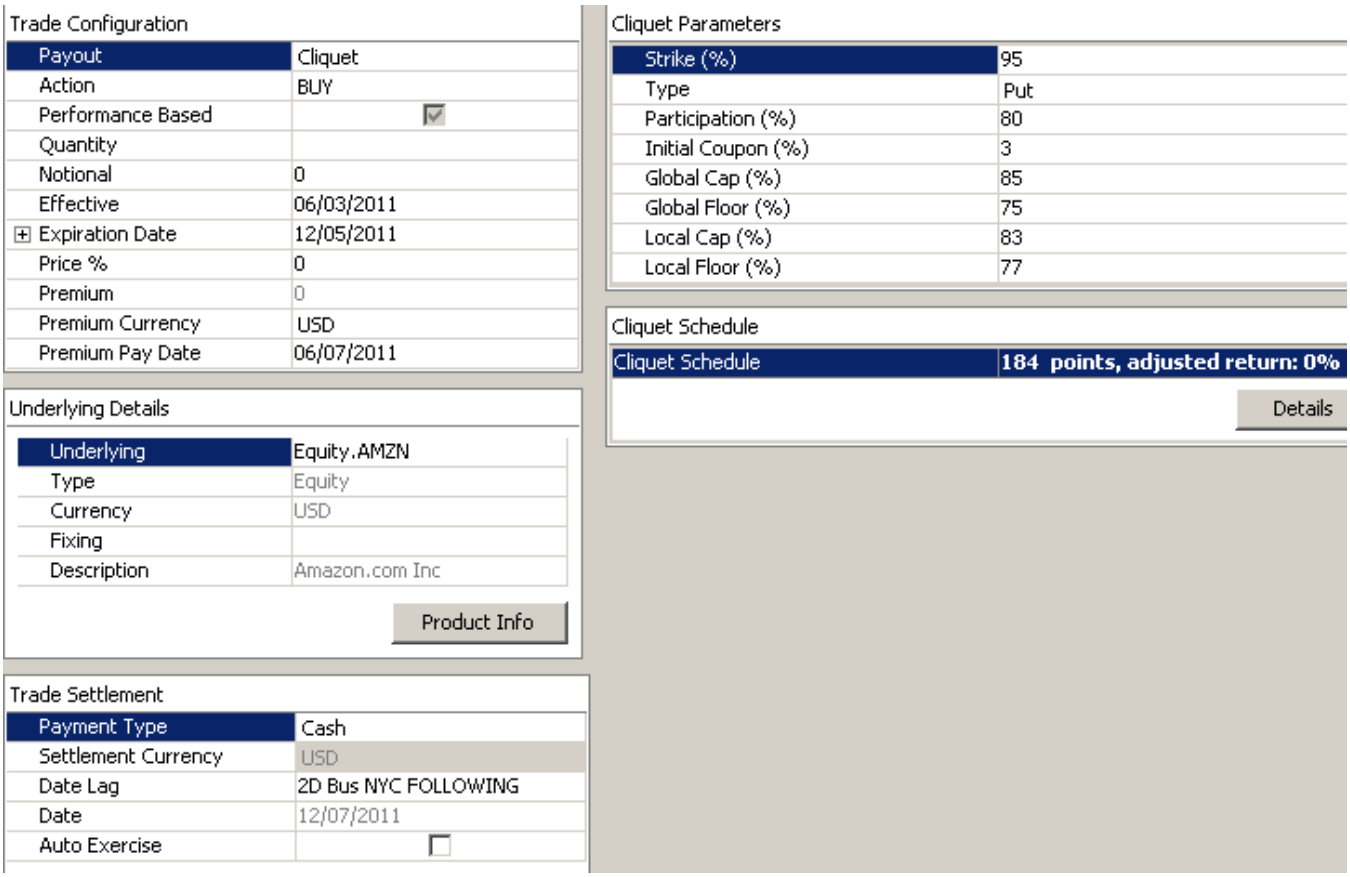
$$Ri = \begin{cases} \frac{S_i - S_{i-1}}{S_{i-1}} relative\ return \\ S_i - S_{i-1} absolute\ return \end{cases}$$

Input	Definition	Description
Notional Amount	NA	The Notional Amount of the trade. A Cliquet is in Notional.
Start Date	T_0	The Start Date of the Reset Schedule.
Maturity	T_N	The Final Reset Date. This is Typically the Expiration Date of the Option.
Cliquet Reset Dates	T_0 , T_1 , T_2 , ..., T_N where $T_0 < T_1 < T_2 \ldots < T_N$	The Schedule of Reset/Fixing dates.
Initial/Central Coupon	$C_{initial}$	The Initial Coupon. It is used as a base coupon that period returns are added to.
Global Cap	C_{global}	The maximum return for the payoff.
Global Floor	F_{global}	The minimum return for the payoff.
Local Cap	C_{local}	The maximum return for any given reset period.
Local Floor	F_{local}	The minimum return for any given reset

Input	Definition	Description
		period.
Participation	Part, an amount in percent. Ex. 80%	The percentage of the return to return to the user.
Strike	K, represented in return(%) or absolute amount. If return, an example strike would be 10%, for a 110% call.	
Direction	1 for a call option, -1 for a put option	

Choose **Trade > Equity > Equity Structured Option** to open the Equity Structured Option worksheet, from Calypso Navigator or from the Trade Blotter.

» Select the Cliquet payout.



Equity Structured Option Trade Window - Sample Cliquet trade

▶ See Capturing Equity Structured Options for general details.

Cliquet Details

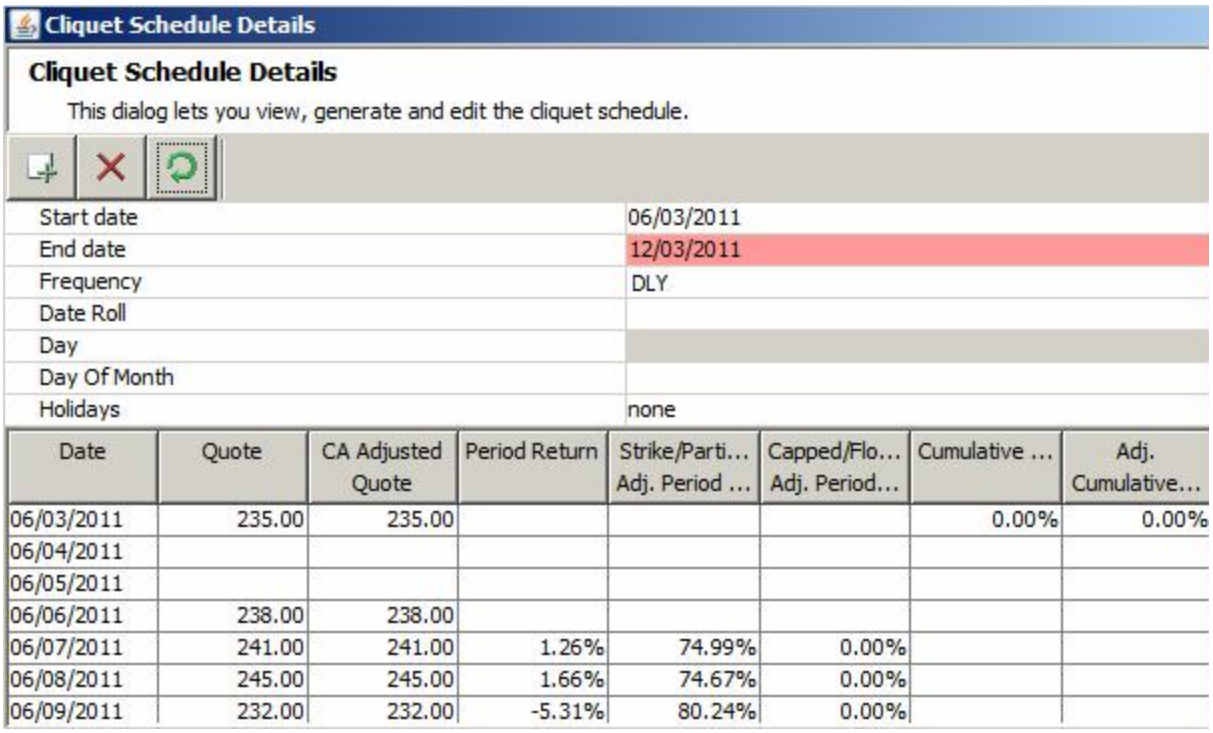
» Enter the fields described below as needed.

Cliquet Parameters

Fields	Description
Strike %	Enter the strike price in percentage of spot.
Type	Select Put or Call.
Participation (%)	Enter the percentage of participation.
Initial Coupon (%)	Enter the initial coupon in percentage.
Global Cap (%)	Enter the maximum return for the payoff in percentage.
Global Floor (%)	Enter the minimum return for the payoff in percentage.
Local Cap (%)	Enter the maximum return for any given reset period in percentage.
Local Floor (%)	Enter the minimum return for any given reset period in percentage.

Cliquet Schedule

Fields	Description
Cliquet Schedule	Displays a description of the schedule. Click **Details** to view the actual schedule. The Cliquet schedule is shown below.



Cliquet Schedule Details

Cliquet Schedule Details

This dialog lets you view, generate and edit the cliquet schedule.

Start date	06/03/2011
End date	12/03/2011
Frequency	DLY
Date Roll	
Day	
Day Of Month	
Holidays	none

Date	Quote	CA Adjusted Quote	Period Return	Strike/Parti... Adj. Period ...	Capped/Flo... Adj. Period...	Cumulative ...	Adj. Cumulative...
06/03/2011	235.00	235.00				0.00%	0.00%
06/04/2011							
06/05/2011							
06/06/2011	238.00	238.00					
06/07/2011	241.00	241.00	1.26%	74.99%	0.00%		
06/08/2011	245.00	245.00	1.66%	74.67%	0.00%		
06/09/2011	232.00	232.00	-5.31%	80.24%	0.00%		

- You can click to add a period as needed.
- You can click to regenerate the schedule.

28. Capturing Cliquet Multiplicative Equity Structured Options

A Cliquet Multiplicative is a multi-period option with a single payoff at maturity. Each period has a return that can be floored and/or capped along with buffer to offset negative return of period.

The Payoff is defined as:

Let S_i equal the price of an asset and $0 = T_0 < T_1 < T_2 \ldots < T_N$ by N+1 * points:

Payoff =

$$NAx\left[\left(\left((1 + C_{initial}) * \prod_{i=1}^{N}[\{\max(F_{local}, min(C_{local}, Perf_i)) - \max(0, -\text{Blocal} - Perf_i)\} + 1]\right)\right) - 1\right]$$

Where:

$$Perf_i = Partxax(R_i - K)$$

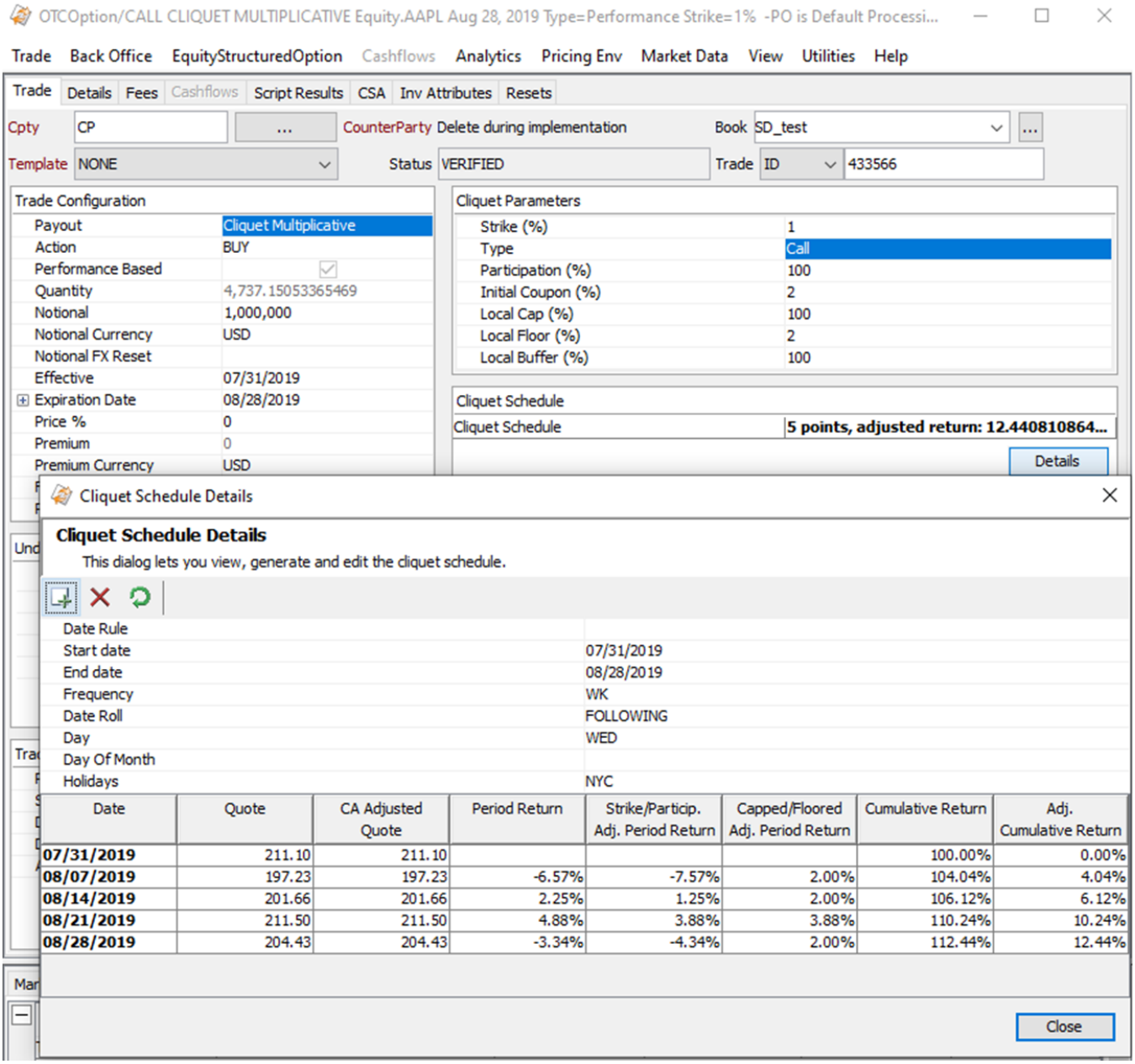
$$Ri = \begin{cases} \frac{S_i - S_{i-1}}{S_{i-1}} relative\ return \\ S_i - S_{i-1} absolute\ return \end{cases}$$

Input	Definition	Description
Notional Amount	NA	The Notional Amount of the trade. A Cliquet is in Notional.
Start Date	T_0	The Start Date of the Reset Schedule.
Maturity	T_N	The Final Reset Date. This is Typically the Expiration Date of the Option.
Cliquet Reset Dates	T_0 , T_1 , T_2 , ..., T_N where $T_0 < T_1 < T_2 \ldots < T_N$	The Schedule of Reset/Fixing dates.
Initial/Central Coupon	$C_{initial}$	The Initial Coupon. It is used as a base coupon that period returns are added to.
Local Buffer	B_{local}	Buffer to offset negative return of period.
Local Cap	C_{local}	The maximum return for any given reset period.
Local Floor	F_{local}	The minimum return for any given reset period.

Input	Definition	Description
Participation	Part, an amount in percent. Ex. 80%	The percentage of the return to return to the user.
Strike	K, represented in return(%) or absolute amount. If return, an example strike would be 10%, for a 110% call.	
Direction	1 for a call option, -1 for a put option	

Choose **Trade > Equity > Equity Structured Option** to open the Equity Structured Option worksheet, from Calypso Navigator or from the Trade Blotter.

» Select the Cliquet Multiplicative payout.



Equity Structured Option Trade Window - Sample Cliquet trade

▶ See Capturing Equity Structured Options for general details.

Cliquet Details

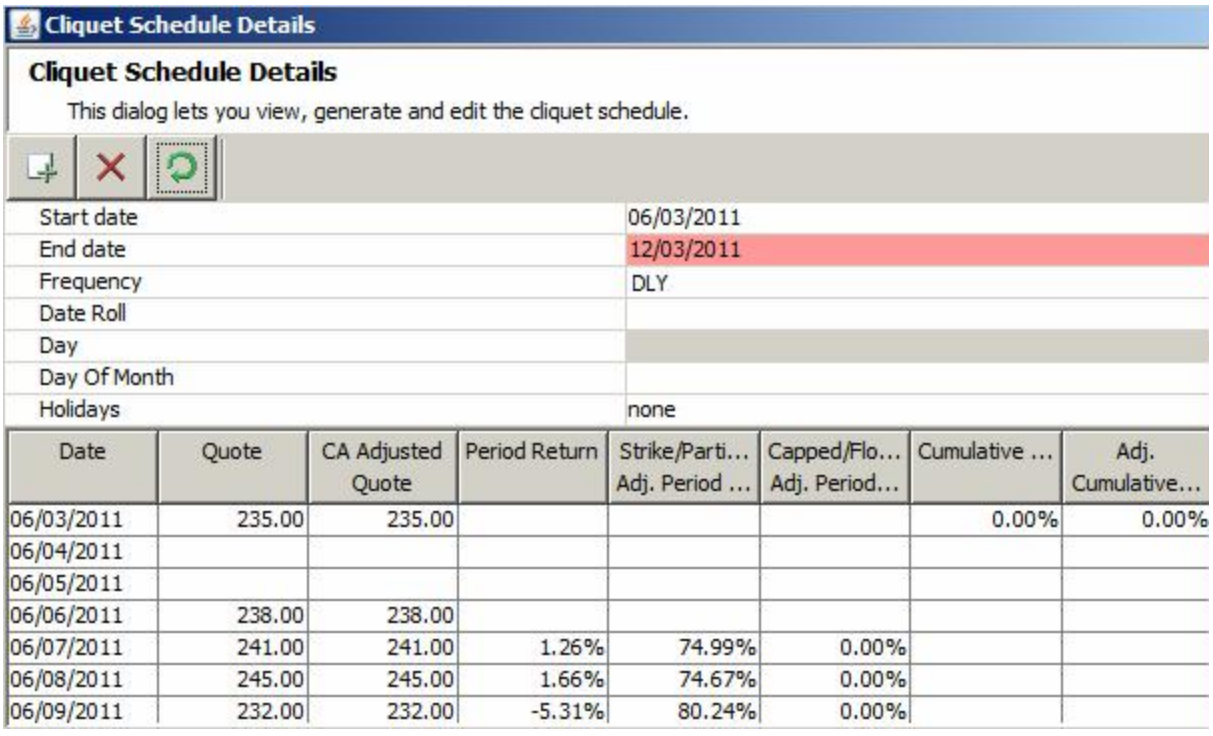
» Enter the fields described below as needed.

Cliquet Parameters

Fields	Description
Strike %	Enter the strike price in percentage of spot.
Type	Select Put or Call.
Participation (%)	Enter the percentage of participation.
Initial Coupon (%)	Enter the initial coupon in percentage.
Local Buffer (%)	Enter the maximum final return in percentage.
Local Cap (%)	Enter the maximum return for any given reset period in percentage.
Local Floor (%)	Enter the minimum return for any given reset period in percentage.

Cliquet Schedule

Fields	Description
Cliquet Schedule	Displays a description of the schedule. Click **Details** to view the actual schedule. The Cliquet schedule is shown below.



» You can click to add a period as needed.

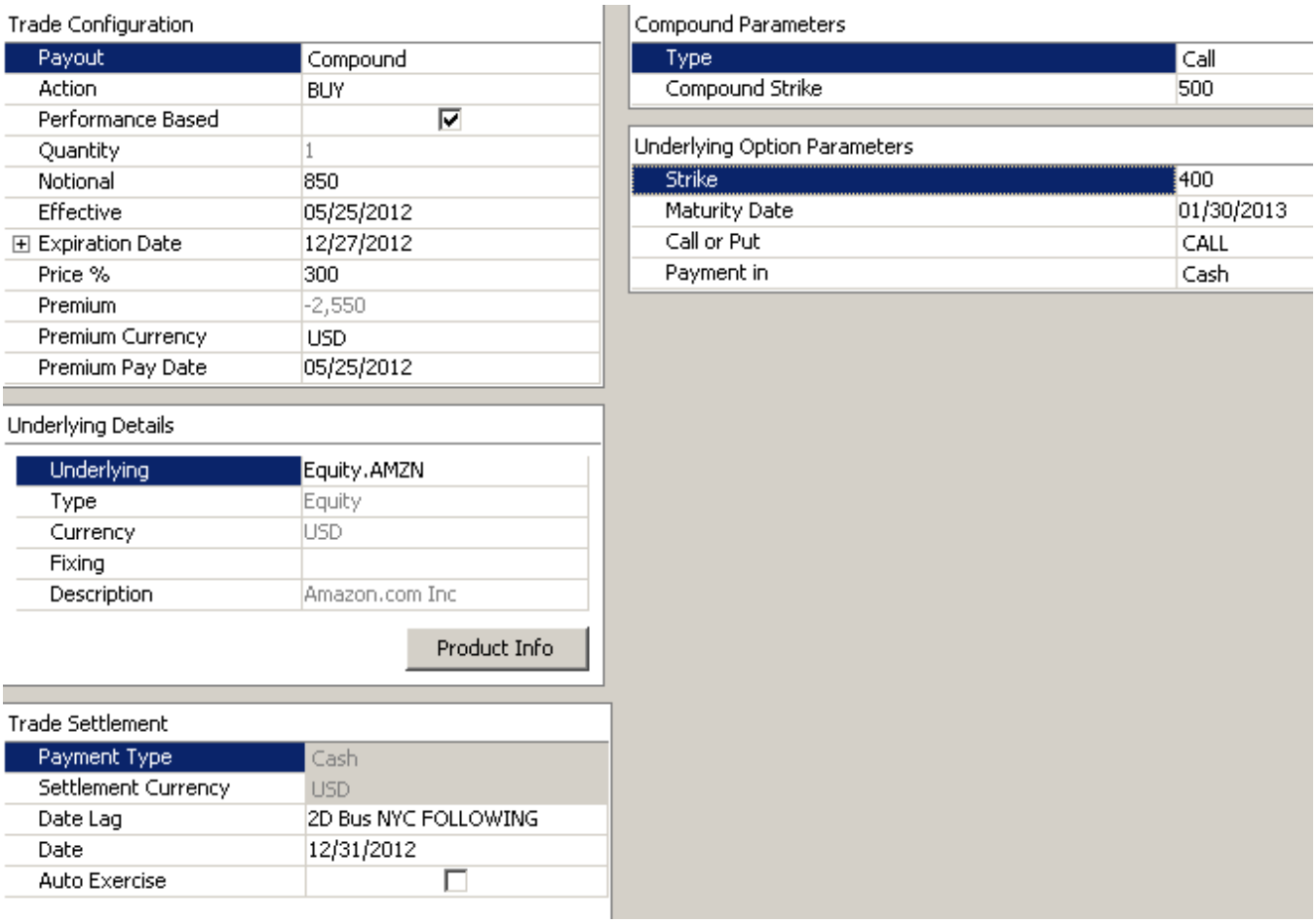
» You can click  to regenerate the schedule.

29. Capturing Compound Equity Structured Options

The Compound option payoff is an option to enter into an option. A Put option on a Call option gives the holder the right to sell the Call on the Expiration date.

Choose **Trade > Equity > Equity Structured Option** to open the Equity Structured Option worksheet, from Calypso Navigator or from the Trade Blotter.

» Select the Compound payout.



Equity Structured Option Trade Window - Sample Compound trade

▶ See Capturing Equity Structured Options for general details.

Compound Details

» Enter the fields described below as needed.

Compound Parameters

Fields	Description
Type	Select Put or Call.
Compound Strike	Enter the strike of the compound option.

Underlying Option Parameters

Fields	Description
Strike	Enter the strike of the underlying option.
Maturity Date	Enter the maturity date of the underlying option.
Call or Put	Select Call or Put.
Payment In	Select the payment type: Cash or Physical.

30. Capturing Digital Equity Structured Options

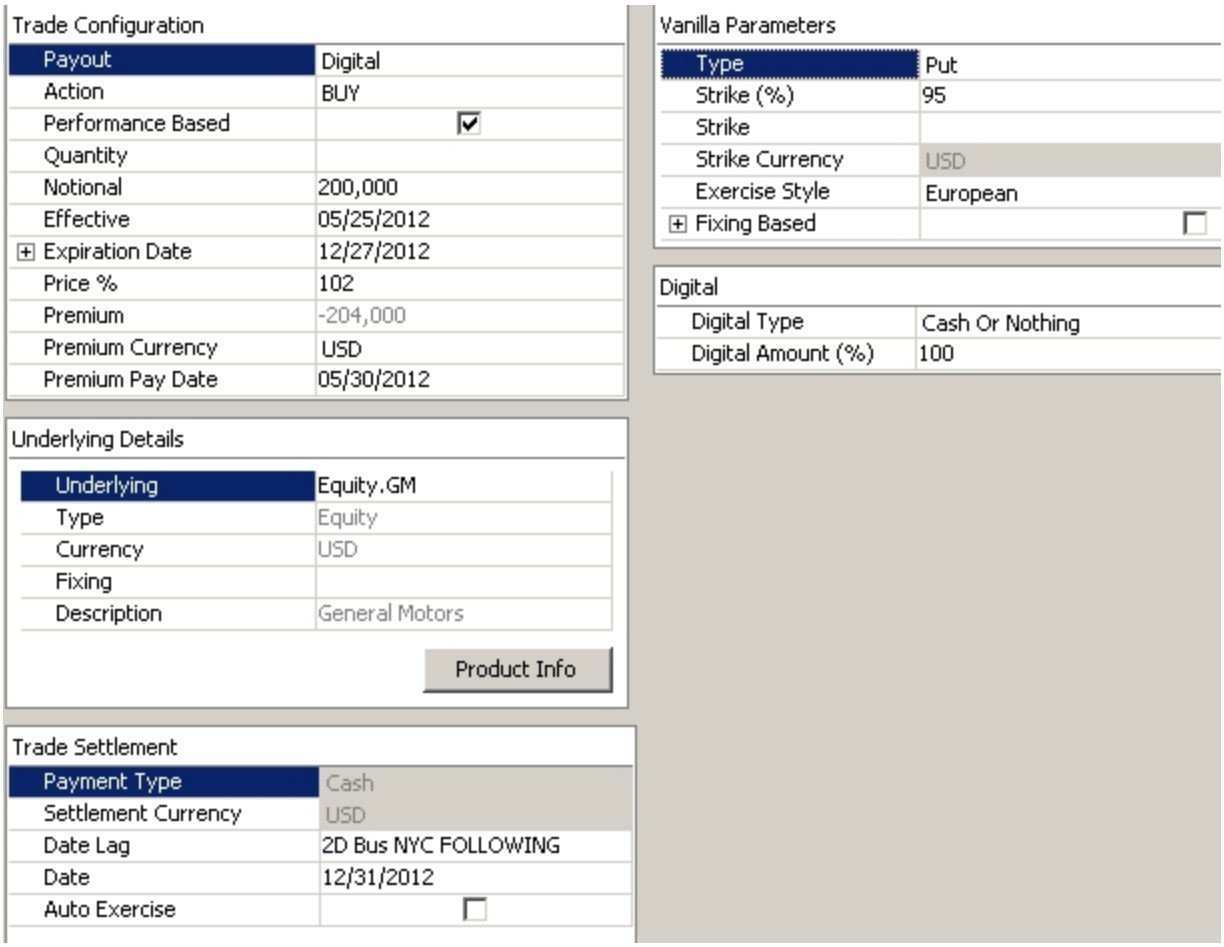
The two types of Digital options are the cash-or-nothing and the asset-or-nothing. Payout for a Digital is pre-determined at the beginning of the contract. The cash-or-nothing option pays a fixed amount of cash if the option expires in-the-money, while an asset-or-nothing pays the value of the underlying security.

Digitals can be Cash or Physical. The processing for Digitals is a manual process where the user will Exercise or Expire them. If Physical, then a Stock Trade is created. If Cash, then a Fee is created.

[NOTE: Physical settlement is only supported on asset-or-nothing quantity based options with a single equity underlying - not an equity index or basket]

Choose **Trade > Equity > Equity Structured Option** to open the Equity Structured Option worksheet, from Calypso Navigator or from the Trade Blotter.

» Select the Digital payout.



Equity Structured Option Trade Window - Sample Digital trade

▶ See Capturing Equity Structured Options for general details.

Digital Details

» Enter the fields described below as needed.

Fields	Description
Digital Type	Select the type of digital: • Cash Or Nothing – for a fixed amount of cash. • Asset Or Nothing – for the value of the underlying security. If Asset Or Nothing is selected, the payment type Physical will become enabled in the Trade Settlement details. – Cash-settled asset-or-nothing options pay the underlying value at option maturity * quantity if the option is in the money. – Physically-settled asset-or-nothing options deliver the trade quantity in underlying shares.
Digital Amount / Digital Amount (%)	Enter the payout quantity / percentage.

31. Capturing Forex Equity Structured Options

The purpose of Forex, or multi-currency, options is to allow trading on an underlying that is quoted in an underlying currency into a different settlement currency. Note that this also applies to baskets (the basket components can be quoted in a currency different from the basket currency). In the case of baskets, the settlement currency of the options is the basket currency. For Forex Quanto options, the FX rate applied in the payoff formula is fixed when entering the trade, i.e., FX_0. Where FX_0 is the fixed exchange rate between local and foreign currency, determined at trade entry. The strike is defined in the asset currency.

This applies to vanilla options, as well as to more exotic options, and for a given "payoff" we have the following payoff definitions for the equivalent quanto payoff, at maturity:

Forex payoff = (FX_0 * payoff)

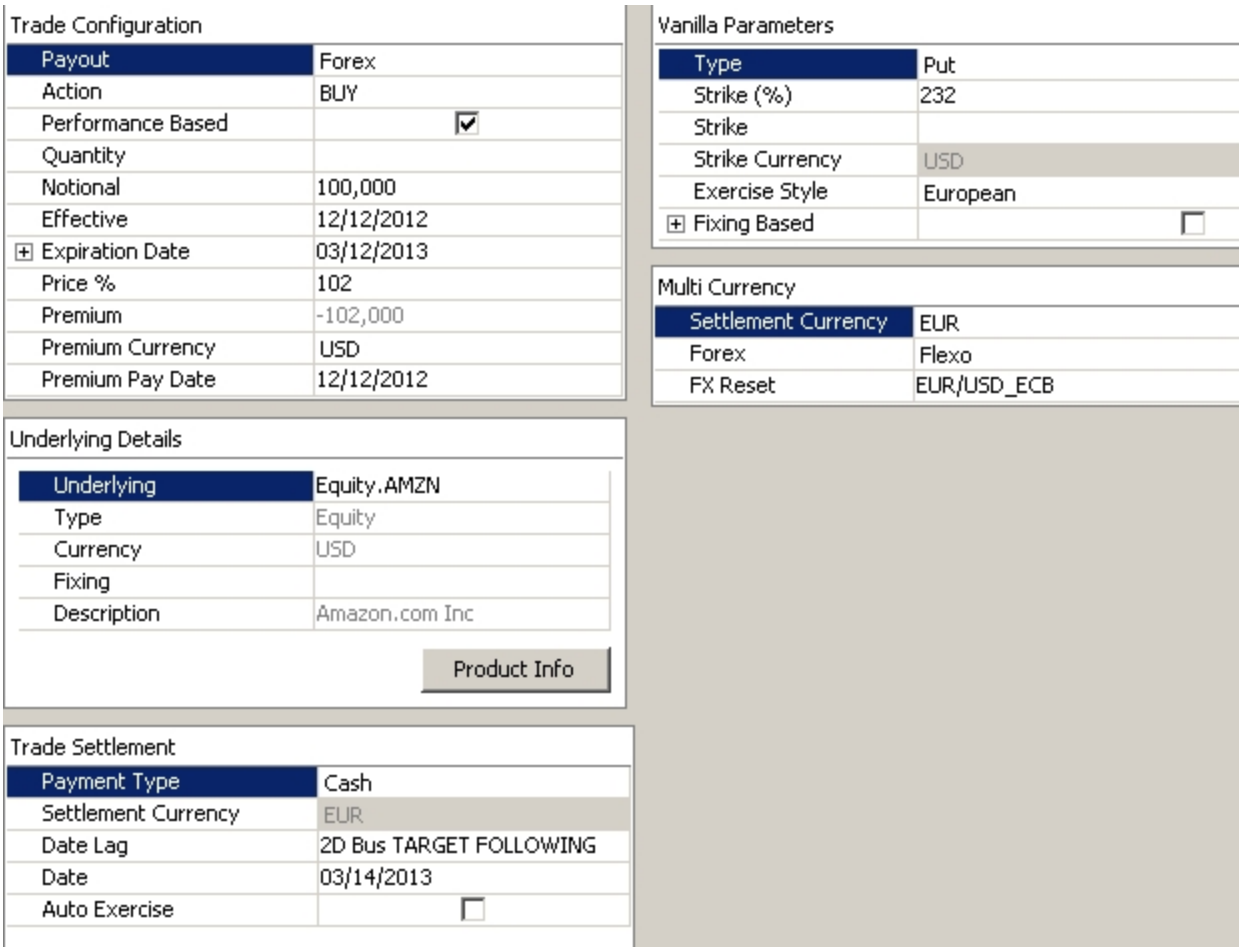
The user can choose either a Quanto, a Flexo, or a Compo FX treatment for trades whose Payoff Currency is not equal to the Underlying Currency:

- A Quanto trade uses a Fixed FX rate. This is defaulted to 1, but it can be set by the user. The Strike is denominated in the underlying currency.
- A Flexo trade will convert the Payout from the Asset currency to the Settlement currency using the Prevailing FX Reset on the Expiration date. The Strike is denominated in the underlying currency.
- A Compo trade will convert the Payout from the Asset currency to the Settlement currency using the Prevailing FX Reset on each fixing date. The Strike is denominated in the settlement currency:

Forex is available as a standalone Option or as part of a Structured Vanilla option.

Choose **Trade > Equity > Equity Structured Option** to open the Equity Structured Option worksheet from Calypso Navigator or from the Trade Blotter.

» Select the Forex payout.



Equity Structured Option Trade Window - Sample Forex trade

▶ See Capturing Equity Structured Options for general details.

Multi Currency Details

» Enter the fields described below as needed.

Fields	Description
Settlement Currency	Select the settlement currency.
Forex	Select the type of FX rate you want to use if the settlement currency is different from the underlying currency: • Flexo - The FX rate is retrieved from an FX Rate Definition - Select the FX Rate Definition from the FX Reset field. • Quanto - The FX rate is fixed - Enter the FX rate in the Fixed Rate field.

Fields	Description
	• Compo - The FX rate is retrieved from an FX Rate Definition - Select the FX Rate Definition from the FX Reset field. For Baskets, it is the type of FX rate set at the component level. FX Rate Definitions are created using **Calypso Navigator > Configuration > Foreign Exchange > FX Rate Definitions**.
Fixed Rate	Enter the fixed rate for a Quanto Forex, or select an FX Rate Definition for a Flexo Forex.

The FX rate applied to the payoff formula is determined by payout type and flavors chosen:

- Flexo: where the foreign exchange rate applied in the payoff formula is floating, i.e., $FX_{underlying/settlement}$ (T)
- Quanto: where the FX rate applied in the payoff formula is fixed when entering the trade, i.e., FX_0
- Compo: where the foreign exchange rate applied in the payoff formula is floating, i.e., FXunderlying/settlement (T)

Quantity Based Trades

Non Forward Starting

Flexo payoff = $FX_{underlying/settlement}(T) * Q * \max(\alpha(*S(T) - K); 0)$

Quanto payoff = $FX_0 * Q * \max(\alpha * (S(T) - K); 0)$

Composite payoff = $\boldsymbol{Q * \max(\alpha * (S(T) * FX_{underlying/settlement}(T) - K); 0)}$

Forward Starting

Flexo payoff= $FX_{underlying/settlement}(T) * Q * \max(\alpha * (S(T) - K); 0)$

Quanto payoff = $FX_0 * Q * \max(\alpha * (S(T) - K); 0)$

with $K = K_{\%} S(t_1)$

Composite payoff = $\boldsymbol{Q * \max(\alpha * (S(T) * FX_{underlying/settlement}(T) - K); 0)}$

with $\boldsymbol{K = K_{\%} S(t_1) * FX_{underlying/settlement}(t_1)}$

Performance Based Trades

Non Forward Starting

Flexo payoff= $FX_{underlying/settlement}(T) * Q * \max(\alpha * (S(T) - K); 0)$

Quanto payoff = FX_0 * $Q*\max(\alpha*(S(T)-K);0)$

With $K = K_{\%}S(t_0)$ and $Q = \frac{N}{S(t_0)}$

Composite payoff = $\boldsymbol{Q*\max(\alpha*(S(T)*FX_{underlying/settlement}(T)-K);0)}$

$\boldsymbol{K = K_{\%}S(t_0)*FX_{underlying/settlement}(t_0)}$ and $\boldsymbol{Q = \frac{N}{S(t_0)*FX_{underlying/settlement}(t_0)}}$

Forward Starting

Flexo payoff= $FX_{underlying/settlement}(T)$ * $Q*\alpha*\max(0,S(T)-K)$

Quanto payoff = FX_0 * $Q*\max(\alpha*S(T)-K;0)$

With $K = K_{\%}S(t_1)$ and $Q = \frac{N}{S(t_1)}$

Composite payoff = $\boldsymbol{Q*\max(\alpha*(S(T)*FX_{underlying/settlement}(T)-K);0)}$

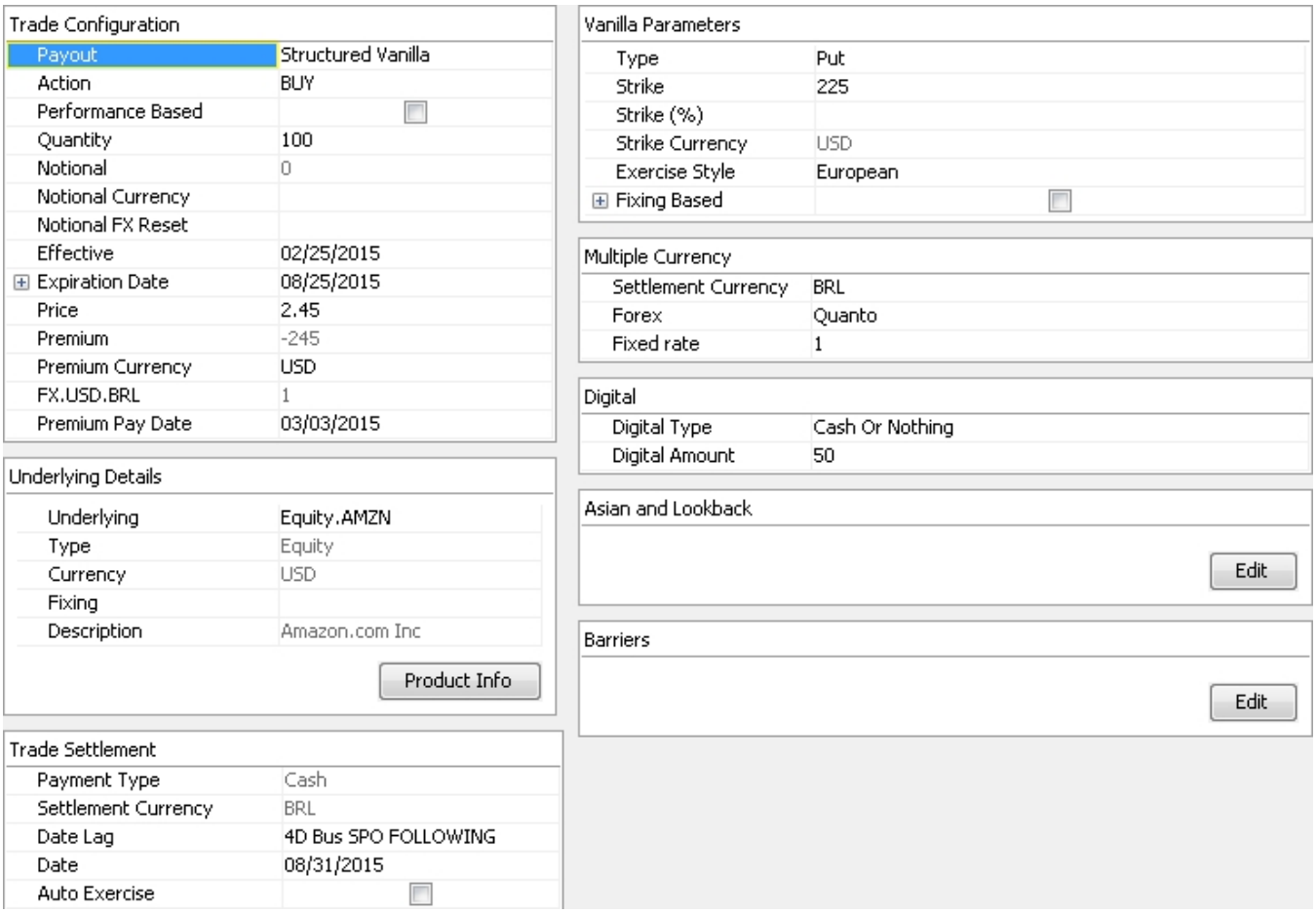
$\boldsymbol{K = K_{\%}S(t_1)*FX_{underlying/settlement}(t_1)}$ and $\boldsymbol{Q = \frac{N}{S(t_1)*FX_{underlying/settlement}(t_1)}}$

32. Capturing Structured Vanilla Options

Structured vanilla options allow capturing vanilla options with a combination of structured characteristics: Asian and Lookback, Barrier, Digital, Forex.

Choose **Trade > Equity > Equity Structured Option** to open the Equity Structured Option worksheet, from Calypso Navigator or from the Trade Blotter.

» Select the Structured Vanilla payout.



Equity Structured Option Trade Window - Sample Structured Vanilla trade

▶ See Capturing Equity Structured Options for general details.

Multiple Currency Details

▶ See Forex Equity Structured Options for details.

Digital Details

▶ See Digital Equity Structured Options for details.

Asian and Lookback Details

Click **Edit** to specify the Asian and Lookback details.

▶ See Asian and Lookback Equity Structured Options for details.

Barrier Details

Click **Edit** to specify the Barrier details.

▶ See Barrier Equity Structured Options for details.