



Nasdaq Calypso

Warrants

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Approved

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Document History

Revision	Published	Summary of Changes
1.0	February 2024	First revision for version 18.

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

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1. Warrants Overview

Reference Data and Setup

- [Domain Values](#)
- [Workflow: Mirroring](#)
- [Accounting](#)
- [Product Definition](#)

Market Data

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](#).
- Quotes - See [Calypso Navigator > Market Data > Market Quotes > Quotes](#).

Warrant Type	Extended Type	Default Pricers
TradingWarrant	European	PricerBlack1FAnalyticVanilla
TradingWarrant	American	PricerBlack1FFiniteDifference
IndexWarrant	European	PricerBlack1FAnalyticVanilla
IndexWarrant	American	PricerBlack1FFiniteDifference
CBBC	ANY	PricerWarrant (from Quote Only)
MINI	ANY	PricerWarrant (from Quote Only)
Compo/Quanto	ANY	PricerBlack1FAnalyticVanilla (from Quote Only)
InternationalWarrant	ANY	PricerWarrant (from Quote Only)
InvestmentWarrant	ANY	PricerWarrant (from Quote Only)
InstalmentWarrant	ANY	PricerWarrant (from Quote Only)
Capped	ANY	PricerWarrant (from Quote Only)

Warrant Type	Extended Type	Default Pricers
CurrencyWarrant	ANY	PricerWarrant (from Quote Only)
Exotic	ANY	PricerWarrant (from Quote Only)
Vanilla (legacy)	ANY	PricerWarrant (from Quote Only)

Trade Capture

- [Trading Warrants and Certificates](#)
- [Issuing Warrants and Certificates](#)
- [Issuance Mirroring](#)

Trade Lifecycle

- [Corporate Actions](#)

2. Warrants Domain Values

The following domain values should be reviewed:

- *Warrant.Status* – Status codes of the products.
- *Warrant.Deliverable* – Types of underlying products that can be physically delivered.
- *Warrant.UnderlyingEditable* – Warrants with underlyings not managed in Calypso for which the user will have to capture the description.
- *Certificate.UnderlyingEditable* – Certificates with underlyings not managed in Calypso for which the user will have to capture the description.

Below are the default warrant domain values related to warrant definition.

- *Warrant.Attributes* – CBBC, CurrencyWarrant, IndexWarrant, InternationalWarrant, InvestmentWarrant, MINI, TradingWarrant, Capped, and Exotic
- *Warrant.AveragePrice* – TradingWarrant and IndexWarrant
- *Warrant.Barrier* – CBBC, IndexWarrant, MINI, and TradingWarrant
- *Warrant.BuyBackPeriod* – MINI
- *Warrant.Covered* – CBBC, CurrencyWarrant, IndexWarrant, InternationalWarrant, InvestmentWarrant, MINI, TradingWarrant, and Capped
- *Warrant.Deliverable* – BondConvertible and Equity
- *Warrant.DeliveryUnderlying* – InternationalWarrant
- *Warrant.DivPassThrough* – InstalmentWarrant
- *Warrant.FxType* – CurrencyWarrant, IndexWarrant, InternationalWarrant, and TradingWarrant
- *Warrant.Pricer* – PricerBlack1FAnalyticDiscreteVanilla, PricerBlack1FFiniteDifference, PricerWarrant
- *Warrant.SpecialQuote* – IndexWarrant, TradingWarrant, InvestmentWarrant, and InstalmentWarrant
- *Warrant.Status* – NONUPDATE, PENDING, and VERIFIED
- *Warrant.subtype* – CBBC, Capped, CurrencyWarrant, Exotic, IndexWarrant, InstalmentWarrant, InternationalWarrant, and TradingWarrant
- *Warrant.Type* – Certificate and Warrant
- *Warrant.Underlying* – Equity, EquityIndex, and FX
- *Warrant.UnderlyingEditable* – Equity, Equity, and FX
- *Warrant.Issuance.Pricer* – PricerWarrantIssuance

3. Workflow - Mirroring

In order to manage Issuances and to simplify the capture of the trades, Calypso allows using a workflow rule which will generate:

- an Issuance trade when capturing a Buy/Sell with the Issuer, or
- a Buy/Sell trade with the Issuer when capturing an Issuance.

The goal is to simplify the capture of the trades for the “in house” Warrants when the bank has to provide facilities to the issuer.

Since the Mirroring functions cannot work on two different product classes in Calypso, it will be managed with a Workflow Rule. Thus, it will be possible to manage different workflows for each kind of trade, even if some status codes could be linked (a modification or a cancellation can be replicated to the linked trade).

The workflow rule **IssuanceMirror** can be set on each transition where the relationship between both trades is needed. The rule is set on the *Master* workflow which can be either the *Warrant* or the *Issuance*.

By default, the workflow rule is active only when:

- On the Buy/Sell trade, the *Counterparty* of the trade is a *ProcessingOrg* and is the *Issuer* of the product, or
- On the Issuance trade, the *Counterparty* of the trade is a *ProcessingOrg* and the *Issuer* of the product is the *owner of the Book*.

The workflow rule can also be activated when the *Counterparty* of the trade is the *Issuer* of the product and has an Attribute **AUTO_ISSUANCE_MIRROR**= true.

① [NOTE: The workflow rule *IssuanceMirror* must never be setup on both products (e.g. Warrant and WarrantIssuance)]

4. Warrants Accounting

The following accounting events can be used for warrants:

OFF_BALANCE: To book the off balance amount

- Retro-Activity = FULL
- Event Class = OFF
- Booking Type = N/A
- Event Property = NONE
- Trigger Events: VERIFIED_TRADE, CANCELED_TRADE

This amount depends on the product type and is calculated as follows:

- **Vanilla, CBBC, MINI, Index, TradingWarrant, Investment, and Instalment:** $(\text{Quantity} * \text{Strike}) / (\text{Parity 1} / \text{Parity 2})$
- **Exotic:** $\text{Quantity} * \text{Unit Off-Balance}$
- **Capped:** $(\text{Quantity} * \text{ValAbs}[(\text{Strike} - \text{Strike2})]) / (\text{Parity 1} / \text{Parity 2})$
- **Quanto:** $(\text{Quantity} * \text{Strike}) / \text{FX Rate} * (\text{Parity 1} / \text{Parity 2})$

EXERCISE_FEE provides the performance amount.

- Retro-Activity = FULL
- Event Class = BALANCE
- Booking Type = N/A
- Event Property = NONE
- Fee Related Event = true
- Trigger Events: VERIFIED_TRADE, CANCELED_TRADE

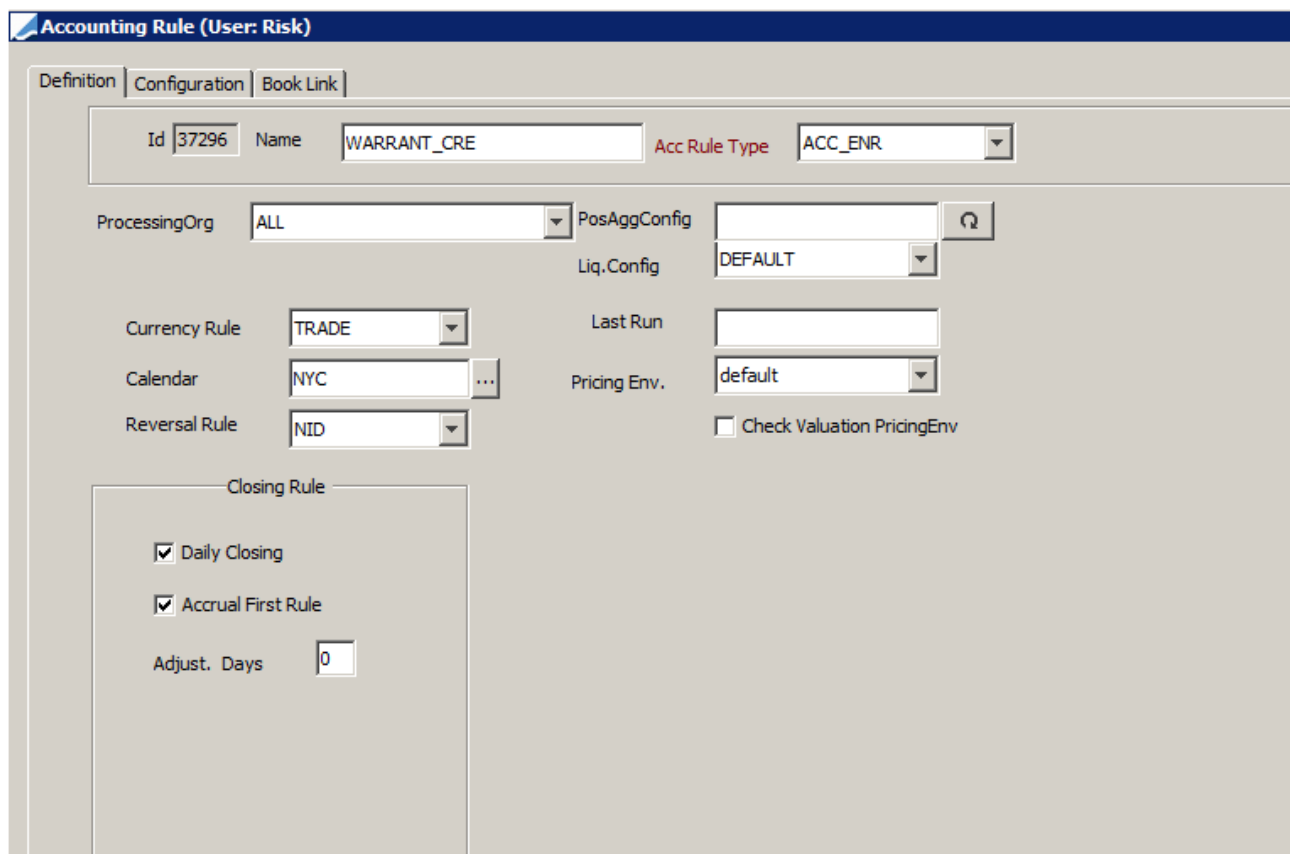
The following events are available for Warrants and Certificates: COT, COT_REV, CST, NOM_FULL, NOM_CLEAN, NOM_FULL_REV, NOM_CLEAN_REV, REALIZED_PL, REALIZED_CLEAN_PL, MTM_FULL, POSITION_VALUATION, OFF_BALANCE, EXERCISE_FEE.

Basic Warrant Accounting Setup

The screen shots below are meant to give you to a brief look at some of the windows involved in warrant accounting.

The Accounting Rule window is where you can specify the accounting treatment and define the accounting that will be applied.

Choose **Calypso Navigator > Configuration > Accounting > Rules** (menu action `refdata.AccountingRuleFrame`) to open the Accounting Rule window.



Accounting Rule (User: Risk)

Definition | Configuration | Book Link

Id: 37296 Name: WARRANT_CRE Acc Rule Type: ACC_ENR

ProcessingOrg: ALL PosAggConfig: Liq.Config: DEFAULT

Currency Rule: TRADE Last Run: Calendar: NYC Pricing Env.: default

Reversal Rule: NID ☐ Check Valuation PricingEnv

Closing Rule

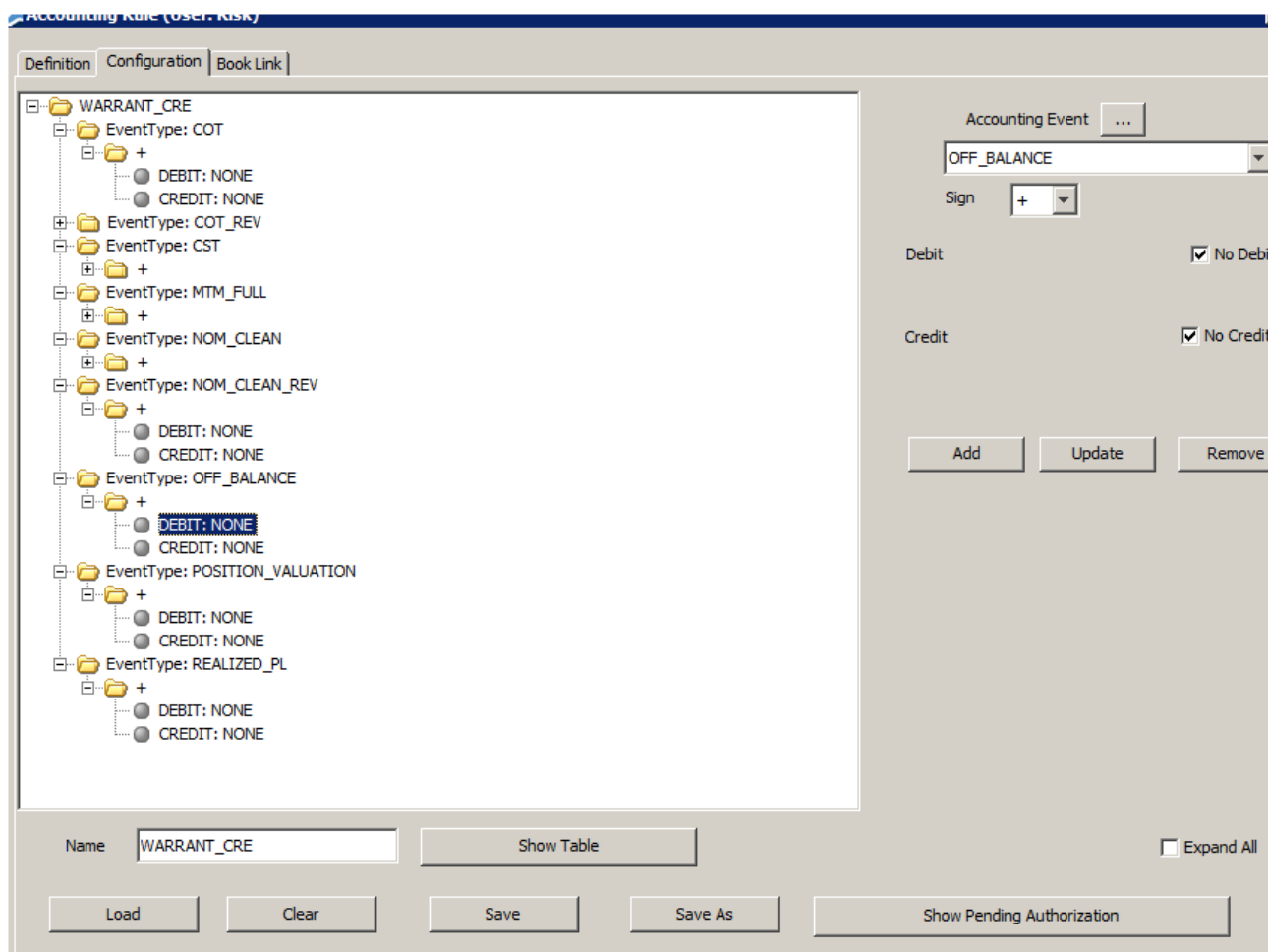
☒ Daily Closing

☒ Accrual First Rule

Adjust. Days: 0

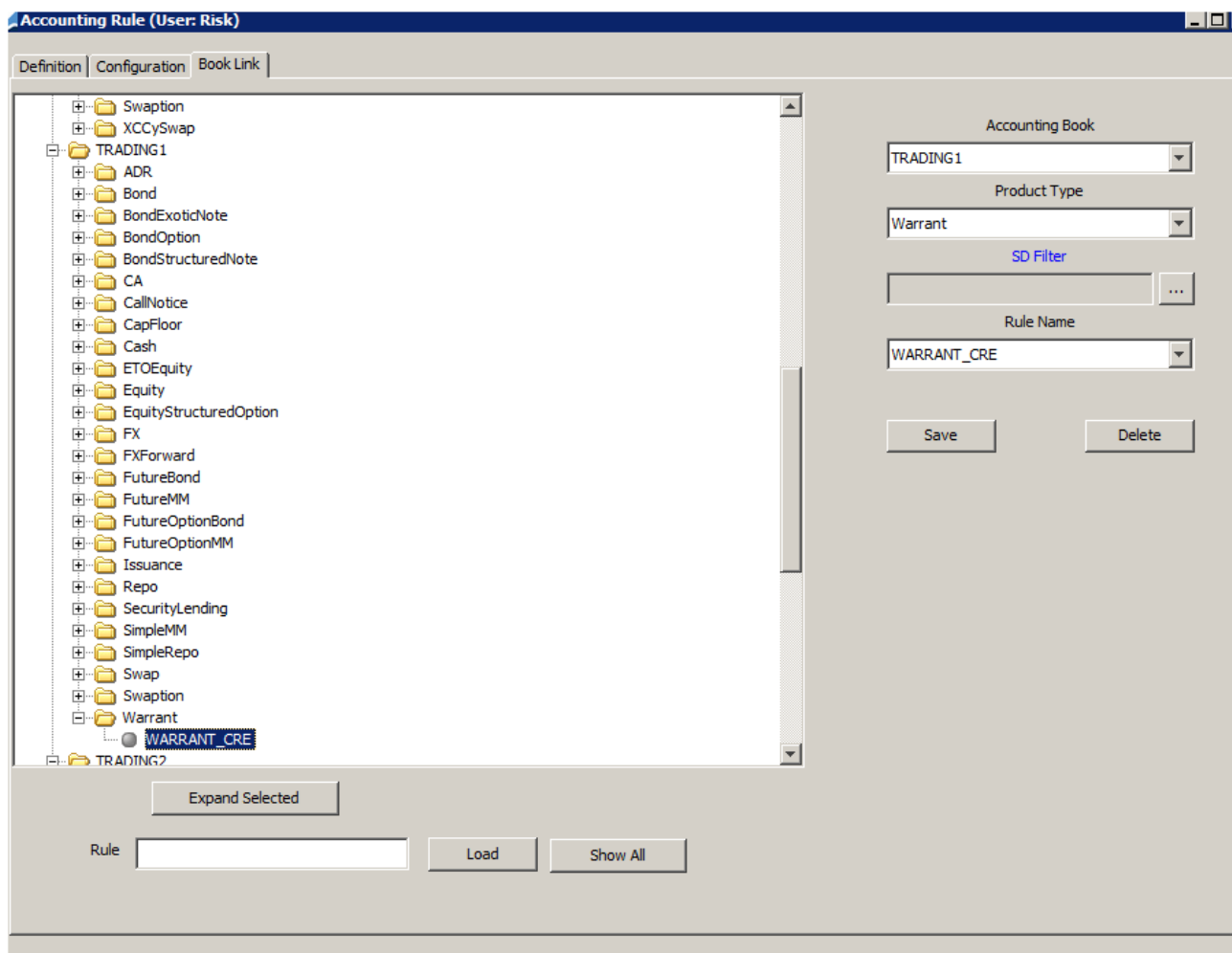
Accounting Rule - Definition

In the Configuration Panel, you can define the relationship between an accounting rule, an accounting event, and an account.



Accounting Rule - Configuration

In the Book Link panel, you can associate an accounting rule with a trading book.



Accounting Rule - Book Link

The Accounting Link window allows you to create and/or modify an account book, which collects postings that share the activity of one or more trading books.

Choose **Calypso Navigator > Configuration > Accounting > Books** (menu action `refdata.AccountingBookFrame`) to open the Accounting Link window.

Name

Comment

Classification

Id	Name	Comment
48	PLACEM1	Placement
53	TRADING2	Trading
13979	BANKING	Banking
47	INVEST1	Investissement
49	TRADING1	Trading
5422	ACC_BOOK	Accounting book
2	NONE	Startup Data

Accounting Link

In the Book Window, you can define trading books, which are collections of deals that represent business activity within an organization.

Choose **Calypso Navigator > Configuration > Books & Bundles > Trading Book** (menu action `refdata.BookWindow`) to open the Book Window.

Book Window - Version -0 [120100/RISKDB_ONORA11/risk] (User: Risk)

View Help

Book Id: 36296 Attributes: ...

Name: Warrants_BOOK

Activity: All Business Lines

Accounting Book: TRADING1

Legal Entity: CALYPSOPAR

Location: GMT

End Of Day: 23 Hour 59 Min ...

Base Ccy: USD

Holidays: LON, NYC, TARGET, TOK

Name	Value
AccAdjustmentDays	
AccDateRule	▼
AccReversalRule	▼
BookBundle	
CAMoneyDiff Book	
CTC Compounding	▼
CTC Consolidator	▼
CTC Offset	▼
CTC Role	▼
Can Take Positions	▼
DayChangeRule	
Domiciliation	▼
Drawn MM Book	▼

Book Window

Choose **Calypso Navigator > Trade > Equity > Warrant/Certificate** (menu action `trading.TradeWarrantWindow`) to open the Warrant Trade window and modify the trade information as needed.

Trade Back Office Warrant Cashflows Analytics Pricing Env Market Data View Utilities Help

Trade Details Cashflows Fees

Warrant

ISIN Browse Show ID

Type	Strike	Issue Date	Maturity Date	Issuer Description	Status
CALL	5.0	01/01/2009	01/06/2012	General Electric Capital Corporation	VERIFIED

Trade Date 08/01/2011

Trade Details

Buy Quantity Price (unit) Settle Date

Current Nominal Settle Currency Trade Amount

Pool Factor Settle Amount

Legal Entities

Issuer ... CALYPSO Paris Show

Broker ... Show

Book ...

Market Data Pricer Params Results

Val Date 9:57:43 AM Pricing Env Price

Warrant Trade Window

The Back Office Browser allows viewing the back office activity of trades.

Choose **Calypso Navigator > Reports > BO Browser** (menu action `reporting.bo.BOWorkspaceWindow`) to open the Back Office Browser.

BO Trade Browser (48045) x BO Trade Browser (43055) x

Trade ID ID 43055 ... SDI Transfers Messages Postings CREs Tasks

CREs

Report Data View Export Window

Cre Id	Event Type	Effective Date	Cre Type	Amount1	Currency1	Original Event	Booking Date	Cre Status	Sent Status	Sent Date	Accounting Rule	Creation Date
7068	CST	08/01/2011	NEW	-25,100.00	USD	VERIFIED_SEC_RECEIPT	09/09/2011	NEW			WARRANT_CRE	9/9/11 10:02:39.721 AM CEST
7144	COT	08/01/2011	NEW	-25,100.00	USD	VERIFIED_TRADE	08/08/2011	NEW			WARRANT_CRE	9/9/11 10:02:43.136 AM CEST
7145	COT_REV	08/01/2011	NEW	-25,100.00	USD	VERIFIED_TRADE	08/08/2011	NEW			WARRANT_CRE	9/9/11 10:02:43.136 AM CEST
7146	NOM_CLEAN	08/01/2011	NEW	-25,100.00	USD	VERIFIED_TRADE	08/08/2011	NEW			WARRANT_CRE	9/9/11 10:02:43.136 AM CEST
7147	OFF_BALANCE	08/01/2011	NEW	130,000.00	USD	VERIFIED_TRADE	08/08/2011	NEW			WARRANT_CRE	9/9/11 10:02:43.136 AM CEST

Back Office Browser

5. Warrant Product Definition

Prior to trading a Warrant or Certificate, you need to create the product in the Warrant/Certificate window.

Warrant Types

- **CBBC:** A CBBC warrant (or Callable Bull Bear Contract) is a warrant with a barrier usually different from the strike. The CBBC is knocked out if the barrier is triggered, and the final reference price is determined by taking the low or the high of two consecutive trading sessions (depends on potential market disruption events). The underlying can be an equity or an equity index and the CBBC is settled in cash or physically. It is possible to store quotes computed during the two sessions following the barrier triggering.
- **Currency Warrant:** The underlying is an currency pair. At expiry, if the warrant is in the money, the holder is only able to exercise into cash.
- **Exotic Warrant:** Generic Warrant
- **Index Warrant:** The underlying is an equity index. At expiry, if the warrant is in the money, the holder is only able to exercise into cash.
- **Installment Warrant:** An Installment Warrant is a European warrant with an embedded call or put option. At expiry, if the warrant is in the money, the holder is able to exercise into cash or shares, depending on the terms of the warrant. Regular dividends are passed to the holder of the warrant (dividend pass through) in cash. For Installment Warrants with the checkbox "Dividends Passed Through" selected, a corporate action CASH/DIVIDEND will be created on the dividend ex-date. [NOTE: This only applies to Installment Warrants with an Equity as the underlying.] The dividends are inputted in Calypso as regular corporate action dividends on an equity, and there is a corresponding impact on the equity dividend schedule.
- **International Warrant:** At expiry, if the warrant is in the money, the holder will receive a stock different than the underlying.
- **Investment Warrant:** Usually, there is a low strike, long maturity, and no barrier. At expiry, if the warrant is in the money, the holder is able to exercise into cash or shares.
- **MINI:** A MINI is a barrier warrant with no expiry delivery cash in case of knock out. The warrant strike and barrier level are recomputed daily. The initial strike and level are captured on the warrant product. If the barrier is triggered, the holder can sell back the MINI to the issuer during the stop loss period, which starts at the stop loss date and usually ends one business later (or more, depending of the buy back period tenor set on the warrant). On the period end date, the final reference price (stop loss termination reference price) is determined.
- **Trading Warrant:** At expiry, if in the money, the holder is able to exercise into cash or shares (depending on the terms of the warrant).

5.1 Defining a Warrant or a Certificate

From Calypso Navigator choose **Configuration > Equity > Warrant/Certificate** to open the window as shown below.

Warrant/Certificate Window (User: calypso_user)

Name: /W/C/0513/LLTC/80.00 Product Id: 19800

Security Code: BB_MARKET_SECTO... Load

Warrant | Special | Paydown | Events | Legal Entities | Average Price Schedule | Floating Strike | Issuer/Info | Barrier

Definition

Class: Warrant Type: TradingWarrant Call/Put: CALL Exercise Type: European

Strike: 80.000000000000 Strike 2: 0.000000000000 Price Type: Price ☐ Covered

Underlying

Underlying: Equity Equity.LLTC ... Equity.LLTC USD NASDAQ

Dates

Issue Date: 02/02/2012 Announcement Date: 02/02/2012 Maturity Date: 05/02/2013

Tenor: 15M Last Trading Days: 0 Observation Dates

Size

Issue Size: 500 Trade Size: 1 Expiry Size: 1 Tick Size: 0

Issue Price: 0.710000000000 Face Value: 1.000000000000 Unit Off Balance: 0.000000000000

Settlement

Delivery Type: Cash Currency: USD ☐ Automatic Exercise ☐ Expiry Average

Special Quote: FX Type: Quanto ☐ Dividend Pass Through

FX Rate: 1.00000 Parity: 20 / 1

Load New Save Save As New Delete Update Name Close

Sample Warrant Definition

- » To load an existing Warrant or Certificate, select a product code from the Security Code list, and enter the actual code value in the adjacent field as shown below.

Security Code: ISIN NL0000083293 Load

Then click **Load** to load the corresponding product.

You can also click **Load** at the bottom of the window to open the Product Chooser window. Help is available from that window.


Otherwise, click **New** and enter the fields in the product panel and other panels as applicable. The fields are described below.

» Click **Save** to save your changes. You will be prompted to enter a product name.

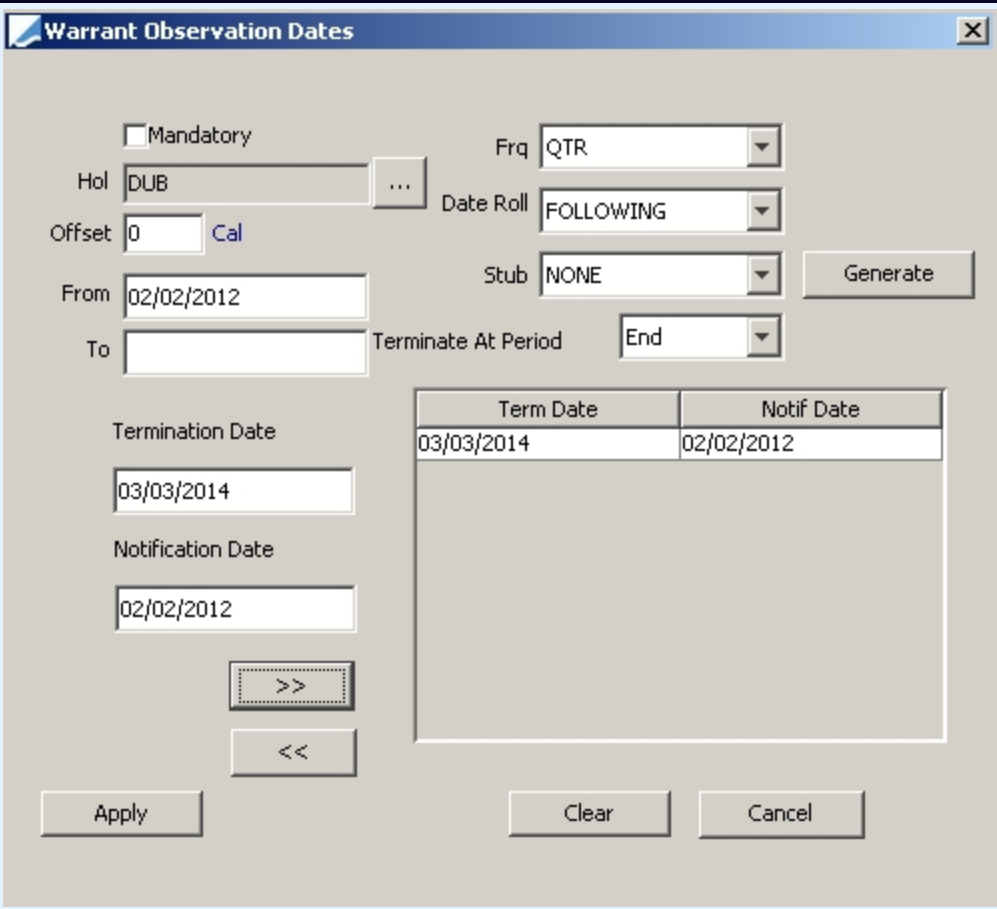
You can also click **Save As New** to save the product as a new Warrant or Certificate. You will be prompted to enter a new name.

You can click **Update Name** to modify the product's name. You will be prompted to enter a new name.

Fields Details

Fields	Description
Name	Name given by the user when the Warrant or Certificate is saved.
Product Id	Unique id given by the system when the Warrant or Certificate is saved.
Class	Select a product class: <i>Warrant</i> or <i>Certificate</i> . The class cannot be changed once the product is saved.
Type	Options for Warrant: CBBC, Capped, CurrencyWarrant, Exotic, IndexWarrant, InstalmentWarrant, InternationalWarrant, InvestmentWarrant, MINI, Quantofixe, Quantovar, TradingWarrant, or Vanilla. By default, the field type is set to "TradingWarrant". For Certificate, the only option is Exotic.
Call/Put	Select CALL or PUT. This field is available only for Warrants.
Exercise Type	Select a type of exercise: <i>American</i> , <i>European</i> , or <i>Bermudan</i> .
Strike	Enter the Warrant strike. This field is available only for Warrants. The value represents the exercise price.
Strike 2	This field is available only for Capped Warrants. The Strike 2 value represents the cap level.
Price Type	Select the type of price: <i>Price</i> , <i>PriceC</i> , or <i>CleanPrice</i> .
Covered	Available for Warrants (except Exotic, Quantofixe, Quantovar, and Vanilla). The checkbox indicates whether or not the warrant is covered. A covered warrant, unlike a regular warrant, is issued by a financial institution and not the company that issued the underlying security. Usually the underlying shares are placed in a trust. [NOTE: No processing is associated with this field; it is just for information.]
Underlying Type	Select the type of underlying product. For Currency Warrants, the underlying must be a currency pair.
Underlying Product	If the underlying product is managed in Calypso, click  and select a product with the Product Chooser window. Following the selection, the code and description are displayed. For the products not managed in Calypso, the description must be entered by the user. This field is editable if the underlying product type belongs to the domain

Fields	Description
	<i>Warrant.UnderlyingEditable or Certificate.UnderlyingEditable.</i>
Underlying Description	For the products managed in Calypso, a double-click on the underlying description opens the window of the related product.
Underlying Currency	This field is editable only for the products not managed in Calypso. For the others, this field displays the currency of the underlying product.
Underlying Exchange	This field is editable only for the products not managed in Calypso, or products that have no exchange place (e.g. FX, Basket). For the others, this field displays the exchange place of the underlying product.
Issue Date	Enter the issue date.
Announcement Date	Enter the Announcement date.
Maturity Date	Fixed maturity date. For open end maturity warrants, such as MINI, this field is not mandatory.
Tenor	Maturity date expressed as Tenor relative to the issue date.
Last Trading Days	Number of days prior to Maturity Date in which the warrant is no longer traded.
Buy-Back Period	Only applies to MINI. When a MINI is knocked out, the issuer can buy back the MINI during the buy-back period. The period starts at the knock out date and usually last several business days. The warrant can only be sold to the issuer at the Remaining value, which is calculated as: Remaining Value = (Stop Loss Termination Price - Current Price) / Conversion Price
Observation Dates	Click Observation Dates to enter the different notification and maturity dates. This screen allows generating a range of dates depending on a frequency. It also allows adding specific dates. All these dates will appear in the Trade Diary report.

Fields	Description
	
Issue Size	Enter the total face amount of the issue.
Trade Size	Enter the minimum nominal tradable. Default value = 1.
Expiry Size	Enter the expiry size. Default value = 1.
Tick Size	Enter the nominal tradable beyond the minimum trading size. Default value = 0.
Issue Price	Enter the issue price.
Face Value	This field is only editable if the Price Type is "PriceC" or "CleanPrice". Enter the price with the variable nominal. Default value = 1.
Unit Off Balance	Enter the face value variation. Only used for warrants that have a nominal different from the face value.
Delivery Type	Select the delivery type in case of exercise/assignment of the product. The options include <i>Cash</i> , <i>Mix</i> , <i>Not Known</i> , and <i>Physical</i> . The default value is <i>Cash</i> . [NOTE: For International Warrants, the Delivery Type field defaults to "Physical".]
Currency	Select the settlement currency. The default is the underlying currency. [NOTE: For International Warrants, the Currency field defaults to the currency of the

Fields	Description
	"Underlying to deliver".]
Automatic Exercise	Tick the checkbox for products eligible for automatic expiry / exercise / knock out by dedicated scheduled task.
Expiry Average	Tick the checkbox to use an average price as the final reference level. If the box is ticked, the Average Price Schedule tab will be enabled.
Special Quote	Instead of using the final closing price or an average final price, a warrant can use a special quote as the final reference level. At expiry / exercise, the warrant is settled against the special quote.
FX Type	Available for Currency Warrant, Index Warrant, International Warrant, and Trading Warrant. Field can only be selected if the Settlement currency is different than the Underlying currency. Select <i>Quanto</i> or <i>Compo</i> .
Underlying to deliver	Only available for International Warrants. Specify the equity to deliver if the warrant is "in the money" at expiry.
Dividend Pass Through	Tick the checkbox if the warrant is eligible for ordinary dividends, in which case, the corporate action module will generate a CASH Dividend CA.
FX Rate or FX Reset	For Quanto, enter an FX Rate. For Compo, select an FX Reset.
Parity	Select the quantity of warrant to exercise (From) to obtain a quantity of underlying (To).

5.2 Specifying Special characteristics

Select the Special panel to capture additional characteristics.

Warrant	Special	Paydown	Events	Legal Entities	Average Price Schedule	Floating Strike	Issuer/Info	Barrier
---------	----------------	---------	--------	----------------	------------------------	-----------------	-------------	---------

Settlement Dates

Primary Value Date
03/15/2012

Secondary Days
3

Maturity Days
5

Legal Entities

Issue Paying Agent BNPP_AI ... BNP PARIBAS Arbitage Issuance BV

Calculator Agent BNPPARIBAS ... BNPPARIBAS

Guarantor BNPPARIBAS ... BNPPARIBAS

Countries

Governing law
NETHERLANDS

Selling restriction Filter
EBA ...

Activation Dates

Active

From
03/15/2012

To
11/15/2012



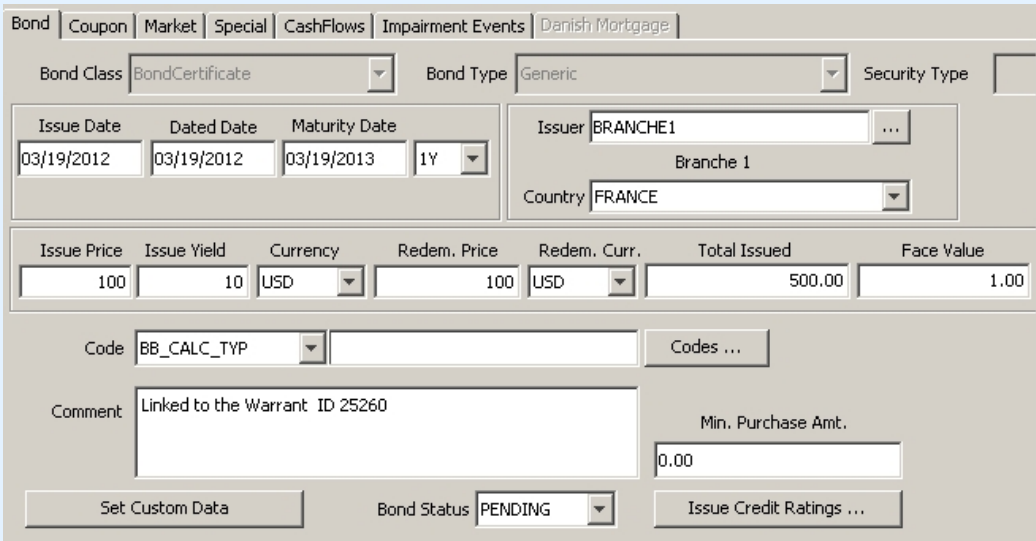
☐ Certificate Coupon

Warrants/Certificate window - Special panel

» Enter the fields described below as needed.

Fields Details

Fields	Description
Primary Value Date	Enter the settlement date for trades on the Primary/Grey Markets. If the field is left blank, the settlement date of the Primary trades will be the Issue Date.
Secondary Days	Number of days to calculate the settlement date of trades on the Secondary Market. Don't forget to setup calendar(s) on the Market Place.
Maturity Days	Number of days to calculate the settlement date of trades generated at maturity.
Issue Paying Agent	Name of the Issue Paying Agent for a new issue. The agent should be previously created as a Legal Entity with the role IPA. The Issue Paying Agent will be used for issuance trades. Double-click on the Issue Paying Agent description displayed in red to open the Legal Entity

Fields	Description
	screen.
Calculator Agent	<p>Name of the Calculator Agent for events. It should be previously created as a Legal Entity with the role Calc_Agent.</p> <p>Only for information at the moment.</p> <p>Double-click on the Calculator Agent description displayed in red to open the Legal Entity screen.</p>
Guarantor	<p>Name of the Guarantor. It should be previously created as a Legal Entity with the role Guarantor.</p> <p>Double-click on the Guarantor description displayed in red to open the Legal Entity screen.</p>
Governing Law	Select the country in which the product issued belongs.
Selling Restriction Filter	<p>Enter here a Static Data Filter. The goal is to have a workflow rule which will alert the user in case of trades with a non-allowed counterparty.</p> <p>Click  to select a Static Data Filter.</p> <p>Click the heading of this field to create a new Static Data Filter or to modify an existing Static Data Filter.</p>
Active From ... To ...	Range of dates when the product can be used in the system.
Certificate Coupon	<p>Tick this checkbox to capture the coupon characteristics. It is editable only for Certificates. Then, click  to open a new screen.</p> <p>The coupon characteristics will be captured as a bond (with a dedicated class = <i>BondCertificate</i>) linked to the Certificate. The main fields are initialized (Issue Date, Dated Date, Maturity Date, Total Issued, Face Value, Issuer, Country) and the Comment displays the Name and the Id of the Certificate.</p> 

Fields	Description
	Help is available from that window.

5.3 Applying Changes through the Paydown Tab

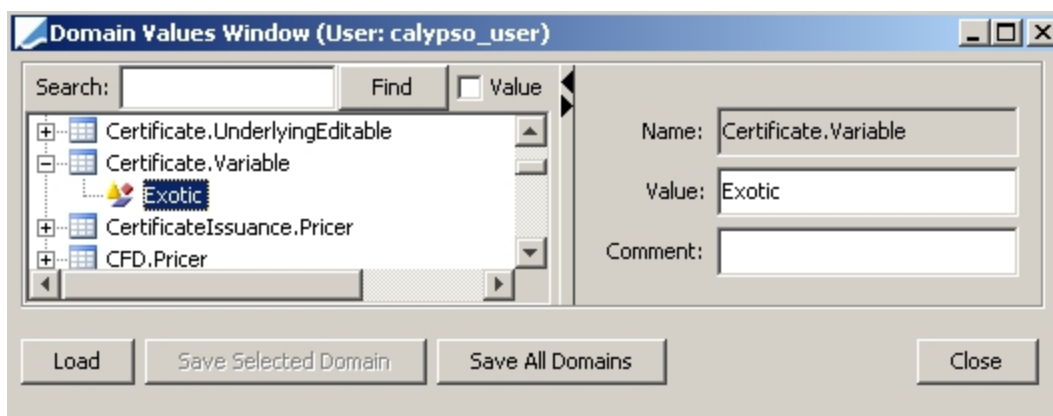
Select the Paydown tab to create, edit, and remove Face Value variation.

[NOTE: The Paydown functionality can only be applied to certificates.]

To enable the functionality, you must add the following domain values:

- *Warrant.Variable*
- *Certificate.Variable*

The subtypes listed under the domain can have a variable face value.



Warrant/Certificate Window (User: calypso_user)

Name: /C/0313/GM Product Id:

Security Code: BB_MARKET_SECTO... Load

Warrant | Special | **Paydown** | Events | Legal Entities | Average Price Schedule | Floating Strike | Issuer/Info | Barrier

Paydown Schedule

+ - X

Effective Date	Known Date	End Date	Face Value	Unit Off Balance	Factor
03/12/2012	03/12/2012	03/14/2012	50.0	4.0	2
03/14/2012	03/14/2012	03/15/2012	50.0	4.0	2
03/15/2012	03/15/2012		75.0	6.0	3

Load New Save Save As New Delete Update Name

Warrants/Certificate window - Paydown panel

- » Click  to bring up the Warrant Paydown window.

Specify the Effective Date (application date) and Factor Change. The Face Value and Unit Off Balance will be calculated automatically.

Warrant Paydown

Effective Date : 03/12/2012



Factor : 2.0000000000

Face Value : 50.0000000000

Unit Off Balance : 4.0000000000

Apply Cancel

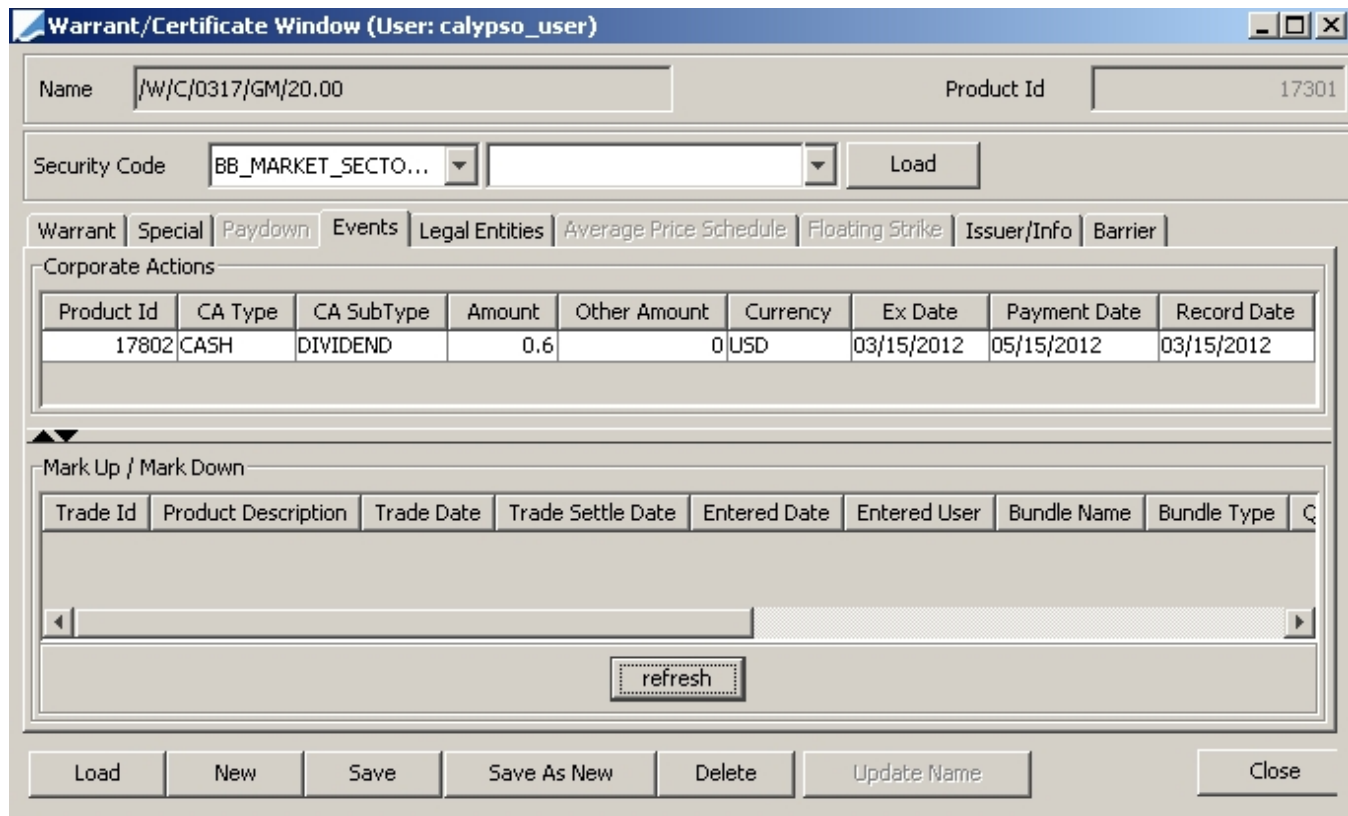
Click **Apply** to update the Paydown Schedule and return to the Paydown panel.

- » Click  to configure columns, reset configurations to default, or save configurations.
- » Click  to export to HTML, Excel, or CSV.

5.4 Displaying Events

Select the Event panel to display all events in the life of the product.

- The first part of the screen displays the Corporate Actions and all other events: Exercise, Assignment, Expiry, Barrier Deactivation.
- The second part displays the events on the Issuance product: Issuance, Mark-up, Mark-Down.



Warrant/Certificate Window (User: calypso_user)

Name: /W/C/0317/GM/20.00 Product Id: 17301

Security Code: BB_MARKET_SECTO... Load

Warrant | Special | Paydown | **Events** | Legal Entities | Average Price Schedule | Floating Strike | Issuer/Info | Barrier

Corporate Actions

Product Id	CA Type	CA SubType	Amount	Other Amount	Currency	Ex Date	Payment Date	Record Date
17802	CASH	DIVIDEND	0.6	0	USD	03/15/2012	05/15/2012	03/15/2012

Mark Up / Mark Down

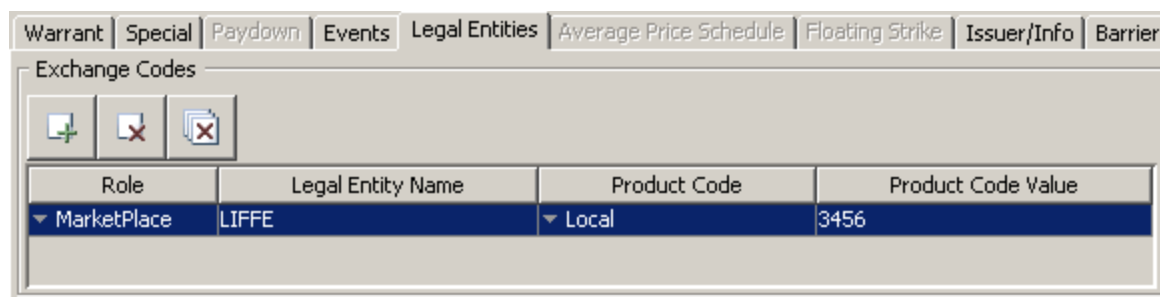
Trade Id	Product Description	Trade Date	Trade Settle Date	Entered Date	Entered User	Bundle Name	Bundle Type
refresh							

Load New Save Save As New Delete Update Name Close

Warrants/Certificate window - Events panel

5.5 Specifying Legal Entities

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



Warrant | Special | Paydown | Events | **Legal Entities** | Average Price Schedule | Floating Strike | Issuer/Info | Barrier


Exchange Codes

+ - X

Role	Legal Entity Name	Product Code	Product Code Value
MarketPlace	LIFFE	Local	3456

Warrants/Certificate window - Legal Entities panel

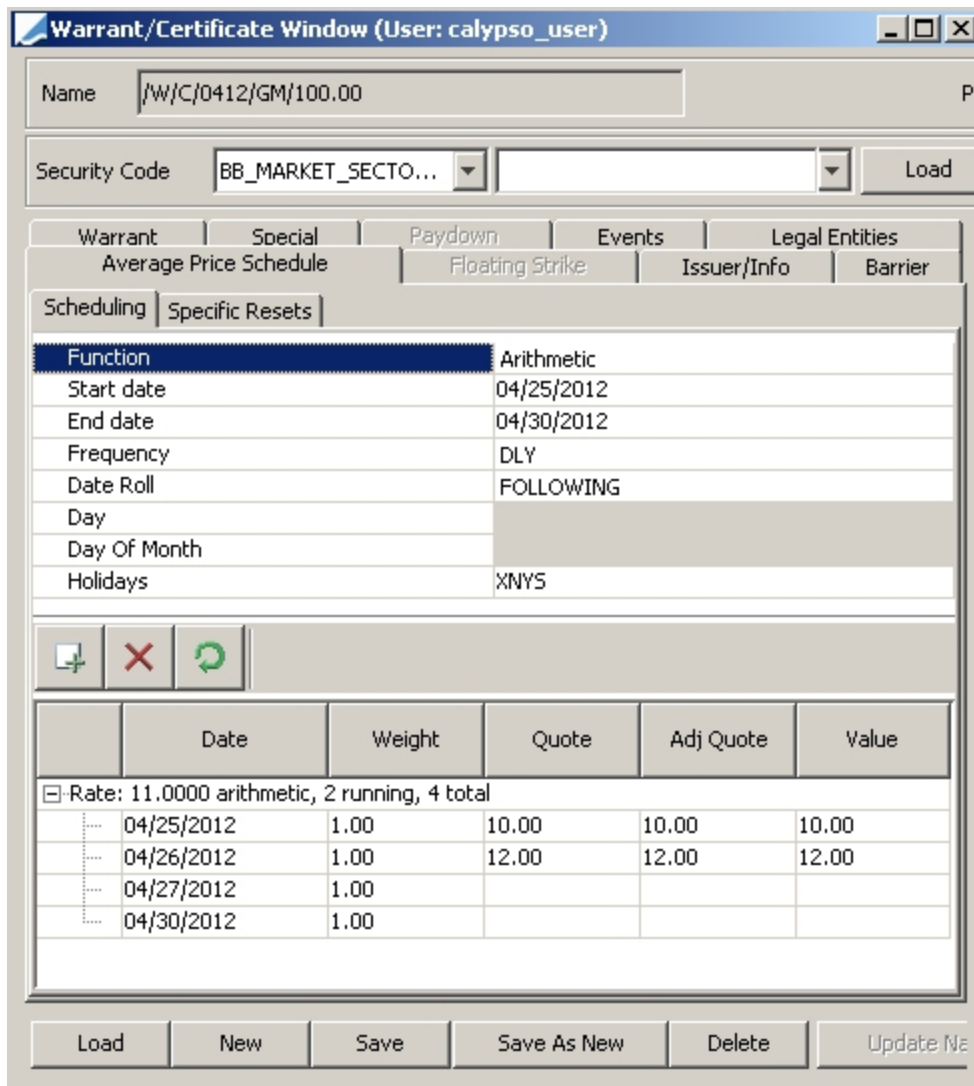
You can use this panel to specify, for example, specific product codes by market place.

- » 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.

5.6 Specifying Average Price Schedule

Warrants can be settled using an average price calculation as the final reference level. The Average Price Schedule tab is used to specify the dates to include in the computation, usually the 5 days prior to the maturity date.

The Holidays Field defaults to the holiday calendar associated with the selected underlying.



Warrant/Certificate Window (User: calypso_user)

Name: /W/C/0412/GM/100.00




Security Code: BB_MARKET_SECTO... Load

Warrant | Special | Paydown | Events | Legal Entities

Average Price Schedule | Floating Strike | Issuer/Info | Barrier

Scheduling | Specific Resets

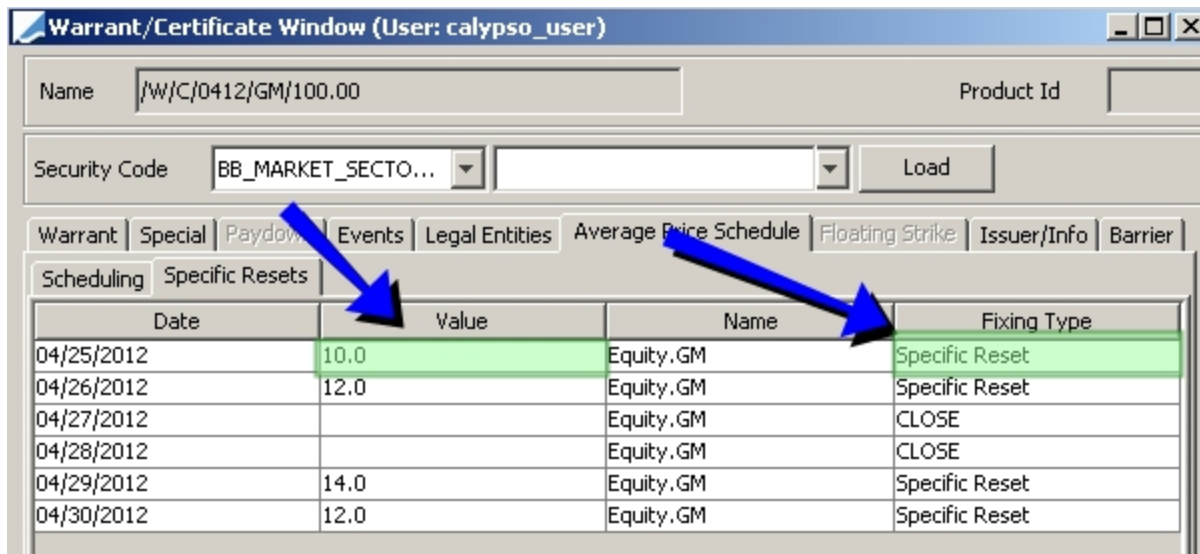
Function	Arithmetic
Start date	04/25/2012
End date	04/30/2012
Frequency	DLY
Date Roll	FOLLOWING
Day	
Day Of Month	
Holidays	XNYS

	Date	Weight	Quote	Adj Quote	Value
☐ Rate: 11.0000 arithmetic, 2 running, 4 total					
...	04/25/2012	1.00	10.00	10.00	10.00
...	04/26/2012	1.00	12.00	12.00	12.00
...	04/27/2012	1.00			
...	04/30/2012	1.00			

Load New Save Save As New Delete Update Name

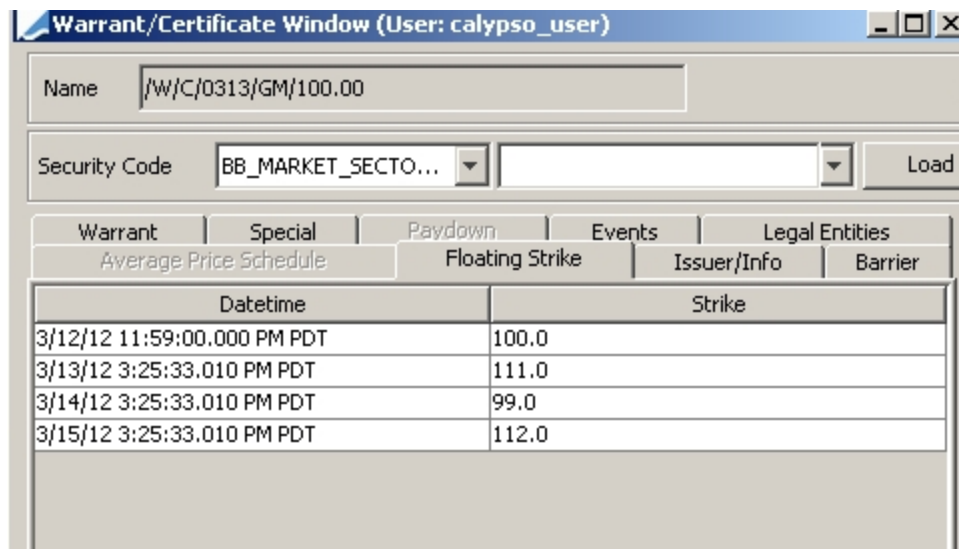
The fixing on the last days can be overridden by the Specific Reset tab.



Date	Value	Name	Fixing Type
04/25/2012	10.0	Equity.GM	Specific Reset
04/26/2012	12.0	Equity.GM	Specific Reset
04/27/2012		Equity.GM	CLOSE
04/28/2012		Equity.GM	CLOSE
04/29/2012	14.0	Equity.GM	Specific Reset
04/30/2012	12.0	Equity.GM	Specific Reset

5.7 Displaying Floating Strike

[NOTE: Functionality only applicable for MINI warrants.]



Datetime	Strike
3/12/12 11:59:00.000 PM PDT	100.0
3/13/12 3:25:33.010 PM PDT	111.0
3/14/12 3:25:33.010 PM PDT	99.0
3/15/12 3:25:33.010 PM PDT	112.0

- » Right-click inside the Floating Strike panel to add a row.
- » Specify the Date and time along with corresponding strike price.

The WARRANT_PROCESSING scheduled task can be used to automatically copy the MINI strikes to the Floating tab of the MINI warrant.

Task Type	WARRANT_PROCESSING
External Reference	
Comments	
Description	
Attempts	1
Retry After, In Minutes	0
JVM Settings	-Xms512m -Xmx1024m
Allow Task To	<input type="checkbox"/> Skip Execute <input type="checkbox"/> Send Emails
+ Common Attributes	
- Task Attributes	
Operation	Upgrade floating strike (MINI)
Subtype	MINI
Barrier knock-out	

5.8 Specifying Issuer

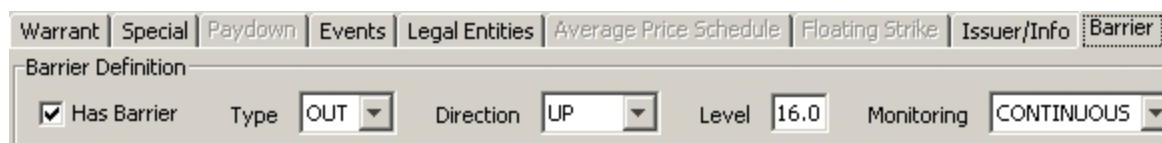
Select the Issuer/Info panel to specify the Issuer and related information.

Warrant	Special	Paydown	Events	Legal Entities	Average Price Schedule	Floating Strike	Issuer/Info	Barrier
Issuer								
Exchange		NASDAQ		Issuer		GOVT. OF USA		...
Codification		BB_MARKET_SECTOR_DES				Codes ...		
Info								
Status		PENDING		Comment				
						Templates ...		
						Attributes ...		

Fields	Description
Exchange	Select the exchange where the product is issued.
Issuer	Choose the Issuer.
Codification	Select a Product Code.
Codes	Click Codes to specify code values using the Code Window.
Status	Select a status for the product.
Comment	Enter a comment as applicable.
Templates	Click Templates to select a template operation.
Attributes	Click Attributes to bring up the Attributes Window.

5.9 Defining Barriers

Select the Barrier tab to define the barrier attributes.



Fields	Description
Has Barrier	Tick the checkbox if the warrant has a barrier.
Type	Select IN or OUT.
Direction	Select UP or DOWN.
Level	Enter an absolute value to represent the barrier level. For simple knock out warrants, the barrier level is usually equal to the strike price.
Monitoring	Select CLOSING or CONTINUOUS. CLOSING is set as the default. In terms of processing, the monitoring type does not impact the settlement.

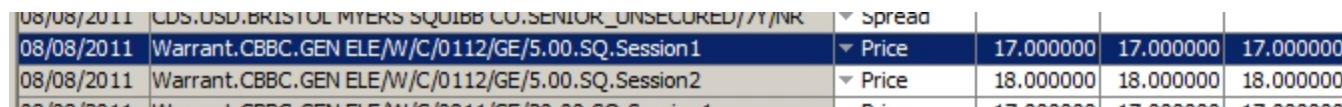
5.9.1 CBBC Barriers

For CBBC warrants, the barrier level can be different from the strike price. An external system is responsible for notifying the Calypso system when a barrier is triggered. The external system will publish the high/low prices and the CBBC call level will be monitored against them. If the CBBC barrier is triggered, the valuation period is separated into two consecutive trading sessions (assuming there are no market disruption events), during which the high/low of each session is published. One special quote for each session is created, published, and used for CBBC settlement.

When computing the knockout settlement amount, the final reference level will be determined as follows:

- For bull CBBC, the final reference level is the lowest of the two special quotes.
- For bear CBBC, the final reference level is the highest of the two special quotes.

The session quotes are named: XXXX.SQ.Session1 and XXXXX.SQ.Session2 where XXXX is the Warrant name.



08/08/2011	CBS.USD.BRISTOL MYERS SQUIBB CO.SENIOR_UNSECURED/71/NR	Spread			
08/08/2011	Warrant.CBBC.GEN ELE/W/C/0112/GE/5.00.SQ.Session1	Price	17.000000	17.000000	17.000000
08/08/2011	Warrant.CBBC.GEN ELE/W/C/0112/GE/5.00.SQ.Session2	Price	18.000000	18.000000	18.000000
08/08/2011	Warrant.CBBC.GEN ELE/W/C/0112/GE/5.00.SQ.Session1	Price	17.000000	17.000000	17.000000

5.9.2 MINI Barriers

The barrier level is a stop-loss to protect against a negative MINI price. The level is recomputed daily and published by the issuer prior to the open of each day.

The initial strike and level are captured on the warrant product.

The daily strike is stored as a quote named XXXX.STRIKE and the daily barrier level as XXXX.STOPLOSS where XXXXX is the warrant name.

Filters <input type="text" value="_ALL_"/> Add Remove							
Date	Quote Name	Quote Type	Bid	Ask	Open	Close	High
08/09/2011	Warrant.BARCLAY/W/C/0112/ICBC 01/5.00	▼ Price	2.200000	2.200000	2.200000	2.200000	2.200000
08/09/2011	Warrant.BARCLAY/W/C/0112/ICBC 01/5.00.STOPLOSS	▼ Price	15.000000	15.000000	15.000000	15.000000	15.000000
08/09/2011	Warrant.BARCLAY/W/C/0112/ICBC 01/5.00.STRIKE	▼ Price	4.500000	4.500000	4.500000	4.500000	4.500000

6. Trading Warrants and Certificates

Choose **Trade > Equity > Warrant/Certificate** to open the Warrant Trade window, as shown below, from Calypso Navigator or from a Trade Blotter.

Warrant.CALL/03/13/2017/GM/20.0 -PD is Default Processing Organisation (4930) - Version : 0 Mod User :(calypso_user) [130000...

Trade Back Office Warrant Cashflows Analytics Pricing Env Market Data View Utilities Help

Trade Details Cashflows Fees History

Warrant

Name Warrant.CALL/03/13/2017/GM/20.0 Browse Show ID 4930

Type CALL Strike 20.0 Issue Date 03/13/2012 Maturity Date 03/13/2017 Issuer Description Status PENDING Trade Date 03/13/2012

Trade Details

Buy Quantity 200,000 Price (unit) 0.720000000000 Settle Date 03/16/2012

Current Nominal Settle Currency USD Trade Amount 144,000.0000000000 USD

Pool Factor Settle Amount -144,000.0000000000

Legal Entities

CounterParty HEADOFFICE ... Head Office Show

Broker NONE ... NONE Show

Book Global ...

Bundle Entry

Trade Date 03/13/2012 Types Names

Finance Asset Swap Performance Swap IR Swap

Additional

Mirror Book NONE Market Type Secondary Trade Classification

Comment

Speed Entry

Buy Name Warrant.CALL/03/13/2017/GM/20.0 ... Nominal 200,000 Save

Price 0.72 Settle Date 03/16/2012 Cpty HEADOFFICE ... Book Global New

Market Data Pricer Params Results

ZC USD Libor-Deposit 3M/6M/USD(R)CLOSE 7/21/11 12:19:08.000 PM PDT

Val Date 03/14/2012 3:46:06 PM Pricing Env INTRADAY Price Close

Legal Entity: HEADOFFICE

Sample Warrant Trade

The Trade panel is selected by default.

To enter a Warrant or Certificate trade, you can enter trade details or use the speed entry panel. In any case, you can load a template to populate the fields of the Trade panel.

Loading a Trade Template

- » Hit F10 to load a Warrant trade template. You will be prompted to select a template name.

Entering Trade Details

You can select what areas of the Trade panel you want to display. This is particularly useful if you have loaded a template and only want to modify certain areas of the trade.

- » To select areas of the Trade panel for display, choose the View menu. All menu items operate as checkboxes. Check all the menu items corresponding to the areas you want to display.

Then modify the corresponding fields described below.

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

- » Proceed to the other panels as applicable.
- » Then hit F5 to save the trade or choose **Trade > Save**.

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

Using the Speed Entry Panel

- » Choose the View menu, and check the “Speed Entry Panel Only” menu item. The Speed Entry Panel will appear. It allows specifying the trade direction, the security, the book, the nominal, the trade price, the settlement date, and the counterparty. The fields are described below.

Then click **Save** to save the trade.

You can use the other menu items of the View menu to configure the layout of the Warrant window.

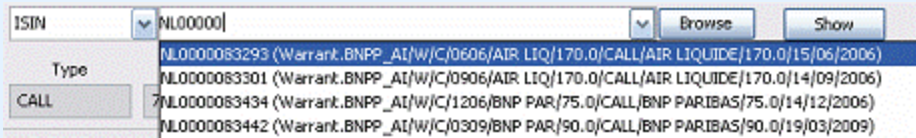
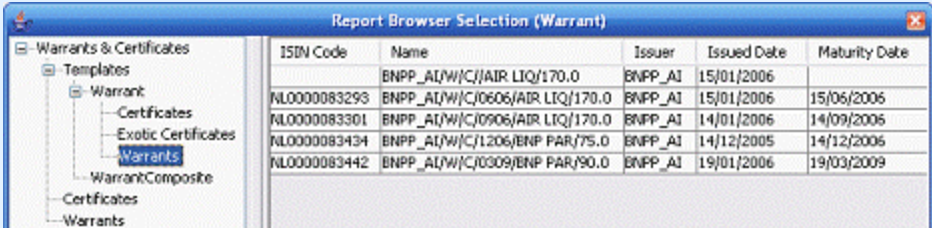
Pricing

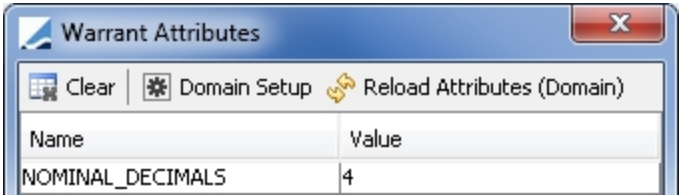
- » Click **Price** to price a trade. A warrant requires a discount curve and a quote.

Financing

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

You can also click **Finance** in the Bundle Entry area.

Fields	Description
Warrant Details	
Product Code	<p>You can select the product using one of the following methods.</p> <p>Once you have selected a Warrant or a Certificate, the value of the alternative product code is displayed in the field adjacent to the Browse button. The alternative product code is specified in the attributes of the User Defaults.</p> <p>You can click Show to view the details of the selected product.</p> <p>Product Code Selection</p> <p>Select a product code and type in a few characters of the code value in the adjacent field. The products that satisfy the request will be displayed as shown below.</p>  <p>» Select a product from the list.</p> <p>The product code defaults to the security code specified in Calypso Navigator > Configuration > User Access Control > User Defaults. You can specify as many product codes as applicable.</p> <p>If the environment property USE_SUBSTRING_IN_BOND_NAME_QUERY is True, it will search anywhere in the product name. Otherwise, it will only search from the start of the product name.</p> <p>If you have specified a quick entry template, the search will look into the products of the quick entry template.</p> <p>Browser Selection</p> <p>Click Browse to select a product from a user-defined product browser as shown below.</p>  <p>» Click a report template to display the corresponding products, and select a product from the list.</p> <p>» Right-click any column and choose Configure Columns to configure the columns. You can also choose Configure Sort and Set Column Names.</p>
Product Description	
Id	

Fields	Description
	You can load an existing trade by typing into this field the trade id, the external reference or the internal reference.
Status	<p>Current status of the trade. The status is automatically assigned by the system based on the workflow configuration.</p> <p>The status will change over the lifetime of the trade according to the workflow configuration and the actions performed on the trade.</p> <p>► Refer to the <i>Calypso Workflow User Guide</i> for information on configuring the workflow and applying actions to a trade.</p>
Product Characteristics	<p>Once the product is selected, the main characteristics of the product are displayed:</p> <ul style="list-style-type: none"> – Type (Call/Put) – Strike – Issue Date – Maturity Date – Issuer Description
Trade Date	The Trade Date is displayed from the Details panel.
Trade Details	
Buy / Sell	<p>Select Buy or Sell as applicable to indicate the direction of the trade from the book's perspective.</p> <p>You can switch between Buy and Sell using the space bar.</p>
Quantity	<p>Enter the quantity of warrants to trade.</p> <p>You can adjust the number of decimals, up to 8, using the attribute NOMINAL_DECIMALS. Default is 2. Warrant attributes are defined at the product level - On the Issuer/Info panel, click Attributes.</p> 
Price	Enter the price negotiated.
Settle Date	<p>On Primary/Gray Markets (i.e., if the Trade Date is before the Issue Date of the product), the settlement date defaults to the Primary Value Date specified in the product.</p> <p>On Secondary Market, the settlement date defaults to the trade date + the number of settle days specified in the product.</p> <p>The settlement date uses the holiday calendar of the product's market place to identify business days.</p>

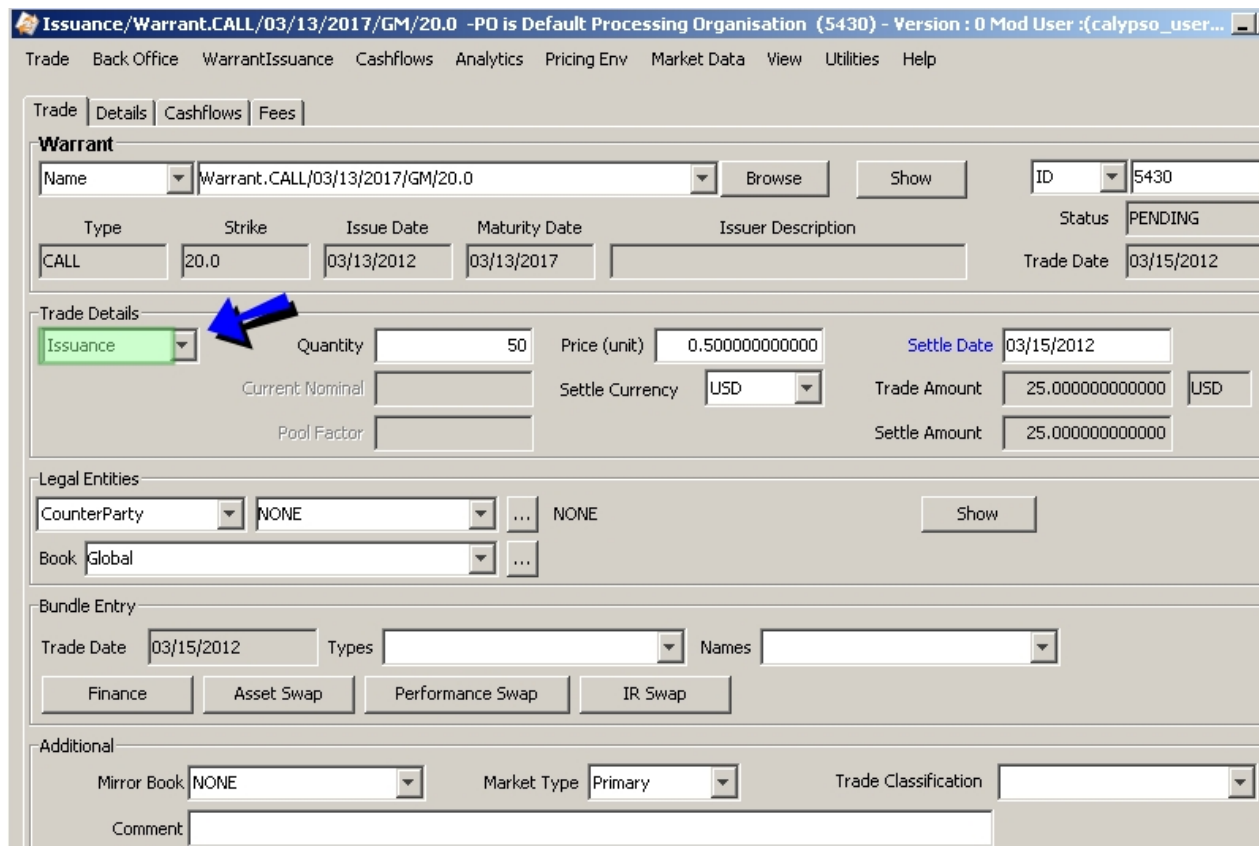
Fields	Description
	If you change the trade date, double-click the Settle Date label to update the settlement date accordingly.
Current Nominal	Currently not used.
Settle Currency	The settlement currency defaults to the product's currency. Modify as applicable.
Trade Amount	Calculated from the quantity and price. The adjacent field displays the product's currency.
Pool Factor	Currently not used.
Currency Quote	This field is enabled if the Settle Currency is different from the product's currency. Click the currency pair to obtain the last known quote. The adjacent field displays whether the quote Multiplies or Divides the trade amount. Modify as applicable.
Settle Amount	Calculated from the Trade Amount and the Currency Quote.
Legal Entities	
Legal Entity	The trade counterparty will control the settlement and delivery instructions of the trade. 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. 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. You can choose Utilities > Selected CounterParty Info to show the Legal Entities Window for the selected trade counterparty, or click Show .
Broker	The first field identifies the legal entity role. The default role is Broker . Click ... to select the broker in the Legal Entity Chooser, or enter the legal entity short name in the field. Click Show to open the Legal Entity window for the selected trade broker.
Book	Trading book to which the trade belongs. Defaults to the book selected in Calypso Navigator > Configuration > User Access Control > User Defaults . You can modify as applicable. You can select a book you that have setup as favorite books in Utilities > Configure favorite books or by clicking The processing organization of the book identifies the processing organization of the trade.
Bundle Entry	
Bundles are created using Calypso Navigator > Configuration > Books & Bundles > Trade Bundle .	

Fields	Description
	You can finance the trade, capture an asset swap, capture a performance swap, or capture an IR swap by clicking the corresponding button.
Trade Date	The Trade Date is displayed from the Details panel.
Types	You can select a bundle type.
Names	You can select a bundle.
Finance	Click Finance to enter a related repo trade. If the product belongs to a bundle, the repo trade will be added to the bundle as well.
Additional	
Mirror Book	<p>Select a mirror book if you want to mirror the current trade.</p> <p>You can select the mirror trader from the Details panel.</p> <p>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.</p> <p>Do not forget that this functionality doesn't handle the mirroring with the issuance product which is managed with a workflow rule. See Workflow: Mirroring.</p>
Market Type	<p>Defaults to the market type selected in Calypso Navigator > Configuration > User Access Control > User Defaults.</p> <p>You can modify as applicable.</p> <p>Market types are created in the <i>Warrant.marketType</i> domain. If this domain does not exist, the values belong to the <i>marketType</i> domain.</p>
Trade Classification	<p>You can select a classification for the trade as applicable. This classification is for informational purposes only.</p> <p>It is stored in the trade keyword "TradeClassification", and available values can be set in domain keyword <i>TradeClassification</i>.</p> <p>It can be used in filters to filter trades for various processes, and can be viewed in reports throughout the system.</p>
Comment	Enter a free-form comment as applicable.

7. Issuing Warrants and Certificates

Choose **Trade > Equity > Warrant/Certificate Issuance** to open the Warrant Issuance Trade window from Calypso Navigator or from a Trade Blotter.

The Warrant Issuance Trade window is very similar to the Warrant Trade window. The main difference is the direction: **Issuance/Closing** (instead of Buy/Sell).



[Sample Warrant Issuance Trade](#)

► See [Capturing Warrants and Certificates](#) for details.

The other differences between the Warrant Issuance Trade window and Warrant Trade window:

- There is no History Panel.
- In the Legal Entities section, there is only one field for specifying a Legal Entity, as opposed to the two fields in the Warrant Trade.

The transfers of the warrant/issuance trades are automatically set to DFP.

You can use the domain "Warrant_mono_Currency_support" with Value = true to force transfers to be DAP for warrant/issuance trades.

8. Issuance Mirroring

► See [Workflow: Mirroring](#) for the setup details.

Trading a Warrant or a Certificate with the Issuer can automatically generate the corresponding issuance trade. The workflow rule **IssuanceMirror** can be setup on each transition of the workflow where both trades have to work symmetrically. The transition must be the same on both workflows (i.e., same Orig Status, Result Status and Action).

The workflow rule can be setup on the workflow related to the Issuance products (WarrantIssuance, CertificateIssuance) or on the workflow related to the products (Warrant, Certificate), but never on both workflows.

Saving a trade using a workflow which has the rule IssuanceMirror generates a second trade. They are linked together:

- The “source” trade has the system keyword **issuanceMirrorTold** initialized with the “result” trade Id.
- The “result” trade has the system keyword **issuanceMirrorFromId** initialized with the “source” trade Id, and its comment mentions that this trade was created by a workflow rule.

Comment: Trade Mirrored by Workflow Rule from trade id = 2001

9. Generating Corporate Actions for Warrants

Several events can occur in the life of Warrants and Certificates:

- **Mark-Up:** The issuer increases the size of its issuance. It will be captured as a new trade similar to an issuance.
- **Mark-Down:** The issuer decreases the size of its issuance. It can be captured as a closing trade on the issuance product. Calypso also allows for generation of these trades with a Corporate Action.
- **Expiry:** At maturity, if the product is “out the money” (i.e., the underlying does not reach the strike), a Corporate Action will close all liquidated positions and inventory positions on the related product.
- **Exercise:** When the product is “in the money”, the issuer can totally or partially close its issuance and pay performance or/and deliver the underlying product to the owners of the Warrants. A Corporate Action will close all liquidated positions and inventory positions, and will create a transfer for the payment of the performance and/or a new trade for the buy/sell of the underlying product.
- **Assignment:** Once the underlying product reaches the strike of the Warrant, each owner can assign the issuer in order to receive the performance and/or the underlying product. A Corporate Action on the issuance product will close all positions, and will create a transfer for the performance and/or a trade on the underlying product.
- **Barrier Deactivation:** Once the strike is reached, the product is deactivated. It is not tradable anymore. At maturity, a Corporate Action will close all positions and will create a transfer for the performance and/or a trade on the underlying product.
- **Strike / Parity / Name / ISIN change:** The product can be updated in the Static Data. But if accounting events are needed, a new product will be created, and a Corporate Action will transfer all positions from the old product to the new one.
- **Maturity Date change:** The product is updated in the Static Data and the new maturity date is propagated to the trades using the Process Trade.
- **For warrants in which dividends are passed,** a Corporate Action will be created on the dividend ex-date. This only applies to warrants with an equity as an underlying.
- **Coupons on Certificates:** Use the same Corporate Action used for Bonds.

Exercising European Warrants

If the domain “Allow_Warrant_Exercise_On_Any_Date” does not exist or is empty, European Warrants cannot be exercised before Maturity. If it contains Value = true, Warrants can be exercised on any date.

9.1 Creating Corporate Actions

Choose **Trade Lifecycle > Corporate Action > Corporate Action** to open the Corporate Action window as shown below.

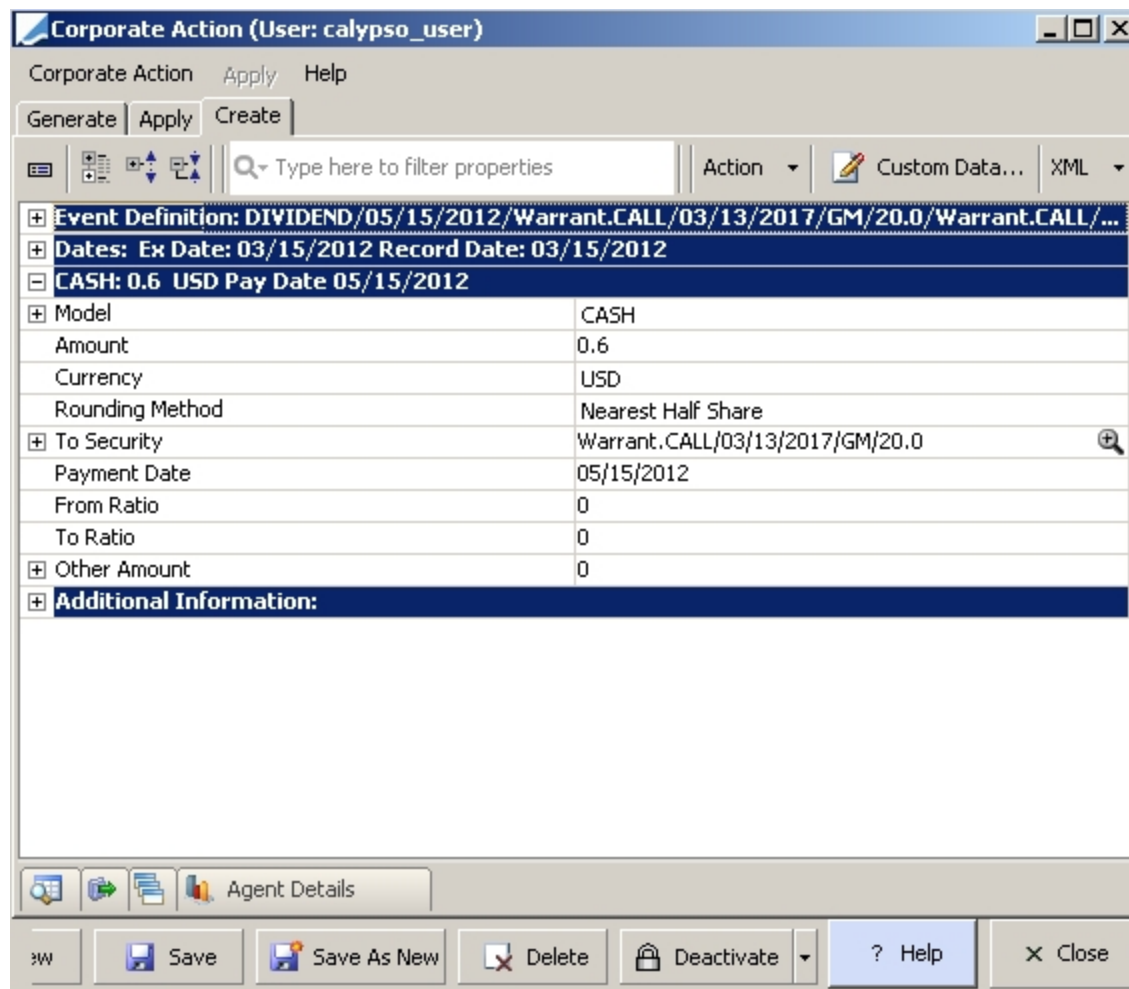
For coupons on certificates, the Corporate Actions can be automatically generated.

► Refer to *Calypso Corporate Actions* documentation for details.

Otherwise, you can define the Corporate Actions manually, as described below.

To define a Corporate Action, choose **Calypso Navigator > Trade Lifecycle > Corporate Action > Corporate Action** and select the Create panel as shown below.

When capturing a Corporate Action on a Warrant or a Certificate, if an issuance position exists on this product, a second Corporate Action is automatically created on the Issuance product. The opposite is not true when capturing a Corporate Action on an Issuance product.



Corporate Action (User: calypso_user)

Corporate Action Apply Help

Generate Apply Create

Q Type here to filter properties Action Custom Data... XML

+ Event Definition: DIVIDEND/05/15/2012/Warrant.CALL/03/13/2017/GM/20.0/Warrant.CALL/...

+ Dates: Ex Date: 03/15/2012 Record Date: 03/15/2012

- CASH: 0.6 USD Pay Date 05/15/2012

+ Model	CASH
Amount	0.6
Currency	USD
Rounding Method	Nearest Half Share
+ To Security	Warrant.CALL/03/13/2017/GM/20.0
Payment Date	05/15/2012
From Ratio	0
To Ratio	0
+ Other Amount	0
+ Additional Information:	

Agent Details

Save Save As New Delete Deactivate ? Help X Close

Sample Warrant Corporate Action

- » To define a Corporate Action on a Warrant or a Certificate, enter the fields described below.
- » See Option Corporate Action below for delivery options for Corporate Actions.
- » Then click **Save**.

Fields Details

Fields	Description
Product	Select a Warrant or a Certificate from the product chooser
Model	<p>Select the model:</p> <p>EXERCISE: The product is "in the money". Cash performance could be paid and underlying product could be delivered. The Warrant positions are closed.</p> <p>EXPIRY: The product is "out the money". The Warrant positions are closed.</p>
Sub Type	<p>Select the model's subtype.</p> <p>For model EXERCISE</p> <ul style="list-style-type: none"> EXERCISE: The Corporate Action is related to the product and its issuance (if relevant). ASSIGNMENT: The Corporate Action is only related to the issuance. <p>For model EXPIRY</p> <ul style="list-style-type: none"> MARK DOWN: Concerns "in house" products. The issuer decreases its issuance and reimburses the bank which provides facilities. The positions are partially or totally closed at historical price. EXPIRY: The product reaches the Maturity date. The positions are reversed to zero. BARRIER DEACTIVATION: Once the underlying product reaches the Strike, the Warrant is deactivated. The positions are reversed to zero. MDE: With MDE (Market Disruption Event), a series of Corporate Actions will be created to roll the expiry according to the default adjustment rule. <p>When the IPA is defined on the WarrantIssuance product or CertificateIssuance product, the CA Option trades are generated with the counterparty role IPA instead of Agent.</p> <p>This only applies to CA Option trades EXERCISE and EXPIRY for the EXERCISE_FEE.</p>
Other fields	The other data are managed in the same way as the other Corporate Actions.

9.1.1 Option Corporate Action

Choose **Action > CA Option** to bring up the Option Corporate Action window.

Option Corporate Action : CASH/DIVIDEND (User: calypso_user)

Tools
Market Data

Option Description

Warrant.CALL/03/13/2017/GM/20.0
show

Delivery

Delivery Type
Cash

Delivery Parity
20.000000 : 1.000000

Unit Performance
.75 (Unit)

Quotes

Option Quote
0.000000000000 (Price)
☐ Use Historical Prices

Underlying Quote
185.000000000000

Adjustment Quote
185.000000000000

Delivery Quote
180.000000000000 (Price)

Partial Execution

Option Position
0

Available Position

Agent

Book

Legal Entities

Counterparty

Pricing Env
INTRADAY
Apply
Close

Option Corporate Action window

» Enter the fields described below, then click **Apply**.

Delivery Details

Fields	Description
Delivery Type	<p>Initialized by default from the product.</p> <p>It should be changed only for products which have the delivery type "Not known".</p>

Fields	Description
Delivery Parity	<p>Initialized by default from the product.</p> <p>It could be changed for products with “Mix” or “Physical” delivery.</p>
Unit Performance	<p>Enter the unit performance amount to pay, or click the heading to calculate it.</p> <ul style="list-style-type: none"> Vanilla products: $\text{Unit Performance} = \text{Abs}(\text{Underlying quote} - \text{Strike}) / \text{Parity}$ Capped Call: $\text{Unit Performance} = [\text{Min}(\text{Underlying quote}, \text{Strike2}) - \text{Strike}] / \text{Parity}$ Capped Put: $\text{Unit Performance} = [\text{Strike} - \text{Max}(\text{Underlying quote}, \text{Strike2})] / \text{Parity}$ Quantovar and quanotfixe: $\text{Unit Performance} = \text{Abs}(\text{Underlying quote} - \text{Strike}) / \text{Parity} * 1 / \text{FX rate}$ Exotic warrant and certificate: No unit performance. Barrier: $\text{Unit Performance} = \text{Abs}(\text{Underlying quote} - \text{Strike}) / \text{Parity}$ MINI: $\text{Unit Performance} = \text{Abs}(\text{Underlying quote} - \text{Strike}) / \text{Parity}$ CBBC: $\text{Unit Performance} = \text{Abs}(\text{Underlying} - \text{Strike}) / \text{Parity}$ <p>This field is not editable for products with “Physical” delivery.</p>

Quotes Details

Fields	Description
Option Quote	<p>Enter a quote when you want to close your Warrant positions at a fixed price, instead of zero.</p> <p>Click the heading to feed the field from the product quotes (at Ex Date).</p> <p>Default value is zero.</p>
Use Historical Prices	<p>Tick this checkbox when you want to close your Warrant positions at historical price. It should be used only in case of Barrier Deactivation.</p>
Underlying Quote	<p>Enter a quote which will be used to calculate the Unit Performance.</p> <p>Click the heading to feed the field from the product quotes (at Ex Date).</p> <p>This field is not editable for products with “Physical” delivery. Default value is zero.</p>
Adjustment Quote	<p>This quote will be used to value the Adjustment position.</p> <p>Click the heading to feed the field from the product quotes (at Ex Date).</p> <p>Default value is zero.</p>
Delivery Quote	<p>Enter the delivery price of the underlying product.</p> <p>This field is not editable for products with “Cash” delivery. Default value is the Strike of the product.</p> <p>You can disable the automatic population by setting the environment property AUTO_FEED_DELIVERY_QUOTE to false.</p>

Partial Execution Details

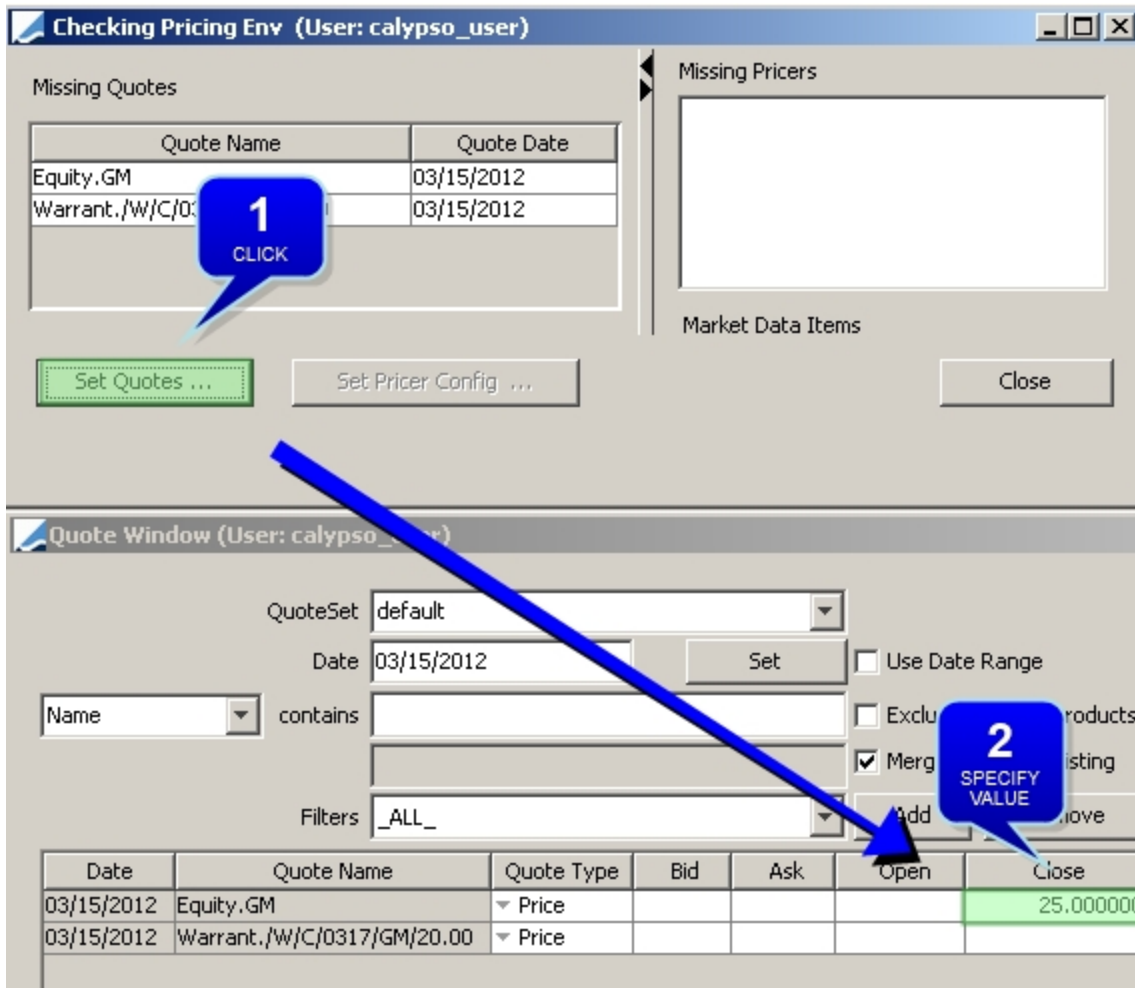
Fields	Description
Option Position	Enter a number of Warrants if you want to apply the Corporate Action to a specified quantity. Default value is zero and means that the Corporate Action is related to the whole position.
Agent	When the previous field is fed, you must capture a Corporate Action by position managed in Calypso. Enter the Agent of your Inventory Position. A click on the red heading resets the field.
Book	When the previous field is fed, you must capture a Corporate Action by position managed in Calypso. Enter the Book of your Inventory Position. A click on the red heading resets the field.

Legal Entities Details

Fields	Description
Counterparty	This field should be filled only in case of Assignment. If you need to identify it, enter the Counterparty which wants to Assign the Issuer. A click on the red heading resets the field.

Tools Menu

You can choose **Tools > Check Quotes** to check if quotes are missing (at Ex Date) on Warrants and Underlyings, and you can capture them directly by clicking **Set Quotes**.



9.2 Corporate Action Process

9.2.1 Checking for Missing Information

Prior to applying the Corporate Actions, you can run the scheduled task WARRANT_PROCESSING. It allows checking that all information is available prior to applying the Corporate Actions.

It generates exceptions for any missing information.

This only applies to expiring or knocking out CBBC and MINI warrants.

Task Type	WARRANT_PROCESSING		
External Reference			
Comments			
Description			
Attempts	1		
Retry After, In Minutes	0		
JVM Settings	-Xms512m -Xmx1024m -XX:MaxPermSize=256m		
Allow Task To	<input type="checkbox"/> Skip Execute	<input type="checkbox"/> Send Emails	<input type="checkbox"/> Publish Business
+ Common Attributes			
- Task Attributes			
Operation	Upgrade floating strike (MINI)		
Subtype	MINI		
Barrier knock-out	false		

» Set the attributes as needed.

"Operation = Upgrade floating strike (MINI)"

Only applies to the MINI subtype.

You can run the scheduled task with "Operation = Upgrade floating strike (MINI)" and "Barrier knock-out = false". If either strike or stoploss (barrier) quotes are missing, an exception is created: "strike <quote name> for warrant <description> <product id> is missing on value date <value date>".

"Operation = Warrant CA"

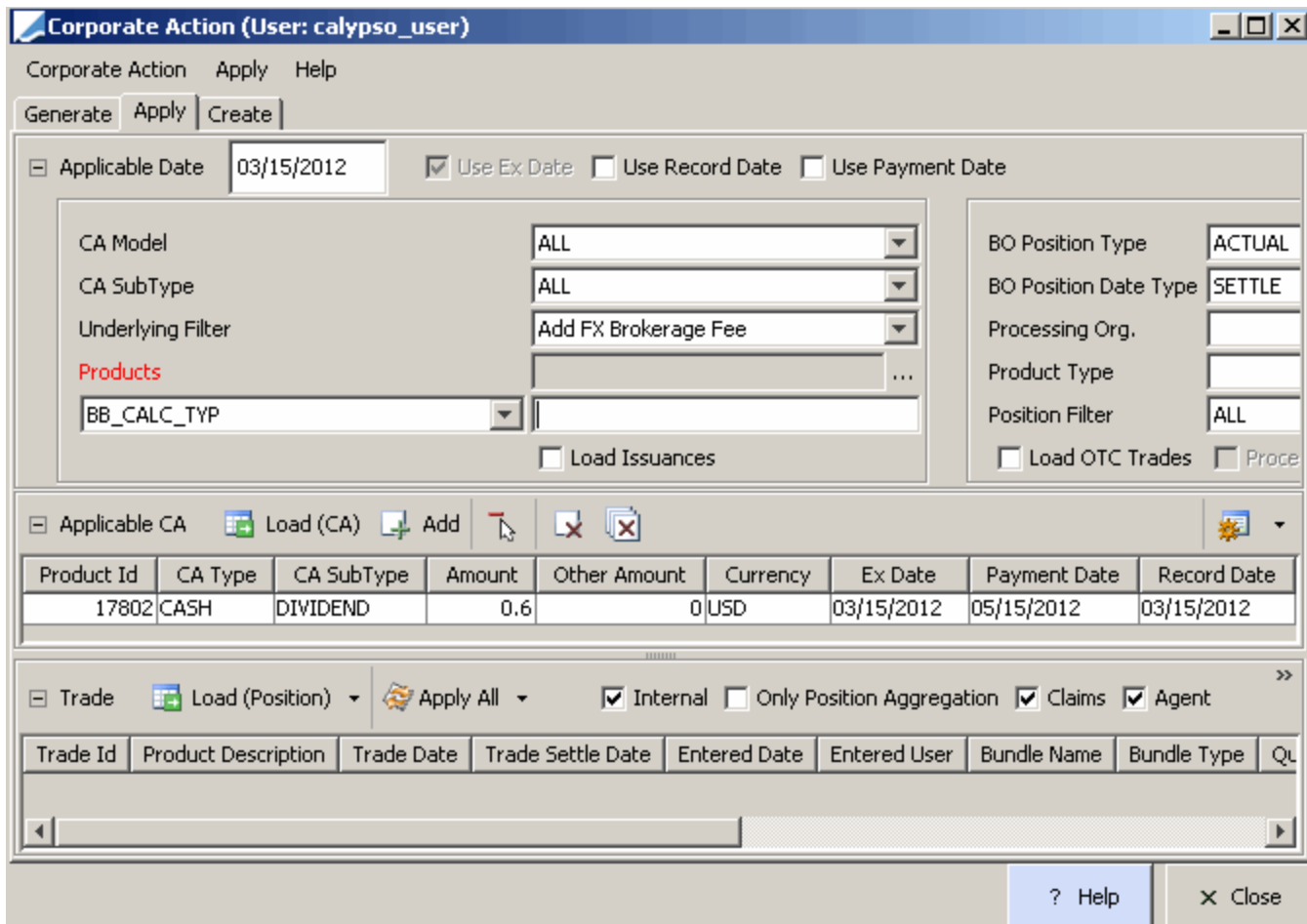
Only applies to the MINI and CBBC subtypes.

You can run the scheduled task with "Operation = Warrant CA" and "Barrier knock-out = true".

- For the MINI subtype – If either strike or stoploss (barrier) quotes are missing then an exception is created: "barrier <quote name> for warrant <description> <product id> is missing on value date <valuation date>".
- For the CBBC subtype – If session1 or session2 quotes are missing, an exception is created: "Missing <quote name1> & <quote name2> for warrant <description> <product id> are missing on value date <value date>".

9.2.2 Applying the Corporate Actions

To apply a Corporate Action, from Calypso Navigator choose **Trade Lifecycle > Corporate Action > Corporate Action** and select the Apply panel as shown below.



Corporate Action (User: calypso_user)

Corporate Action Apply Help

Generate Apply Create

Applicable Date: 03/15/2012 ☒ Use Ex Date ☐ Use Record Date ☐ Use Payment Date

CA Model: ALL
CA SubType: ALL
Underlying Filter: Add FX Brokerage Fee
Products: BB_CALC_TYP
☐ Load Issuances

BO Position Type: ACTUAL
BO Position Date Type: SETTLE
Processing Org.:
Product Type:
Position Filter: ALL
☐ Load OTC Trades ☐ Process

Applicable CA Load (CA) Add

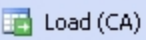

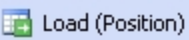
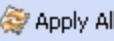
Product Id	CA Type	CA SubType	Amount	Other Amount	Currency	Ex Date	Payment Date	Record Date
17802	CASH	DIVIDEND	0.6	0	USD	03/15/2012	05/15/2012	03/15/2012

Trade Load (Position) Apply All ☒ Internal ☐ Only Position Aggregation ☒ Claims ☒ Agent

Trade Id	Product Description	Trade Date	Trade Settle Date	Entered Date	Entered User	Bundle Name	Bundle Type	QL
----------	---------------------	------------	-------------------	--------------	--------------	-------------	-------------	----

? Help X Close

Corporate Action window - Apply panel

- » Click  Load (CA) to display Corporate Actions corresponding to criteria specified in the upper section of the Apply panel. You can click  Add to add Corporate Actions using the Product Chooser Window.
- » Click  Load (Position) to retrieve the positions and compute the Corporate Action trades to be created. Positions are calculated based on transfers by the Inventory Engine.
 - Refer to the *Calypso Cash Management User Guide* for information on generating back office positions.
- » Click  Apply All to create the Corporate Action trades.

Number of Securities

Firstly, the Corporate Action process calculates the number of securities which can be processed, depending on the Expiry Size set up in the product.

$$\text{Number of expiry size lot exercised} = \text{INT} [\text{Warrant Position} / \text{expiry size}]$$

When the product is “in the money” and if the position is not a multiple of the Expiry Size, the exceeding part of the position (lost quantity) cannot participate to the Corporate Action calculations (performance and/or underlying delivered). But the whole position is closed.

$$\text{Lost Quantity} = \text{Warrant Position} - \text{Exercised Quantity}$$

Physical and mix warrant or certificate, the number of underlying securities to deliver is calculated by warrant, based on the expiry quantity.

$$\text{Delivered Quantity} = \text{INT} [\text{Parity2} / \text{Parity1} * \text{expiry size}] * \text{number of expiry size lot exercised}$$

If the Warrant position is not a multiple of the parity, a part of this position cannot be converted into the underlying product. But it often happens that the Issuer converts this part into cash.

$$\text{Adjustment Quantity} = [(\text{Parity2} / \text{Parity1} * \text{expiry size} * \text{number of expiry size lot exercised}) - \text{Delivered Quantity}]$$

When the product is “in the money”, the Issuer will pay the owner(s) as follows.

Performance

Calculated in case of “Cash” or “Mix” delivery. The Unit Performance is related to one Warrant held.

Vanilla products:

$$\text{Unit Performance} = \text{Abs}(\text{Underlying quote} - \text{Strike}) / \text{Parity}$$

Capped Call:

$$\text{Unit Performance} = [\text{Min}(\text{Underlying quote}, \text{Strike2}) - \text{Strike}] / \text{Parity}$$

Capped Put:

$$\text{Unit Performance} = [\text{Strike} - \text{Max}(\text{Underlying quote}, \text{Strike2})] / \text{Parity}$$

Quanto:

$$\text{Unit Performance} = \text{Abs}(\text{Underlying quote} - \text{Strike}) / \text{Parity} * 1 / \text{FX rate}$$

Exotic Warrant and Certificate:

No unit performance.

Compo products:

The Unit Performance is calculated in the product currency, taking into account the FX rate set up in the product.

$$\text{Performance} = \text{Exercised Quantity} * \text{Unit Performance}$$

Barrier:

Unit Performance = $\text{Abs}(\text{final reference price} - \text{Strike}) / \text{Parity}$

MINI:

Unit Performance = $\text{Abs}(\text{final reference price} - \text{Strike}) / \text{Parity}$

CBBC:

CBBC = $\text{Abs}(\text{final reference price} - \text{Strike}) / \text{Parity}$

For bull CBBC, the final reference level is the lowest of the two special quotes.

For bear CBBC, the final reference level is the highest of the two special quotes.

Adjustment Valuation

In case of "Physical" or "Mix" delivery, if the Warrant position is not a multiple of the parity, the part of the position that cannot be converted into the underlying product is valued with the underlying quote or a specific quote captured in the CA for Option panel.

Adjustment Valuation = Adjustment Quantity * Underlying Adjustment Quote

Both amounts will generate a fee linked to the closing trades.

[NOTE: Physical delivery of International Warrants is a manual process. The delivery price and currency must be provided in Corporate Action options in order for the settlement to be completed]

9.3 Expiration Process

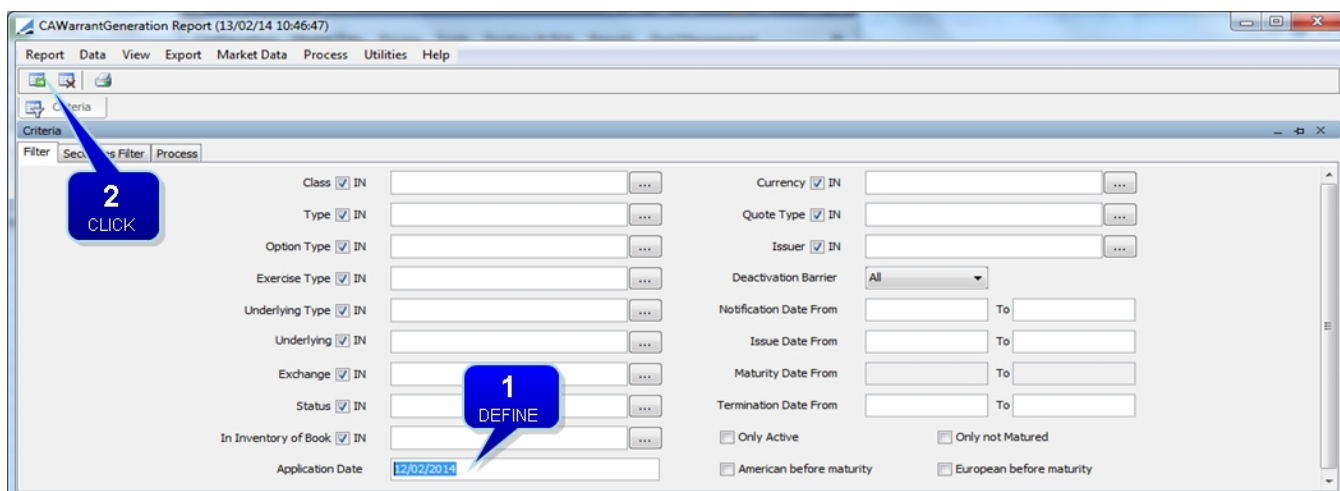
Warrant expiration can be done manually or by using scheduled tasks.

9.3.1 Manual Expiration


Generating the Corporate Action

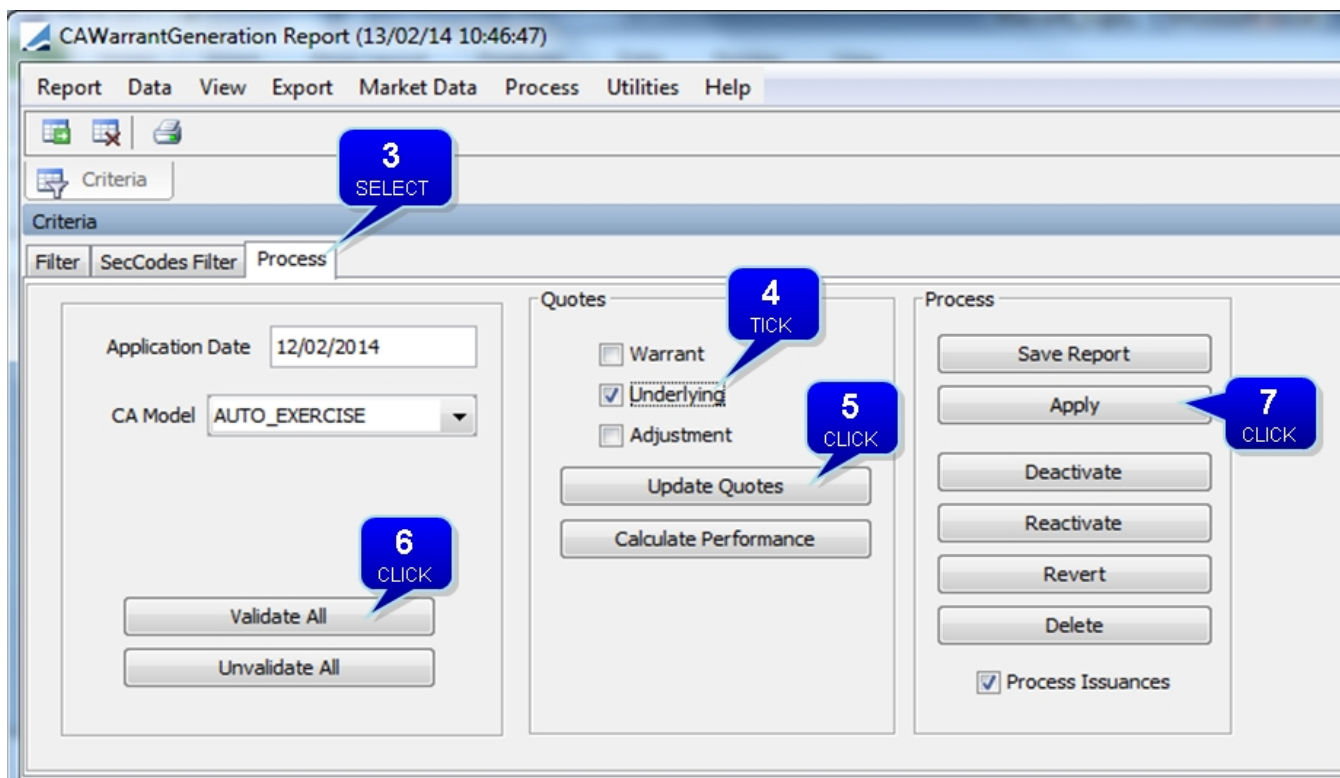
First you need to generate the Corporate Action.

Choose **Calypso Navigator > Trade Lifecycle > Corporate Action > CA Warrant Generation** to open the CAWarrantGeneration Report window.



CAWarrantGeneration Report window - Filter panel

- » Enter the expiry date in the Application Date field.
- » Click .



CAWarrantGeneration Report window - Process panel

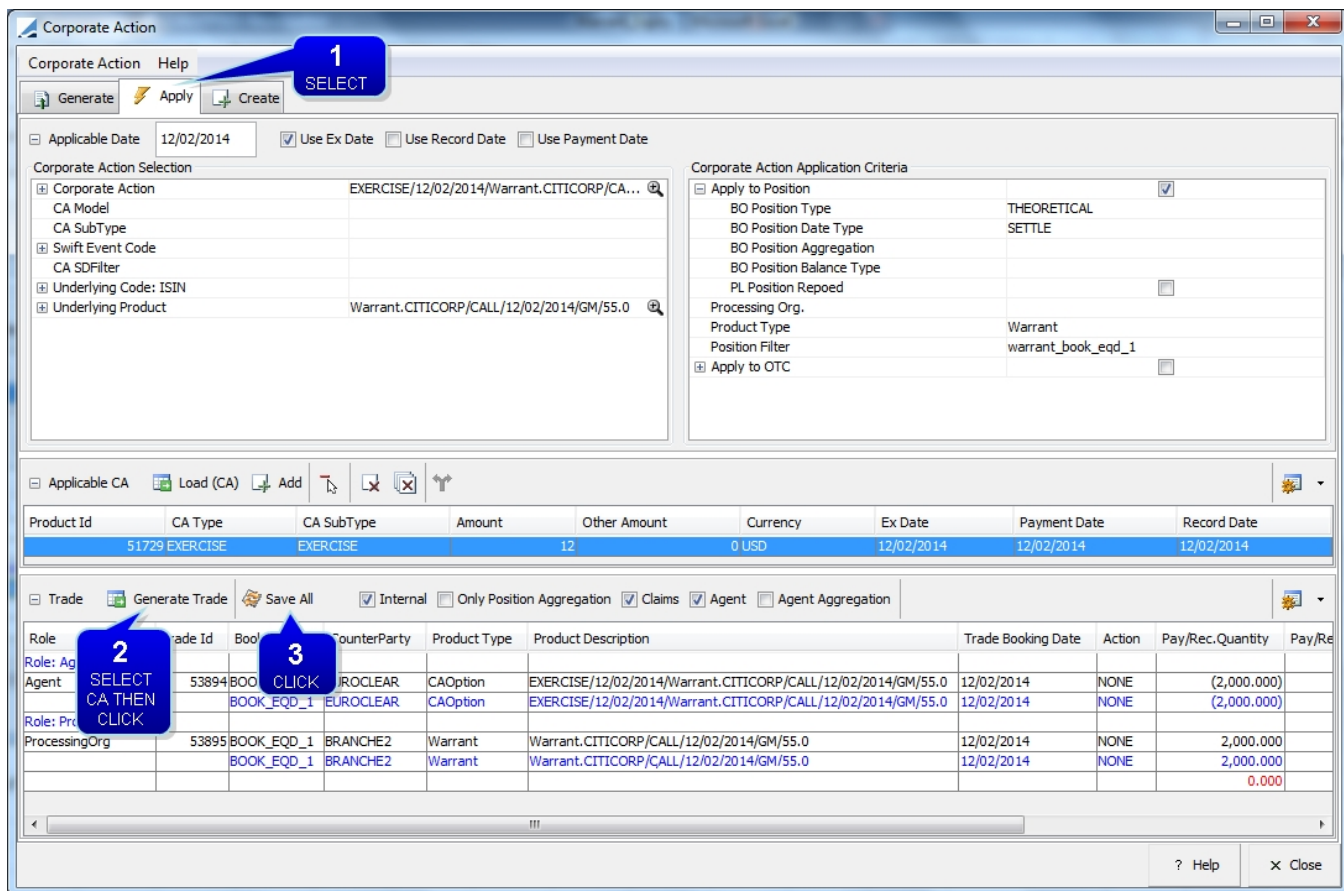
- » Select the Process panel.
- » Tick the Underlying checkbox.

- » Click **Update Quotes**.
- » Click **Validate All**.
- » Click **Apply**.

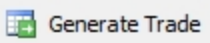

Applying the Corporate Action

After you have generated the Corporate Action, you need to apply it.

Double-click the Corporate Action to open it.

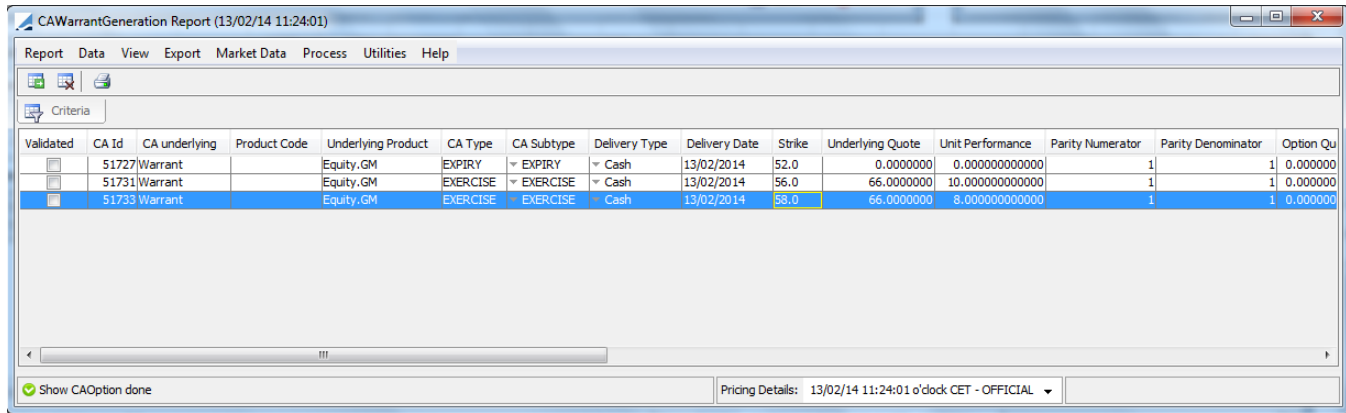


Corporate Action window - Apply panel

- » Select the Apply panel.
- » Select the Corporate Action and click .
- » Click .

9.3.2 Scheduled Task Expiration

Warrant expiration can be done with a sequence of two scheduled tasks which first generate and then apply a Corporate Action.



Validated	CA Id	CA underlying	Product Code	Underlying Product	CA Type	CA Subtype	Delivery Type	Delivery Date	Strike	Underlying Quote	Unit Performance	Parity Numerator	Parity Denominator	Option Qu
	51727	Warrant		Equity.GM	EXPIRY	EXPIRY	Cash	13/02/2014	52.0	0.00000000	0.00000000000000	1	1	0.000000
	51731	Warrant		Equity.GM	EXERCISE	EXERCISE	Cash	13/02/2014	56.0	66.00000000	10.00000000000000	1	1	0.000000
	51733	Warrant		Equity.GM	EXERCISE	EXERCISE	Cash	13/02/2014	58.0	66.00000000	8.00000000000000	1	1	0.000000

Generated Corporate Action

- » Open the Scheduled Task Definition window and define a WARRANT_PROCESSING scheduled task with Task Attributes as shown below.

Task Attributes	
Operation	Warrant CA
Subtype	TradingWarrant
Barrier knock-out	

- » Run the scheduled task to generate the Corporate Action.
- » Then define a CORPORATE_ACTION scheduled task.
 - The MODEL and CATYPE Task Attributes both need to be set to EXERCISE.
 - Set the other Task Attributes as needed. An example is shown below.

Task Attributes	
MODEL	EXERCISE
CATYPE	EXERCISE
CA SD FILTER	
PRODUCT_ID	
CA PROCESS DATE	Ex Date
Non-Business Day Process	
Optimize Product Load	false
Only CA Product Process	
Only CA Trades Process	
CAID	
POSITION_PROCESS	true
BO_POSITION	
BO_POSITION_DATE	
BO_POSITION_AGGREGATION_TYPE	
BO_POSITION_BALANCE_TYPE	
POSITION Trade Filter	warrant_book_eqd_2
InitDate	
PL_POSITION_REPOED	
OTC_PROCESS	
OTC Trade Filter	
STRUCTURED_PROCESS	
Apply to basket	false
BACK VALUE PROCESS	
BACKVALUE_CADAYS	
THREAD COUNT	

» Run the scheduled task to apply the Corporate Action.