Nasdaq Calypso

Portfolio Swaps

Version 18

Revision 2.0

December 2024

Approved

© December 2024 Nasdaq, Inc. All Rights Reserved.

Private and Confidential

Copyright © December 2024, Nasdaq, Inc. All rights reserved.

All content in this document is owned, or licensed, by Nasdaq, Inc. or its affiliates ('Nasdaq'). Unauthorized use is prohibited without written permission of Nasdaq.

While reasonable efforts have been made to ensure that the contents of this document are accurate, the document is provided strictly "as is", and no warranties of accuracy are given concerning the contents of the information contained in this document, including any warranty that the document will be kept up to date. Nasdaq reserves the right to change details in this document without notice. To the extent permitted by law no liability (including liability to any person by reason of negligence) will be accepted by Nasdaq or its employees for any direct or indirect loss or damage caused by omissions from or inaccuracies in this document.

Document History

Revision	Published	Summary of Changes
1.0	February 2024	First revision for version 18.
2.0	December 2024	Second revision for version 18 - Added support for compounded cashflows on funding leg and Funding reset tagged to settle date of PFS.

Table of Contents

1. Portfolio Swap Definition 4
1.1 Overview 4
1.2 Defining a Portfolio Swap Contract 4
1.2.1 Loading an Existing Portfolio Swap 5
1.2.2 Creating a New Portfolio Swap Contract 6
1.3 Specifying Equity Leg Details 12
1.4 Specifying Funding Leg Details 14
1.5 Country Grid 17
1.6 Lifecycle Actions 19
1.7 Cash Collateral 20
1.8 Extending the Maturity Date of the Contract 21
2. Capturing Portfolio Swap Trades 23
2.1 Sample Portfolio Swap Trade 23
2.2 Specifying Additional Details 29
2.3 Capturing Trade Fees 30
2.4 Generating Cashflows 32
2.4.1 Cashflows Menu 32
2.4.2 BASIC INTEREST 34
2.4.3 FUNDING CHARGE 35
2.4.4 BORROW CHARGE 36
2.4.5 PERFORMANCE FLOWS 36
2.4.6 DIVIDEND FLOWS 37
2.5 Portfolio Swap Trade Allocation 37
2.6 Portfolio Swap Mirror Trades 38
2.7 Portfolio Swap Corporate Actions 39
3. Position Valuation Report 40

1. Portfolio Swap Definition

1.1 Overview

A portfolio swap is an agreement between a buy-side and sell-side institution that helps standardizing the handling of equity swaps. For swaps within the portfolio, the performance and financing resets occur at the same time. Portfolio swaps provide synthetic long or short exposure that is equivalent to buying and short selling a basket of shares on margin.

Positions

A portfolio swap allows a client to trade in and out positions within the swap, and do so any number of times during the lifetime of the contract. The swap is dynamic; therefore, its positions will increase or decrease based on trading activity booked to the swap. A client may, at any time, unwind any of its positions with the portfolio, or its entire portfolio. The liquidation method is part of the pre-agreed information in the portfolio swap contract.

Portfolio swaps settle in a pre-agreed currency. So, for example, a client could set up a UK Portfolio Swap settling in GBP, or a German and French portfolio settling in EUR. A portfolio swap is traditionally a long dated instrument, often with a duration between two and seven years.

Once a Portfolio Swap on a specific underlying security is open, regardless of whether it is held long or short, the holder can add additional quantities (trades) of the same underlying security at a market price. At any time, a swap holder can partially or fully terminate/liquidate the position. Any trade that is in the opposite direction (BUYS and SELLS) of the underlying position will result in a close out/liquidation. Close-out trades are matched against one or more open trades using the relevant liquidation method (defined in the contract).

The contract and the underlying security will be part of the basic liquidation criteria. Therefore, there will be one position per contract, underlying security and book. The liquidation gives rise to realized trading gains or losses if the open price and close price are different. The same liquidation method is used for all individual trades booked under the same contract.

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

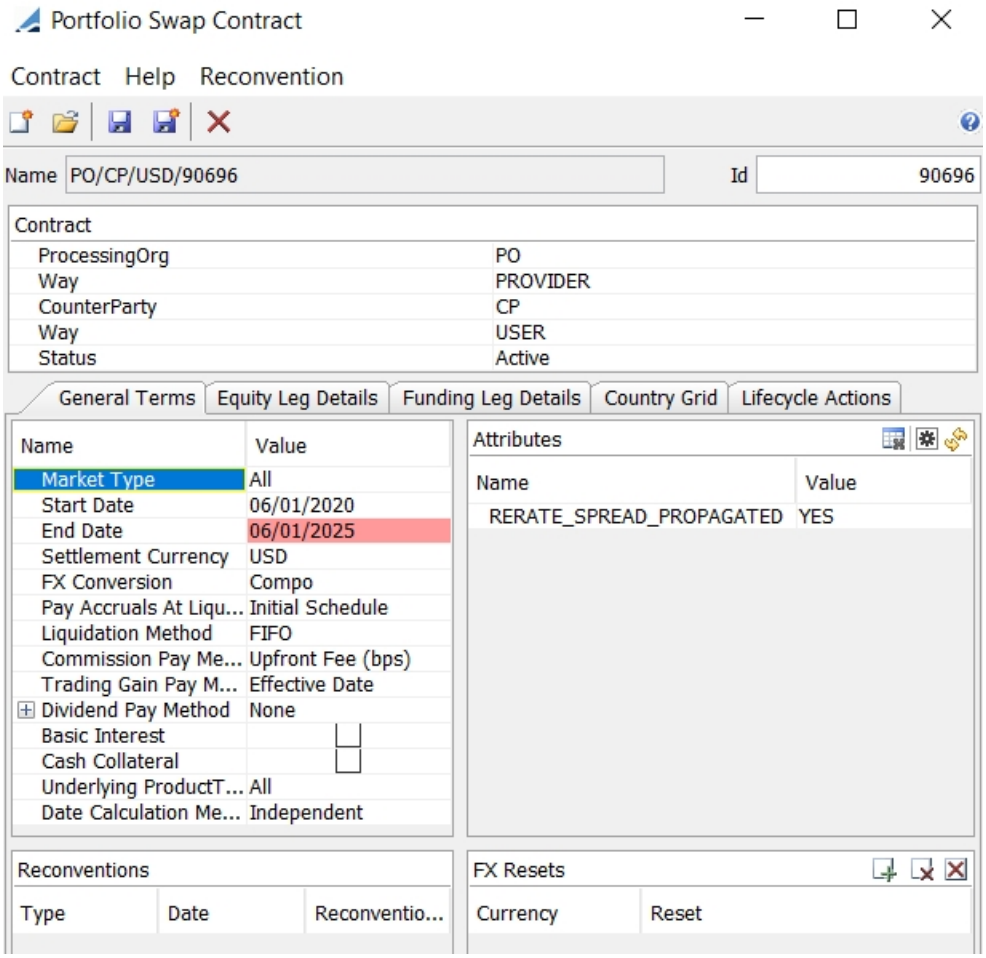
Access Permissions

The Portfolio Swap access permissions include:

- ViewPortfolioSwapContract: Portfolio Swap Contract viewing restriction
- ModifyPortfolioSwapContract: Portfolio Swap Contract editing restriction

1.2 Defining a Portfolio Swap Contract

From Calypso Navigator choose **Configuration > Equity > Portfolio Swap Contract** (menu action `refdata.PortfolioSwapContractWindow`) to open the Portfolio Swap Contract window.

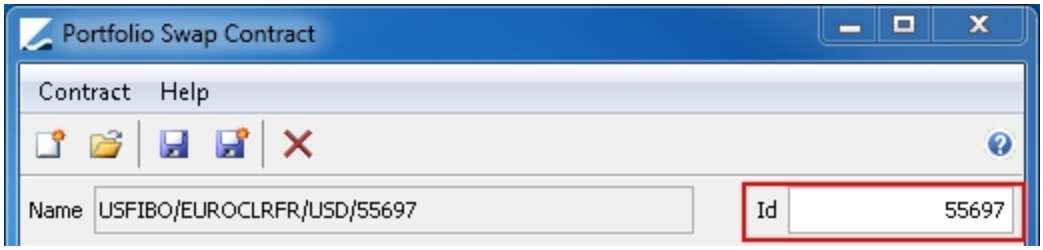


Sample Portfolio Swap Contract

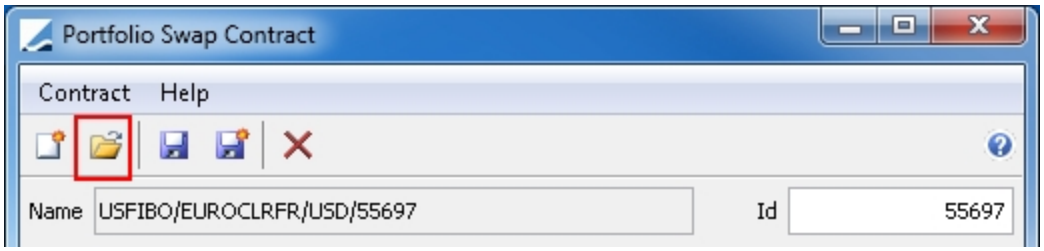
1.2.1 Loading an Existing Portfolio Swap

You can load an existing portfolio swap in the Portfolio Swap Contract window using one of the following methods:

» Enter a value in the Id field.



» You can also click to view a list of the saved portfolio swaps.



1.2.2 Creating a New Portfolio Swap Contract

» Click and configure the fields described in the table below.

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

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

Duplicate Contracts

While saving a new contract, the system can be configured to check if a similar contract already exists. You need to define the fields to be checked in the domain “duplicateContractFields” – The fields can be StartDate, EndDate, ProcessingOrg, CounterParty, SettlementCurrency, MarketType, FXConversion, PayAccrualsAtLiquidation, LiquidationMethod, CommissionPayMethod, TradingGainPayMethod, DividendPayMethod, CashCollateral.

If an existing contract has the same values for these fields, a warning is displayed and you can choose to create the new contract or not.

Contract Details

Fields	Description
Processing Org	Select the processing organization. The processing organization is a legal entity with the role ProcessingOrg.
Way	Choose PROVIDER or USER. The provider receives trading commissions on buy and sell trades. The user pays the trading commissions. Each contract must have one provider and one user.
Counter Party	Select the counterparty of the contract.
Status	Select Active or Inactive. You can only capture trades against Active contracts.

[NOTE: It is possible to have multiple contracts between the same processing organization and counterparty during a particular period of time]

General Terms Field Details

Fields	Description
Market Type	Select a particular market type or ALL. Selecting a particular market type enables the Location field and provides an option for specifying values. • All - Any security can be traded under the contract. • Exchange - Only the equities of the exchanges defined in the Location field can be traded under the contract. • Country - Only the equities of the countries defined in the Location field can be traded under the contract. • Region - Only the equities of the regions defined in the Location field can be traded under the contract. ▶ See Regions section below for information on defining regions.
Start Date	Specify the start date of the contract.
End Date	Specify the end date of the contract.
Settlement Currency	Select the currency used for all types of settlements (Performance, Funding, Dividend, Commission, etc.). All individual trades booked under the same contract will use the same settlement currency. Usually, the settlement currency is the same as the funding rate index currency.
FX Conversion	Select the FX Conversion method for multi-currency positions (underlying security currency is different from the contract settlement currency). • Flexo - Not currently supported. • Compo: All flows, pricing, and P&L measures are provided in contract settlement currency. The FX conversion is done at each price fixing.
Pay Accruals At Liquidation	Select one of the following options: • Initial Schedule - Accruals are paid at the next payment date according to the initial payment schedule. • Effective Date - Accrual is paid on the liquidation date + the payment date lag. If you select Effective Date, please select Effective Date for Trading Gain Pay Method as well.
Liquidation Method	Select the method of liquidation to be applied on all trades/positions booked under the contract. It is recommended to use FIFO. Average Price liquidation is supported with the following constraints: • Date Calculation Method = Fixing > Payment Date

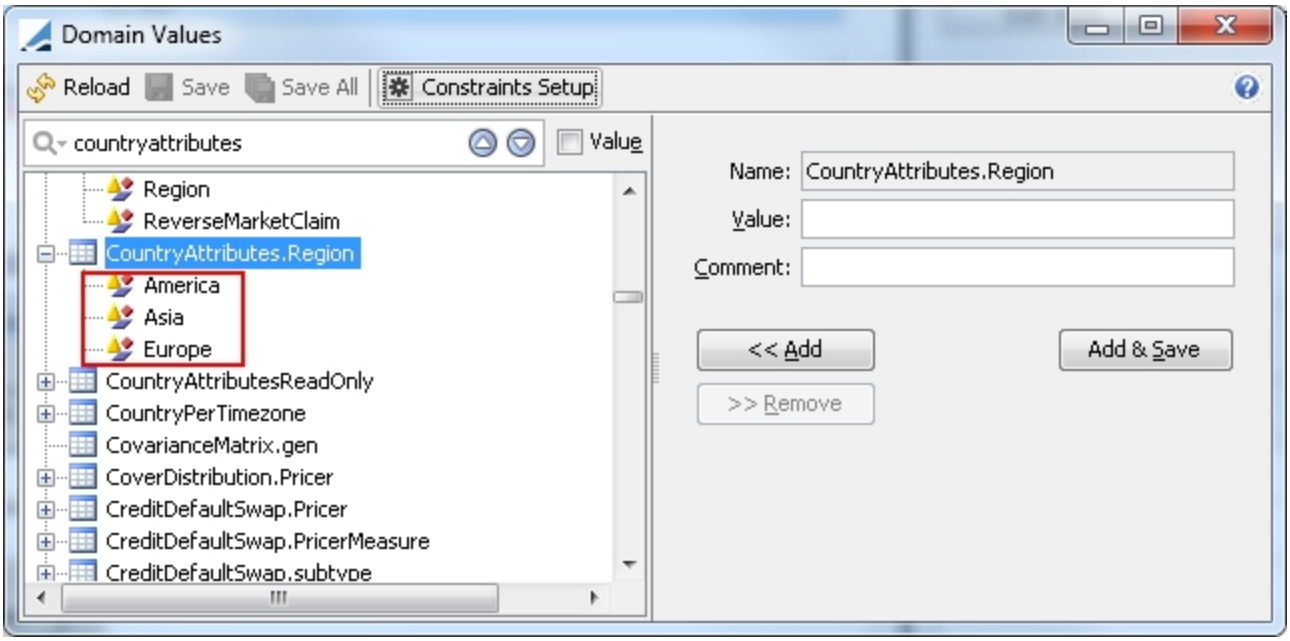
Fields	Description
	• Trade Level Spread functionality is not supported • Lag between Trade Date and Settle Date should be same across all trades
Commission Pay Method	Select the method for paying commissions to the provider of the contract. • Upfront Fee (bps) - The upfront commission fee is based on the trade notional. • Upfront Fee (amount per share) - The upfront commission fee is based on the trade quantity. • Embedded in Price (bps) - The commission fee is embedded in the funding notional of the trade. • Embedded in Price (amount per share) - The commission fee is embedded in the initial price.
Trading Gain Pay Method	Select the method for paying the trading gain. • Effective Date - Trading gain is paid on the liquidation date. • Perf Schedule - Trading gain is paid according to the performance schedule. • Funding Schedule - Trading gain is paid according to the funding schedule. • At Maturity - Trading gain is paid at the maturity of the contract.
Dividend Pay Method	Select the method for paying dividends. • None - No dividend is paid/received. • At Maturity - The dividend is paid/received upon the end date of the contract. • Perf Schedule - The dividend is paid/received on the next performance payment date following the dividend payment date. • Upon Receipt - The dividend is paid/received on the dividend pay date + Dividend Date Lag.
Basic Interest	If checked: Basic Interest charges (service charges) are paid by the user of the contract according to the funding schedule. If unchecked: no Basic Interest charges are to be paid by the user.
Cash Collateral	If checked: the Cash Collateral tab is added to the Portfolio Swap Contract window (click on the Cash Collateral tab for details). Cash collateral measures are generated for the position aggregations on the contract level. If unchecked: the Cash Collateral tab is disabled and no cash collateral measures are generated.
Underlying ProductType	You can select the type of underlying product supported for this contract or All for all product types. Available product types are specified in domain "PFSContractUnderlying".
Date Calculation Method	Select the method to determine the settlement lag: • Independent (default upon upgrade) – There is no link between the Equity leg and the Funding leg (legacy logic). • Fixing > Payment Date - Settlement Lag on Equity leg is set in Payment Date Lag field. Fixing Date Lag on Equity leg is null and not editable. Reset Lag on Funding leg is editable. Payment details on Funding leg are based on Equity leg and are not editable.

Fields	Description
	• Payment > Fixing Date - Settlement Lag on Equity leg is set in Fixing Date Lag field. Payment Date Lag on Equity leg is null and not editable. Reset Lag on Funding leg is editable. Payment details on Funding leg are based on Equity leg and are not editable.
Attributes	Click to add new attributes. Attributes are displayed in the Attributes pane. A value can be added for each attribute.
FX Resets	Enter FX Resets references for multi-currency positions.

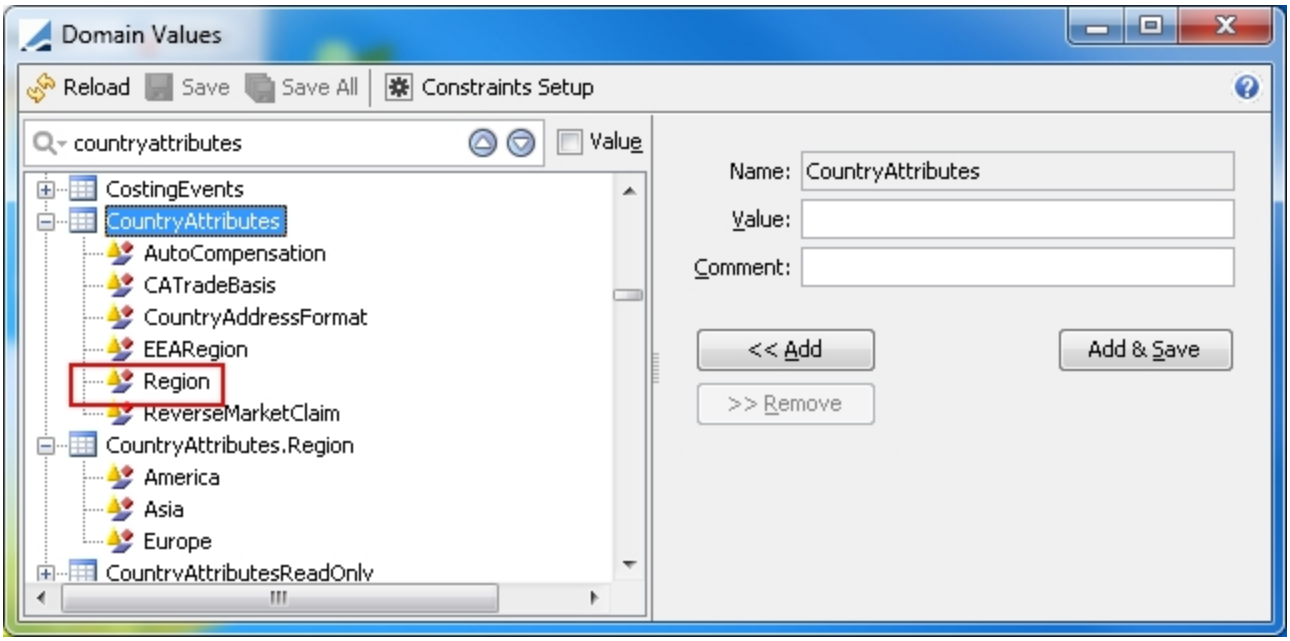
Regions

To provide region functionality to the Locations field under Market Type on the General Terms tab, perform the following steps.

Define regions under the *CountryAttributes.Region* domain, as shown below.



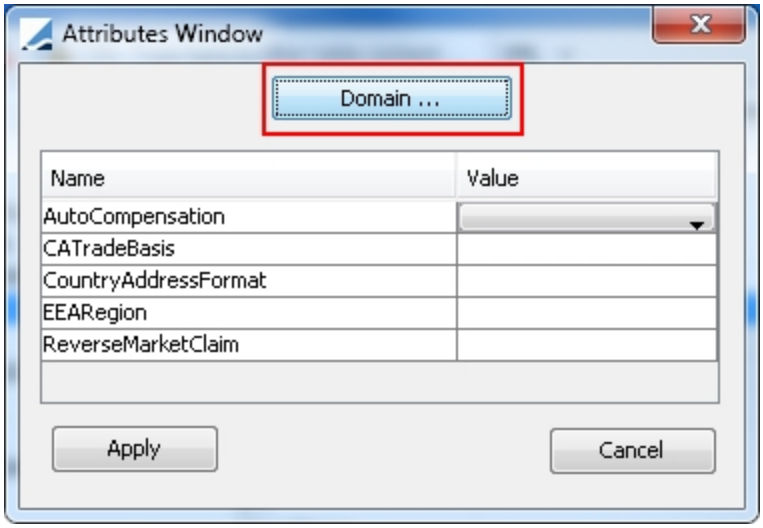
Define Region under the *CountryAttributes* domain, as shown below.



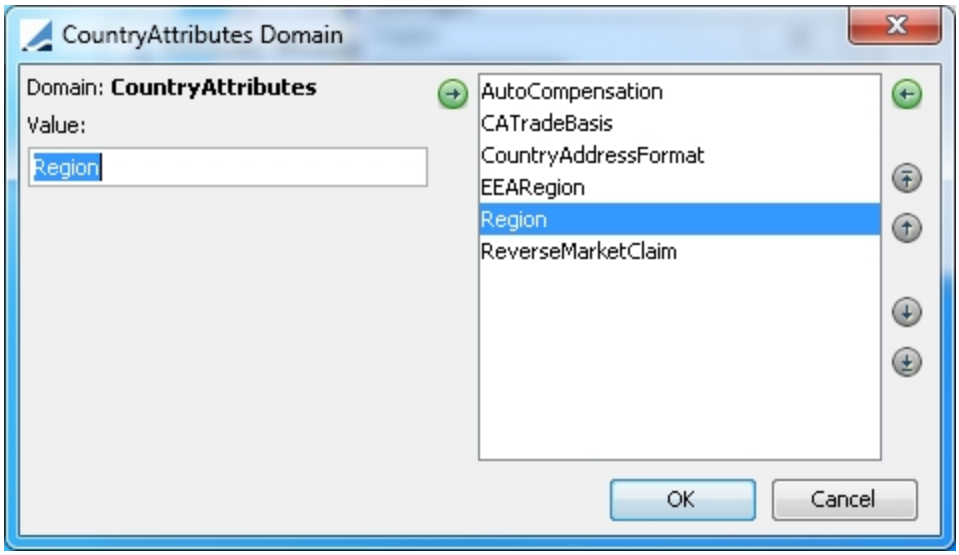
Select / configure the appropriate Region at the Country Attributes level:

From Calypso Navigator choose **Configuration > Definitions > Countries** to open the Country window.

» Click the Attribute link on the Details tab to open the Attributes Window.



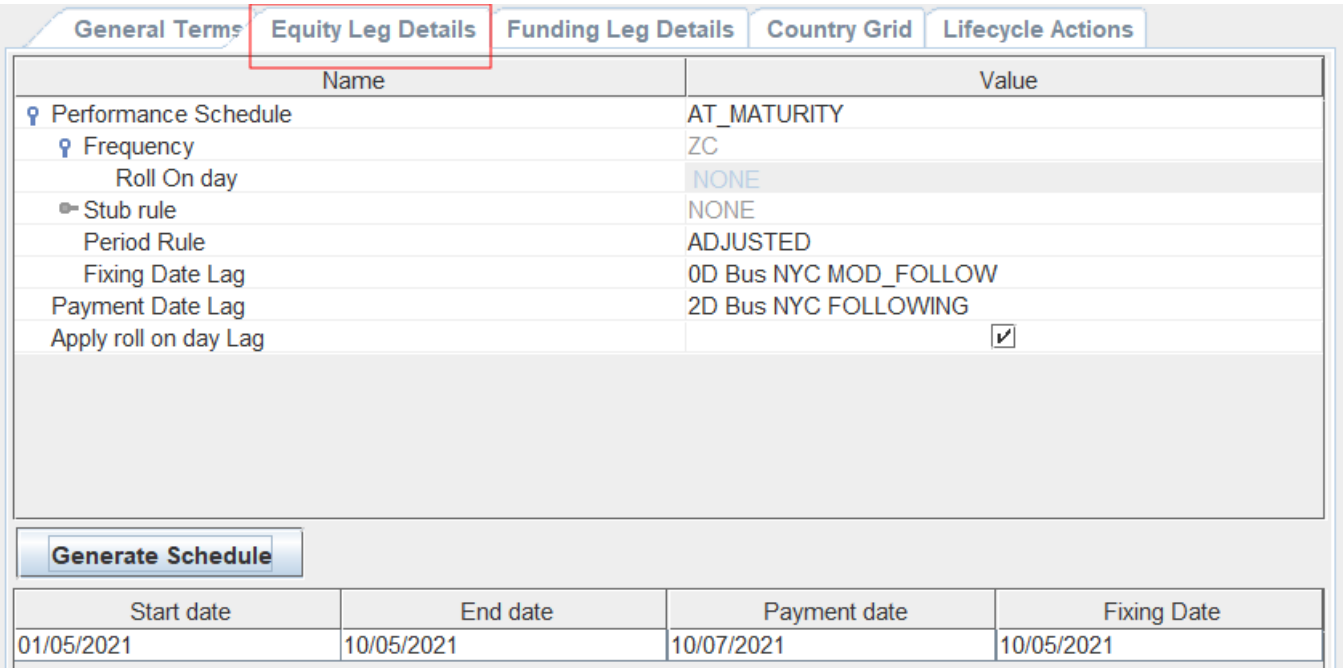
» Click **Domain ...**. The CountryAttributes Domain window opens.



Add Region to the list of attribute names and click **OK**. Pre-defined regions are now available as values in the Location field of the General Terms tab.

1.3 Specifying Equity Leg Details

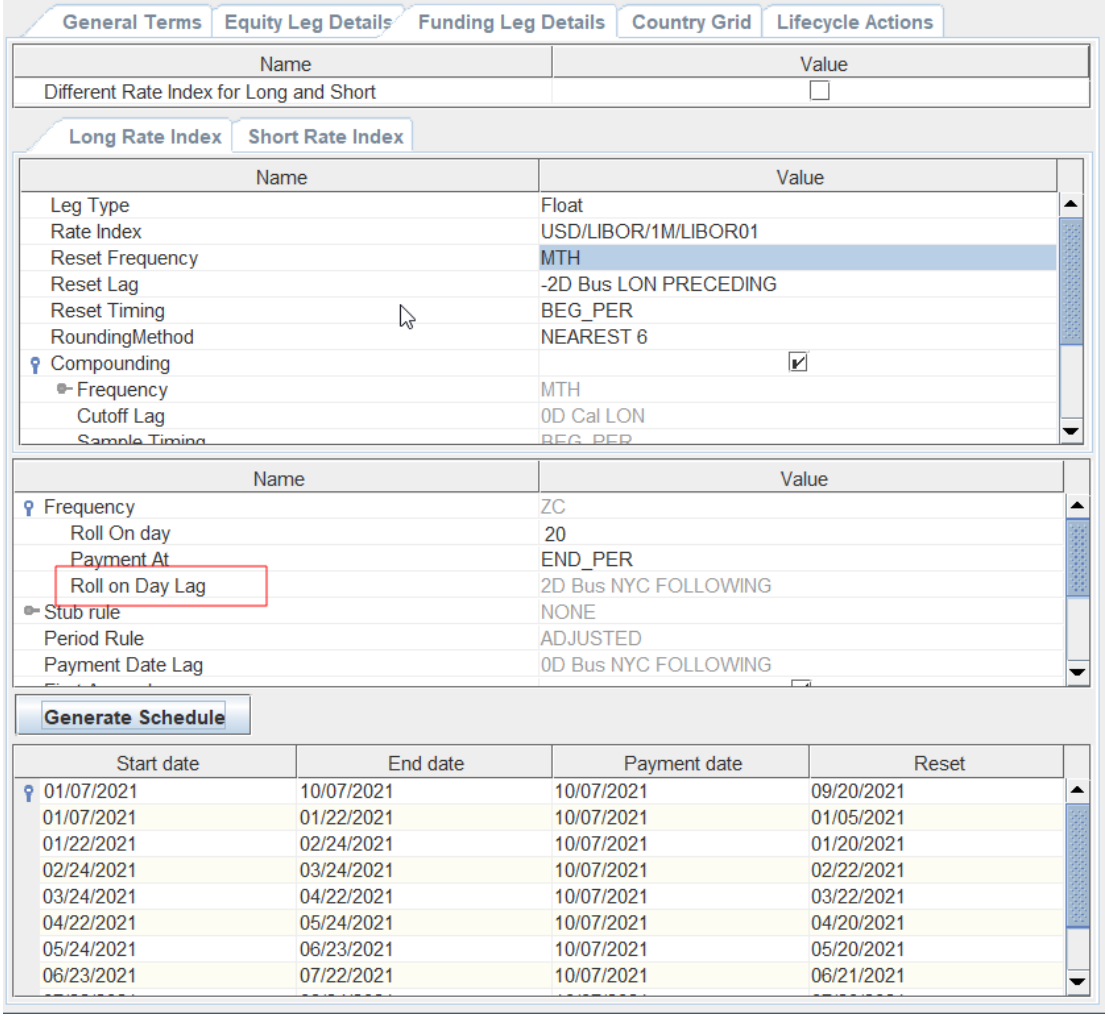
Select the Equity Leg Details tab.



- Configure the fields described in the table below as necessary.
- Click **Generate Schedule** to generate the equity leg schedule.

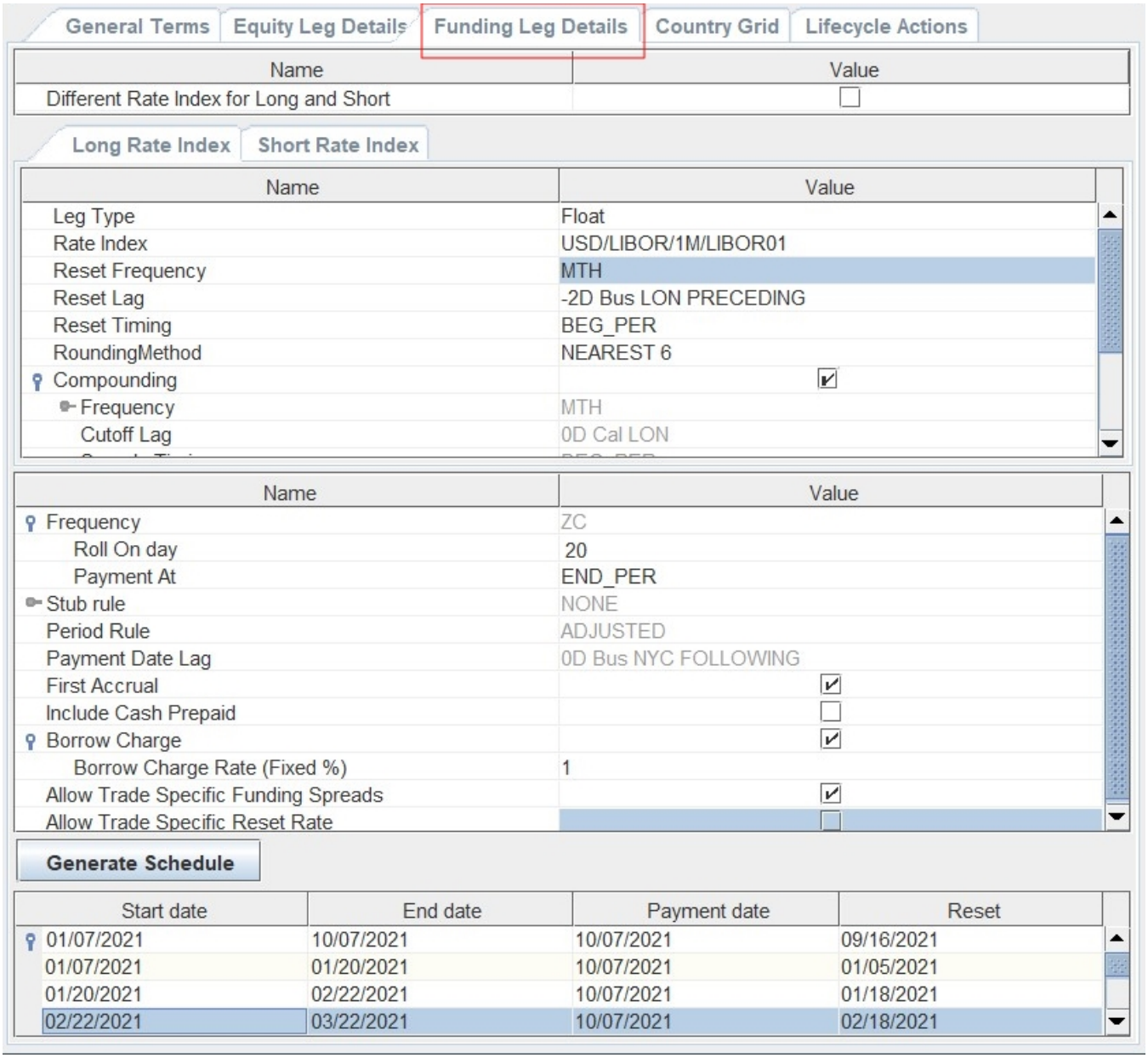
Equity Leg Details

Fields	Description
Performance Schedule	Choose the performance payoff schedule. • AT_MATURITY: The final performance payoff occurs on the end date of the contract. • CUSTOM_SCHEDULE: Configure the fields below to specify the payoff frequency. Select a payoff frequency, a roll day for weekly and monthly frequencies, stub rule, and period rule. The Period Rule can be ADJUSTED or UNADJUSTED to determine if the end date of a payoff

Fields	Description
	period is adjusted when it falls on a non-business day (applicable with BUS lag payment). Other options include FRN and MAT_UNADJUSTED. • DATE_RULE: Select a date rule for generating the payoff schedule. For the fixing date lag, the default is zero business days.
Payment Date Lag	Specify the number of days to offset the payment, whether the payment is based on business or calendar days, holidays, and date roll.
Apply roll on day Lag	When Apply roll on day Lag on Cmp Cashflows checkbox is 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 and a new field of Roll on Day Lag will be visible on the funding leg below Roll on Day. 

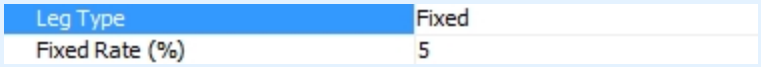
1.4 Specifying Funding Leg Details

Select the Funding Leg Details tab and keep the new field "Different Rate Index for Long and Short" unchecked (default behavior).



- Configure the fields described in the table below as necessary.
- Click **Generate Schedule** to generate the funding leg schedule.

Funding Leg Details

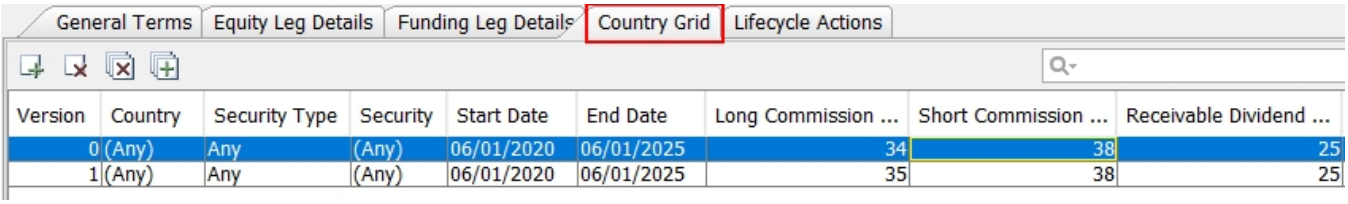
Fields	Description
Different Rate Index for Long and Short Leg Type	Check to define a different funding rate for long positions in the Long Rate Index tab and short positions in the Short Rate Index tab, or clear otherwise (the funding leg defined in the Long Rate Index tab applies to both Long and Short positions). Select Fixed or Float.
Fixed Rate (%)	Enter the percentage rate when Leg Type is Fixed. 
Rate Index Reset Frequency Reset Lag Reset Timing RoundingMethod	When Leg Type is Float: » For Rate Index, select the Currency, Name, Tenor, and Source. » For Reset Frequency, select NO if it is the same as the payment frequency, or select the reset frequency if it is more frequent than the payment frequency. For example, select DLY for daily compounding rate indices. » For Reset Lag, specify the number of days between the reset date and the payment period end date, bus / cal days, holidays and 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. » For Reset Timing, select BEG_PER / END_PER. The rate is reset at the beginning / end of the coupon period. » For RoundingMethod, select the rounding method and the number of decimal places.
Compounding	Check Compounding to enable compounding and specify the following fields as needed. **Frequency** - It is set to the reset 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. Compounded cashflows with reset frequency higher than payment frequencies for IBOR rate indices is supported with Compounding Method = NoCmp. **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** - **The only available method currently available is NoCmp**. A cashflow is created at the compounding period without actually compounding the interest. The daily rate resets for the

Fields	Description
	floating rate are used to 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.
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.
DiscountMethod	You can select NONE for no discount, or EXP for exponential interest calculation. **[NOTE: The EXP discount method is only supported for contracts with Date Calculation Method = Independent]**
Frequency	Select the payment frequency and configure Roll On day and Payment At options. Roll On Day can be set by the user to generate desired compounded cashflows dates.
Stub Rule	Select the rule to apply in case of a stub period and configure the stub rule as needed.
Period Rule	Select an adjustment method. • ADJUSTED: Adjusts the period's end date if it falls on a non-business day, according to the payment date roll convention. ADJUSTED is set as the default for the Period Rule field. • FRN: Adjusts the period's end date to the next business day if it falls on a non-business day, unless the next business day is in the following month, in which case the preceding business day is used. • MAT_UNADJUSTED: Adjusts the period's end date if it falls on a weekend, unless it is the last period (maturity), in which case it is not adjusted; as such, the adjustment method may affect intermediate amounts, but it does not change the maturity date. • UNADJUSTED: Does not adjust the period's end date for non-business days.
Payment Date Lag	Specify the number of days to offset the payment, bus / cal days, holidays and date roll.
First Accrual	If checked, the notional to be used for the basic interest, funding and borrow charge calculation is the current day notional. It means that the interest accruals on the start date correspond to 1 day of accrual. If unchecked, the notional used for the basic interest, funding and borrow charge calculation is the previous day notional. There is no accrual on the start date.
Include Cash Prepaid	If checked: Cash margin call position is included in the funding flow calculation. The funding is paid by the user of the portfolio swap contract regardless of the direction of the position.

Fields	Description
	If unchecked: Cash margin call position is not included in the funding flow calculation.
Borrow Charge	If checked: Borrow charge flows are paid by the user of the portfolio swap contract on short positions. If unchecked: Borrow charge flows are not paid.
Allow Trade Specific Funding Spreads	If checked: Funding spreads can be edited at trade level for all trades associated with the contract. If not checked: The contract information is used to calculate the funding spreads.
Allow Trade Specific Reset Rate	If checked: The trade settle date reset date will be used for accrual calculations.

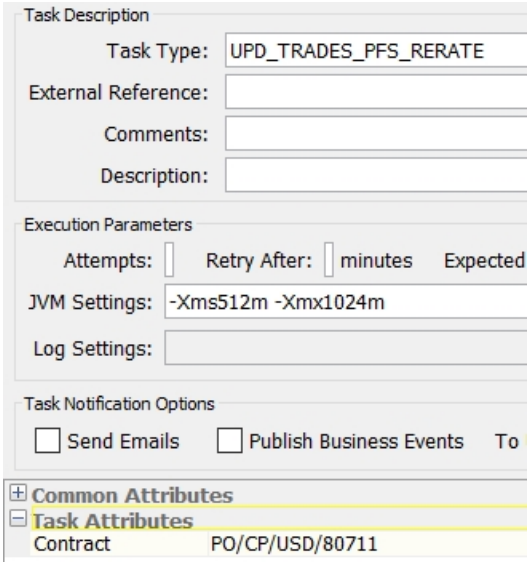
1.5 Country Grid

Select the Country Grid tab.



- Click to add a new row. To delete a row, select the row and click . To delete all rows, click .
- Configure the fields described in the table below as necessary.
- If "Allow Trade Specific Funding Spreads" is checked, and the funding spreads are modified, you will be prompted to propagate them to the associated trades.

  Click **Yes** and run the scheduled task UPD_TRADES_PFS_RERATE to actually propagate the funding spreads to the trades. It will set the portfolio contract attribute RERATE_SPREAD_PROPAGATED = YES.



You can select a contract, or leave empty for all.

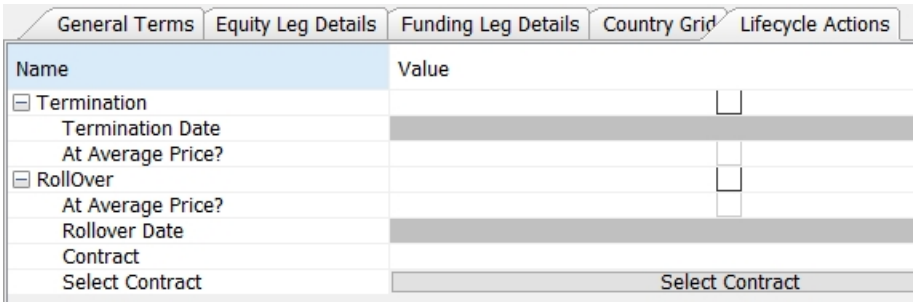
Country Grid Details

Fields	Description
Version	When the first version of the country grid is saved, the version number defaults to 0. You can click to create a new version of the existing rules. In this case, the existing rules are duplicated and the version number is increased. When a trade is created, the latest version of the rules is used and is stored in the trade keyword PortfolioSwapPositionSpreadVersion.
Country	Select the country of the product or Any.
Security Type	Select a product type or Any. It is limited to product types selected in “Underlying ProductType” in the General Terms tab.
Security	Click ... in the Security field and navigate the Product Chooser window to select a product, or leave as Any.
Start Date	The start date of the period to which the country grid applies.
End Date	The end date of the period to which the country grid applies.
Long Commission (bps) Short Commission (bps)	Enter the default commission rates for trade activity. The commission rate is applied to all trades booked under a particular portfolio swap contract. The Long Commission is paid/received on buy trades. The Short Commission is paid/received on sell trades. A fee of type COMMISSION is computed upon saving the portfolio swap trades.

Fields	Description
Receivable Dividend (%) Payable Dividend (%)	Enter the dividend retrocession rate applied on long and short positions. Receivable Dividend is the percentage of the dividend received by the processing organization on a long position. Payable Dividend is the percentage of the dividend paid by the processing organization on a short position.
Long Funding Spread (bps)	Enter a funding spread to be applied on long positions.
Short Funding Spread (bps)	Enter a funding spread to be applied on short positions.
Borrow Charge Spread (bps)	Enter a Borrow Charge Spread to be applied on the user's long positions. In the Corporate Action calculation, the Borrow Charge Spread is added to the Borrow Charge Rate for calculating the Borrow Charge accrual and CA amount.
Hair Cut (%)	Enter a haircut percentage as needed. It is used in the Funding calculation if Include Cash Prepaid is unchecked on the Portfolio Swap contract. Funding Notional = Cost Notional * Hair Cut %.

1.6 Lifecycle Actions

You can use the Lifecycle Actions tab to define lifecycle actions for the contact.



Defining a Termination

Check the Termination checkbox and enter the Termination Date.

Check "At Average Price?" to terminate the trade at average price, or market price otherwise.

Save the contract.

To perform the actual termination of the contract, you need to generate the corporate actions on the termination date. A corporate action of type REDEMPTION.TERMINATION is created.

When applying the corporate action, the positions on the contract are terminated at the underlying market price (or average price if "At Average Price?" is checked). The status of the contract is changed to Terminated and no new trades can be entered on the contract.

▶ Please refer to Calypso Portfolio Swaps Corporate Actions documentation for complete details.

Defining a Rollover

Check the Rollover checkbox and enter a Rollover Date.

Check "At Average Price?" to roll over the trade at average price, or market price otherwise.

Then click **Select Contract** to select the target contract where the current contract needs to be rolled over. You can only select a contract with the same FX conversion method.

Save the contract.

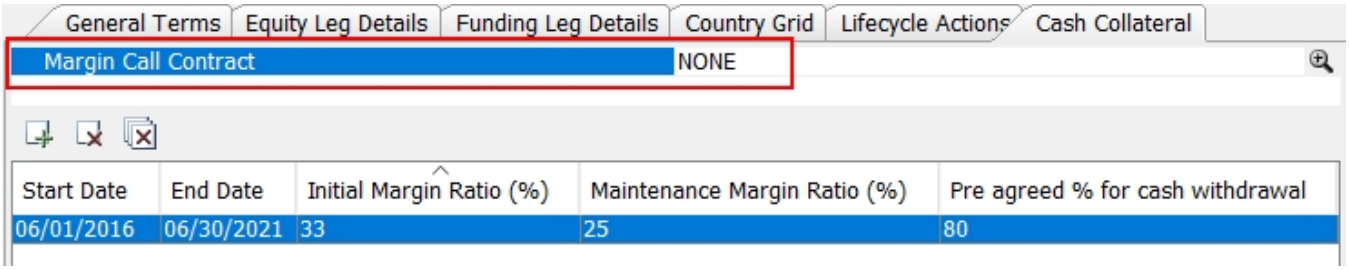
To perform the actual rollover of the contract, you need to generate the corporate actions on the rollover date. A corporate action of type TRANSFORMATION.ROLLOVER is created.

When applying the corporate action, the positions on the current contract are terminated at the underlying market price (or average price if "At Average Price?" is checked) and new positions are created on the target contract. The status of the current contract is changed to RolledOver and no new trades can be entered on the current contract.

▶ Please refer to Calypso Portfolio Swaps Corporate Actions documentation for complete details.

1.7 Cash Collateral

The Cash Collateral tab is enabled when the Cash Collateral checkbox is selected on the General Terms tab.



» Select the Cash Collateral checkbox on the General Terms tab.

» Configure the fields described in the table below as necessary.

Cash Collateral Details

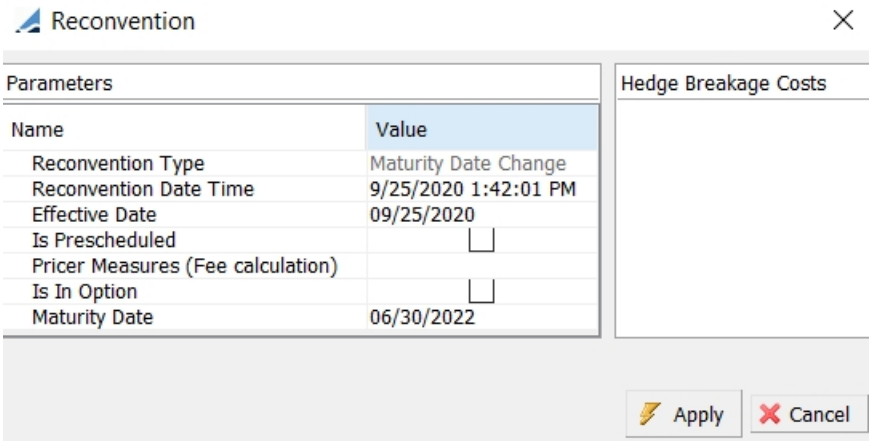
Fields	Description
Margin Call Contract	Select a margin call contract that applies to the portfolio swap contract. ▶ Refer to Calypso Collateral documentation for details on defining and creating a margin call contract.
Start Date	The start date of the period to which the ratios apply.
End Date	The end date of the period to which the ratios apply.

Fields	Description
Initial Margin Ratio (%)	Enter the initial margin ratio used in margin call measures calculation.
Maintenance Margin Ratio (%)	Enter the maintenance margin ratio used in margin call measures calculation.
Pre agreed % for cash withdrawal	Enter the pre-agreed % for cash withdrawal used in cash balance measures calculation.
FX Reset	If needed, select an FX Reset reference for FX conversion of the margin call position.

1.8 Extending the Maturity Date of the Contract

You can extend the maturity date of the contract using **Reconvention > Maturity Date Change**.

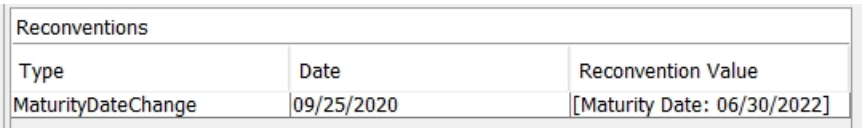
It brings up the Maturity Date Change reconvention window.



Enter the Reconvention Date and Time, Effective Date and Maturity Date.

Then click **Apply**.

The reconvention appears in the Reconvention panel of the General Terms tab.



Save the contract.

The contract end date does not change but new trades and lifecycle actions are applicable until the new end date. The column "Extended Maturity Date" allows viewing the new end date in the Trade Browser.

For trades with ADR, Equity, Equity Index underlyings - All trades existing before the reconvention keep their original end date. Trades entered after the reconvention effective have the new end date.

For trades with Future Equity Index underlyings – The end date is set to the minimum of the contract end date and the future expiration date. All trades existing before the reconvention keep their original end date. Trades entered after the reconvention effective date have the end date set to the minimum of the mew end date and the future expiration date.

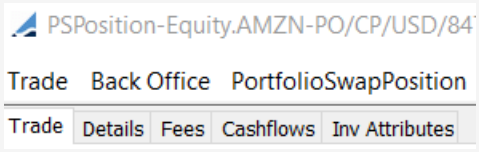
Country grids are extended to the new end date.

Cashflows are generated up to the new end date with Short Last stub rule.

2. Capturing Portfolio Swap Trades

This document describes how to capture portfolio swap trades using the Trade Portfolio Swap Window.

Portfolio Swap Quick Reference



Underlying Configuration

- To preconfigure a portfolio swap trade, navigate to the Portfolio Swap Contract window: **Calypso Navigator > Configuration > Equity > Portfolio Swap**.

Entering Trade Details

- When you open a trade worksheet, the Trade tab is active by default.
- You can select a template from the Template drop-down list to populate the worksheet with default values, and then modify the fields as applicable.

  You can also enter the trade fields manually. They are described below.
- Proceed to other tabs as applicable.

Saving a Trade

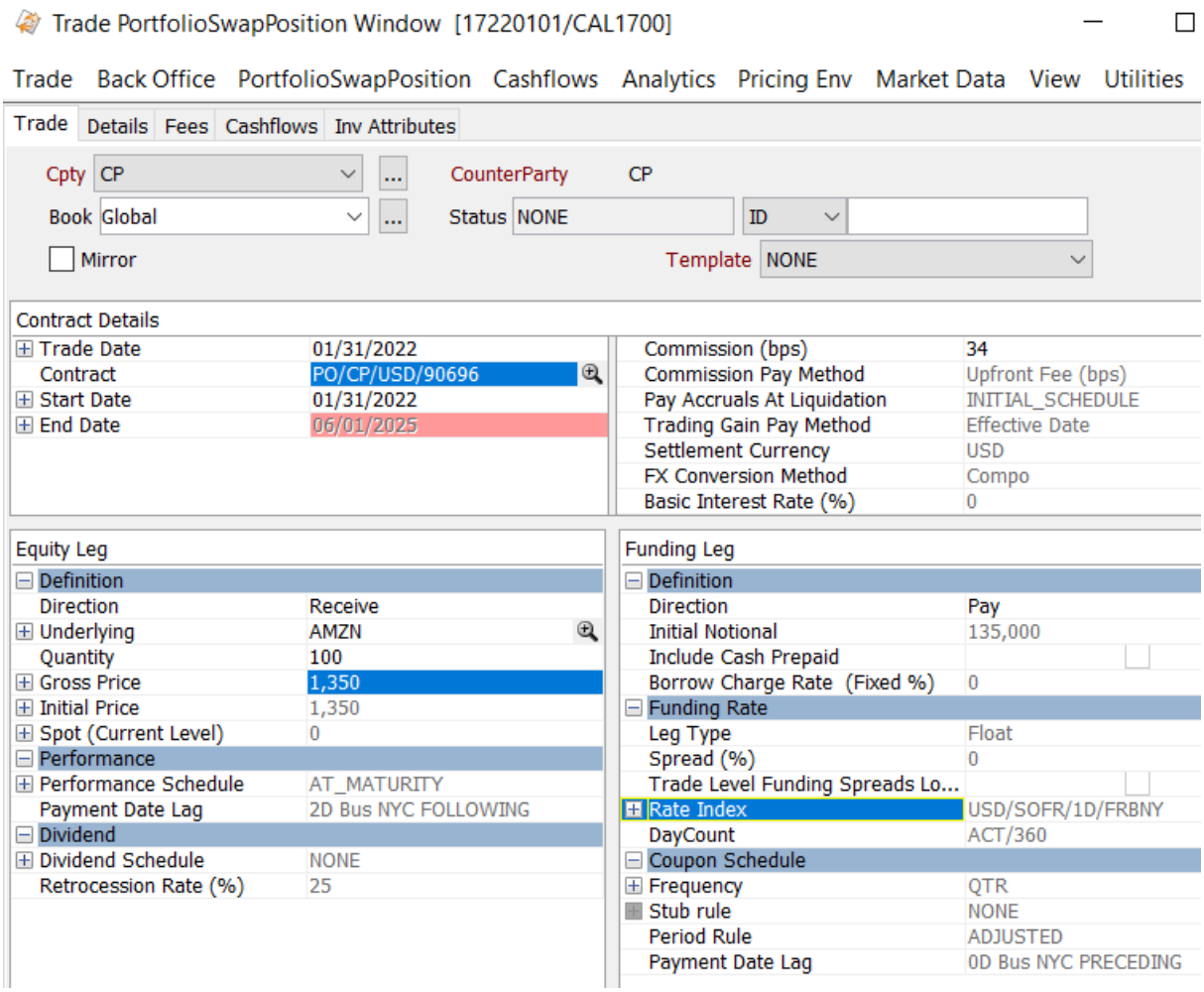
- Press F5 to save the trade, or select **Trade > Save** from the menu bar.

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

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

2.1 Sample Portfolio Swap Trade

Select **Calypso Navigator > Trade > Equity > Portfolio Swap** (menu action `trading.TradePortfolioSwapPositionWindow`) to open the Trade PortfolioSwap Window.



Trade Details

Fields	Description
Role / Cpty	The first two fields of the worksheet identify the trade counterparty. The counterparty's role is displayed next to the counterparty field. Double-click the label to change the role. You can select a legal entity of the specified role provided you have set up favorite counterparties. 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. Favorite characters are specified using **Utilities > Configure Favorite Counterparties**. Otherwise, click ... to select a legal entity of specified role from the Legal Entity Chooser.
Book	Trading book to which the trade belongs. Defaults to the book selected in the User Defaults. You can modify as applicable.

Fields	Description
	The owner of the book (a processing organization) identifies your side of the trade. You can select a book provided you have set up favorite books.
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 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 the Enter key. 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 and external reference can be set on the Details tab of the Trade worksheet.
Template	You can select a template from the Template field to populate the worksheet with default values. Modify the fields as necessary.
Mirror	Check to generate a mirror trade. You will be prompted to enter additional fields in the Contract Details. ▶ See Portfolio Swap Mirror Trades for details.

Contract Details Fields

Fields	Description
Trade Date	Enter the trade date. Double-click the plus sign (+) to make Trade Time and Current options available. Select the Current checkbox to use the current date and time.
Contract	The contract is automatically displayed based on the Processing Organization of the selected trade book, the counterparty, and the trade date. If several contracts have the same Processing Organization and Counterparty, no contract will be chosen by default. The user will be able to select the contract from a list of contracts active at trade date. ⓘ **[NOTE: There must be a saved Portfolio Swap contract whose legal entities and roles match those selected in the trade window before you can select the contract in the Portfolio Swap Contracts search window]** You can click to view the contract details.
Start Date	Effective date of the underlying contract.
End Date	End date of the underlying contract.
Commission	The commission fee rate in bps defaulted from the underlying contract. The user can override the

Fields	Description
	default value.
Commission Pay Method	Commission pay method of the underlying contract.
Pay Accruals at Liquidation	Accruals payment at liquidation method for the underlying contract.
Trading Gain Pay Method	Trading gain pay method of the underlying contract.
Settlement Currency	Settlement currency of the underlying contract.
FX Conversion Method	FX conversion method of the underlying contract.
Basic Interest Rate (%)	Basic interest rate of the underlying contract.

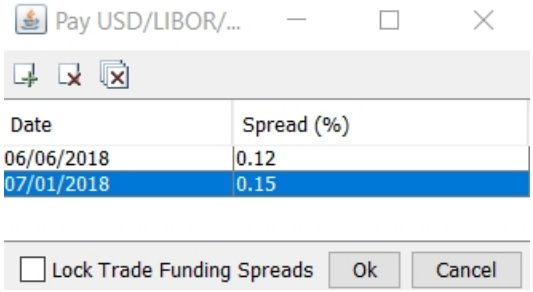
Equity Leg Details

Fields	Description
Direction	Direction of the leg from the Processing Organization's perspective. Select either Pay or Receive.
Underlying	Select the underlying product. You can click to view the underlying details.
Quantity	Enter the number of shares.
Gross Price	Enter the negotiated trade price.
Initial Price	Calculated by the system. In the case of Embedded Commission Pay Method, the commission rate / price is included in the Initial Price. In any other case, the Initial Price is equal to the Gross Price. This price is used to calculate the first payoff of a swap.
Spot (Current Level)	Displays the current market price.
Initial FX Rate	When the settlement currency is different from the contract currency, you can set the initial FX rate in this field.
Initial Price (Settle Ccy)	This field is displayed when the settlement currency is different from the contract currency and the FX Conversion Method is Compo. It is defined as the initial price converted into settlement currency using the Initial FX Reset of the trade.

Fields	Description
FX Reset	When the settlement currency is different from the contract currency, the FX Reset Reference as defined in the underlying contract is displayed here.
Performance Schedule	Displays the performance payoff schedule of the underlying contract.
Dividend Schedule	Displays the dividend payment schedule of the underlying contract.
Retrocession Rate (%)	Retrocession Rate corresponds to Dividend Receivable percentage or Dividend Payable percentage from the underlying contract.

Funding Leg Details

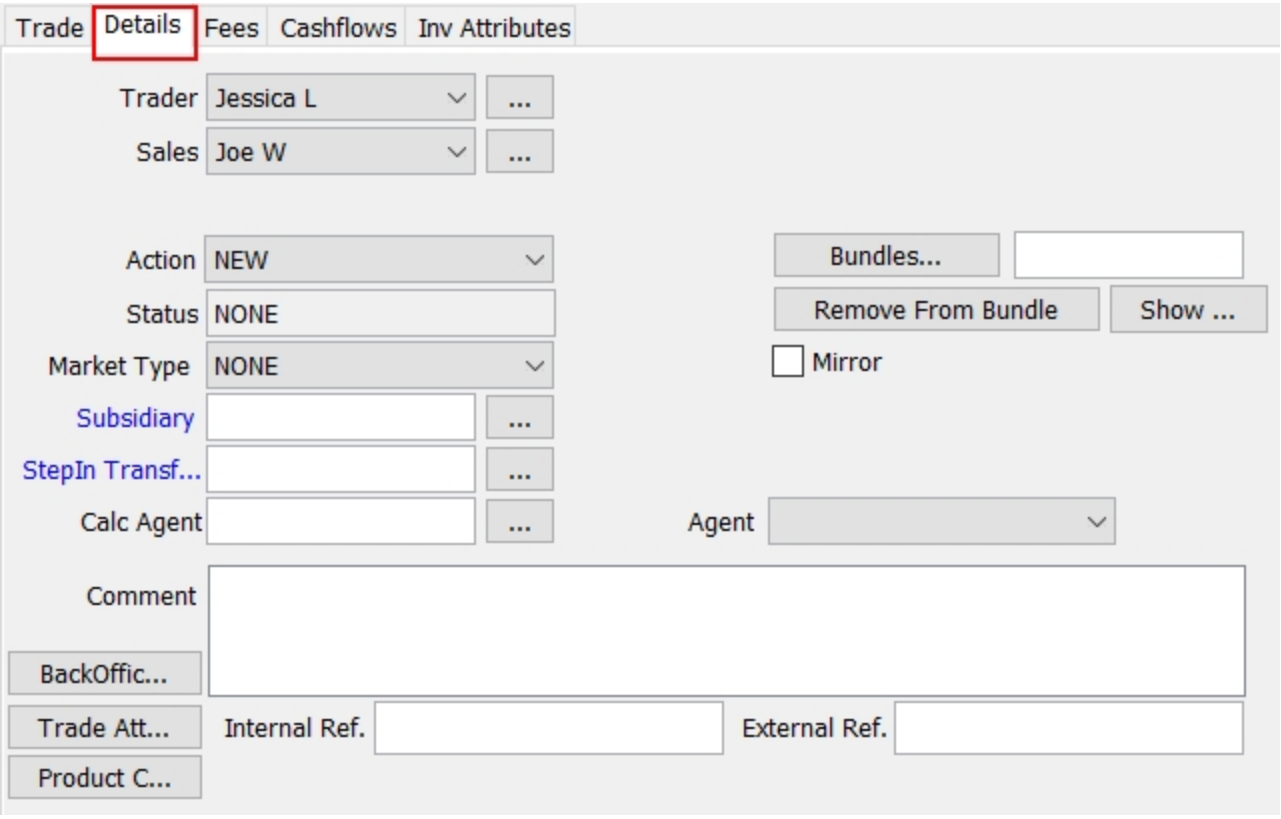
Fields	Description
Direction	Pay or Receive. The selection is based on the performance leg's direction.
Initial Notional	Initial funding notional in pricing currency. Pricing currency is underlying the underlying security currency for the Flexo conversion method. Pricing currency is settlement currency for the Compo conversion method.
Include Cash Prepaid	Displays the value entered in the contract
Borrow Charge Rate (Fixed %)	Borrow charge rate of the underlying contract. The borrow charge rate can be seen in the Trade Browser in the following columns: • "Borrow Charge Rate (%)" - Borrow charge rate as of valuation date • "SettleDateBorrowCharge" - Borrow charge rate as of trade start date
Leg Type	Fixed or Float (based on the underlying contract).
Fixed Rate (%)	For a fixed leg, displays the fixed rate of the underlying contract by default. You can click to enter a fixed rate schedule.
Spread (%)	Displays the funding spread of the underlying contract by default using the latest version of the country grid. You can see the version number in the trade keyword PortfolioSwapPositionSpreadVersion. If you customize the spread at the trade level, the version number is increased and prefixed with "-" to indicate it is customized. You can click to enter a spread schedule if the contract allows.

Fields	Description
	 » Add rows as needed. » You can check "Lock Trade Funding Spreads" to lock the spreads at trade level. » Click **Ok** when you are done. The spread as of trade start date can be displayed in the Trade Browser in the column "SettleDateSpread".
Rate Index	For a floating leg, select the rate index: currency, reference index, tenor, and source (from the underlying contract). You can also set the following parameters: • Index Factor • Spread (%) - You can click to enter a spread schedule. • Reset lag • Reset timing • First Reset (%) • Compounding • Averaging reset • Different Reset Dates Per Coupon
DayCount	Displays the daycount from the underlying contract.
Coupon Schedule	Displays the coupon schedule from the underlying contract.
Frequency	Displays the funding payment frequency from the underlying contract.
Stub Rule	Displays the stub rule defined in the underlying contract.
Period Rule	Displays the period rule from the underlying contract.
Payment Date Lag	Displays the payment date lag from the underlying contract.

2.2 Specifying Additional Details

Select the Details tab to modify trade details.

» You can click **Bundles** to associate the Portfolio Swap trade with a bundle. You will be prompted to select a bundle.



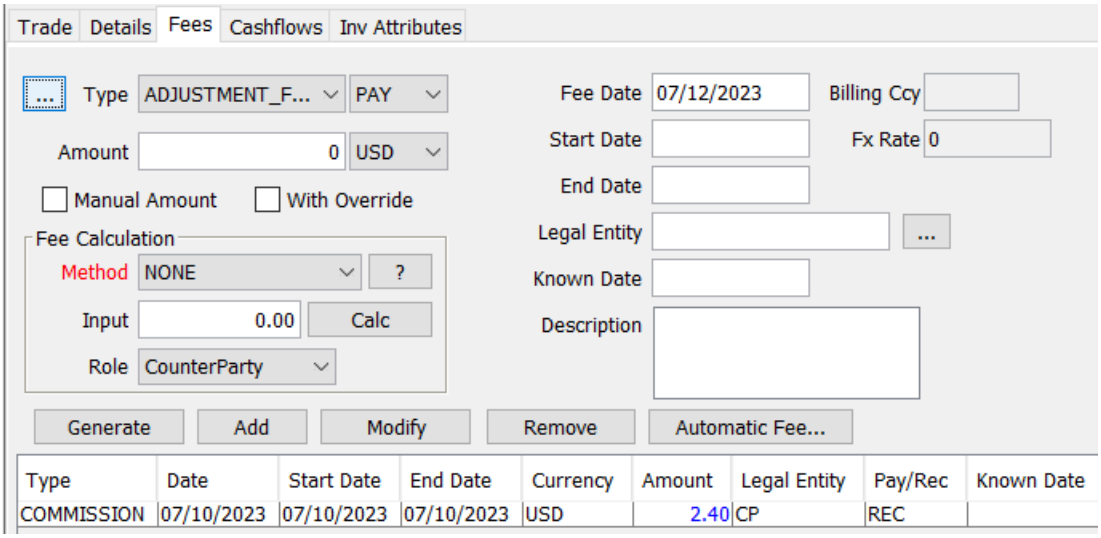
Field Details

Fields	Description
Trader	Select a Trader. Click ... to add new traders. You will be prompted to enter a new trader name.
Sales	Select a Sales Person. Click ... to add a new sales person. You will be prompted to enter a new sales person name.
Action	Shows the action currently performed on the trade based on the workflow configuration. You can select an action that will be applied on the trade upon saving as applicable.
Status	Status of the trade.
Market	Select None, Primary, Re-Issue, Secondary, or When-Issued.

Fields	Description
Type	
Subsidiary	Click ... to select a subsidiary. The Legal Entity Chooser will appear. You will prompted to select a legal entity for the role of subsidiary.
StepIn Transferor	Transferor from a Step-In Novation done through DTCC.
Calc Agent	Click ... to select a calculation agent. The calculation agent is the party who acts as the referee in the event of a disagreement about a payment detail. The calculation agent will be designated in a legal agreement.
Comment	Enter a comment as applicable.
Mirror	▶ See Portfolio Swap Mirror Trades.
Internal Ref	Enter an internal reference for the trade as needed. It can be used for reporting purposes, and you can search trades using their internal reference throughout the system. You can set the environment property AUTO_FEED_INTERNAL_REF to true to automatically populate the internal reference with the ID of the original trade for trades created through partial termination and novation, else with the trade ID.
External Ref	Enter an external reference for the trade as needed. It can be used for reporting purposes, and you can search trades using their external reference throughout the system. You can set the environment property AUTO_FEED_EXTERNAL_REF to true to automatically populate the external reference with value of the trade keyword TRANSFER_FROM if not empty, else with the trade ID.

2.3 Capturing Trade Fees

The Fees tab allows entering fees for the trade. It also shows fees that have been automatically computed.



» Select a fee type from the Type field or click **...** to create a new fee type. The Fee Definition window will appear.
  – Select PAY or REC next to the fee type as applicable. This indicates whether the processing org pays or receives the fee to / from the recipient.
  – Select the payment currency of the fee from the field next to the Amount field.
  – Enter the payment date of the fee in the Fee Date field.

    The fee date defaults to trade date + spot days (from the fee currency) + fee offset (from the fee definition).

    For automatic fees, the fee date can be overridden by the attributes of the fee grid.
  – Select the role of the fee recipient from the Role field and click **...** next to the Legal Entity field to select the fee recipient. The Legal Entity Chooser will appear. You will be prompted to select a legal entity of specified role.

» Click **Add** to add a fee row or click **Generate** to amortize the fee over a given period.

When amortizing a fee, you will be prompted to enter a start date, end date, and amortization frequency.

» Click **Apply** to generate fee rows as applicable.

Fields Details

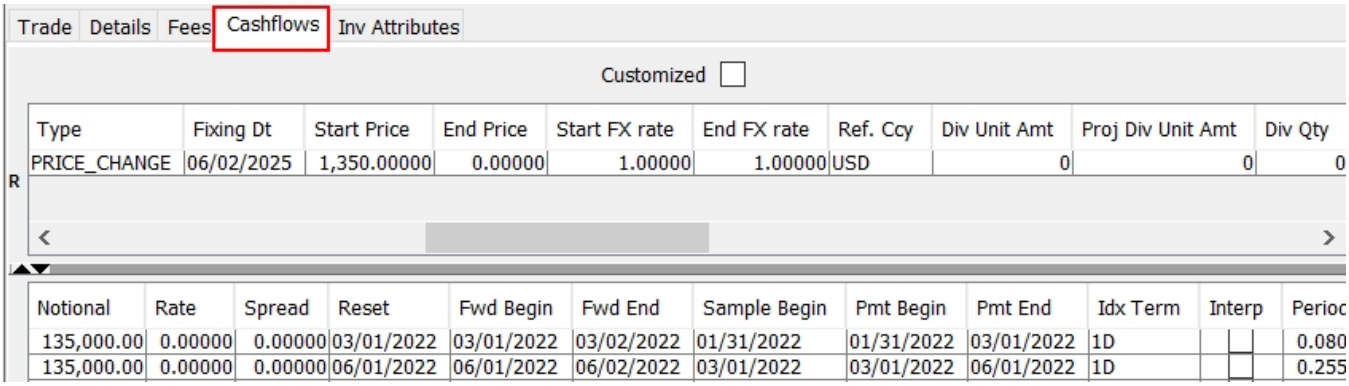
Fields	Description
Amount	Enter the fee amount for a flat fee only (method NONE). Otherwise, the amount will be calculated with the designated method.
Method	Select a fee calculation method and click **Calc** to calculate the fee. Keep in mind that the NONE method does not require calculation. When defining a fee type, you can select a default fee calculator. ▶ Refer to the *Calypso Developer's Guide* for information on adding custom fee calculators.

Fields	Description
	Click **?** for information on a given method.
Start Date End Date	Start Date and End Date will be set to the Fee Date, unless you choose to amortize the fee over a given period.
Known Date	Allows you to enter a fee for a given date when you choose to amortize the fee over a give period. Enter a fee with a known date and click **Add**. A fee row will be added for the date. The known date must be between the start and date.
Description	Enter a comment as applicable.

2.4 Generating Cashflows

Select the Cashflows tab to display cashflows.

The cashflows are generated when you click **Price** on the Trade tab, or when you choose **Cashflows > Generate**.



2.4.1 Cashflows Menu

The Cashflows menu items are described below.

The Cashflows menu is accessible from the Trade PortfolioSwap Window menu bar or by right-clicking a cashflow.

Menu Item	Description
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, because those columns will be overridden. You should choose Recalc instead]**
Recalc	When cashflows have been customized, choose Recalc to display the cashflows without overriding unlocked columns.
Copy Ctl-C	To copy and paste into cashflow cells.

Menu Item	Description
Paste Ctl-V	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 Coupon	To add a cashflow. Right-click on a row and choose Add. The selected row will be split between two rows. The right 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 Coupon	To remove a cashflow. Right-click and row and choose Remove. The selected row will be removed.
Add Coupon Period Remove Coupon Period	To add or remove compounding periods. These menu items require customized cashflows and a compounding trade. Then you can add or remove compounding periods.
Scheduler	To define an amortization schedule for the principal. Right-click one or multiple Notional cells, and choose Scheduler. It will bring up the Scheduler Notional window.
Sample Values	
Lock Column	To lock a customized cashflow. Right-click a customized column and choose Lock Column. The values will not be overridden when the cashflows are generated.
Lock All Modified Columns	To lock all customized columns.
Unlock Column	To unlock a locked column. Right-click a locked column and choose Unlock Column to unlock it.
Unlock All Columns	To unlock all locked columns.
Configure Columns	To select and organize displayed columns.
Save Column Config	To save the column configuration.
Export to Excel	To export the cashflows to an Excel spreadsheet.
Export to	To export the cashflows to an HTML page.

Menu Item	Description
HTML	
Show Consolidated Cashflows	To bring up the Cashflow Report that displays all the cashflows associated with the trade.

Portfolio Swaps should be liquidated using FIFO by trade date.

Each trade has its own trade costs like Accrual Buy/ Accrual Sell / Basic Interest Buy / Basic Interest Sell / Borrow Charge. These carry the accrual from the last cashflow start date until the settle date of the deal - PERFORMANCE, FUNDING_CHARGE_REALIZED, SERVICE_CHARGE_REALIZED, BORROW_CHARGE_REALIZED. They are generated by the liquidation process.

In order to generate TRADING_GAIN and PERFORMANCE transfers on aggregated positions per product type, and to exclude some product types from Liquidation Aggregation, you can use the following domains:

- "XferPosAggregation.Exclude" – Add the product types for which you do not want to generate TRADING_GAIN and PERFORMANCE transfers on aggregated positions.
- "XferLiquidationConfig" – Add the product types and liquidation configurations for which you want TRADING_GAIN and PERFORMANCE transfers to be generated.

  Example: PortfolioSwap.DEFAULT

Position details and basic interest, borrow charge, and funding accrual calculations can be viewed in the Position Valuation Report.

▶ See Position Valuation Report for details on configuring and using the report.

2.4.2 BASIC INTEREST

Basic Interest flows are part of the service charges paid by the user of the portfolio swap to the provider (provider can be the prime broker). These flows are paid by the user regardless of the direction of the position. The schedule is the same as the funding schedule defined on the contract level. The rate is fixed and is the same for long and short positions.

If FX Conversion Method = Compo:

BASIC_INTEREST =Position Notional * (Basic Rate) * Period

- Position Notional = Position Open Quantity * Avg Cost Price
- Avg Cost Price is in settlement ccy = Avg cost Price in underl ccy * FX Reset

If FX Conversion Method = Flexo:

BASIC_INTEREST =Position Notional * (Basic Rate) * Period

- Position Notional = Position Open Quantity * Avg Cost Price
- The User of the portfolio swap contract will always be the payer of this flow regardless the direction of the trade.

Formula for CA trade with Counterparty (BO transfer amount):

BASIC_INTEREST =Position Notional * (Basic Rate) * Period * FX Reset

- Position Notional = Position Open Quantity * Avg Cost Price
- The User of the portfolio swap contract will always be the payer of this flow regardless the direction of the position.
- FX Rate Reset Date = Payment date – FX reset date lag (defined on the FX Rate Definition)

2.4.3 FUNDING CHARGE

If the "Include Cash Prepaid" checkbox is selected in Funding Leg Details of the Portfolio Swap contract, the funding is calculated on the contract position level. It takes into account the margin call position.

FUNDING_CHARGE_REALIZED = Funding Notional * (Funding Rate + Short Funding Spread) * Period

- Case 1: PO = Provider of the Portfolio Swap contract. PO will receive the FUNDING regardless the direction of the position.

  Funding Notional = MAX (0; Short Positions Notional – Margin Call Position + Long Positions Notional * Initial Margin Ratio)

  Short and Long Positions Notional = Position Open quantity * Avg Cost Price * Avg Cost FX

  FX Conversion is done on the pricing and PL level only if FX conversion method of the contract is Compo
- Case 2: PO = User of the Portfolio Swap contract. PO will pay the FUNDING regardless the direction of the position.

  Funding Notional = MAX (0; Long Positions Notional – Margin Call Position + Short Positions Notional * Initial Margin Ratio)

  Short and Long Positions Notional = Position Open quantity * Avg Cost Price * Avg Cost FX

  FX Conversion is done on the pricing and PL level only if FX conversion method of the contract is Compo.

Funding notional will be adjusted on each fixing date of the performance leg.

If the "Include Cash Prepaid" checkbox is cleared in the Portfolio Swap contract, the funding is calculated on the contract / underlying security position level. It does not take into account the margin call position. The funding will be paid by the Processing Organization on long positions and received on the short positions.

FUNDING_CHARGE_REALIZED = Funding Notional * (Funding Rate + Short or Long Funding Spread) * Period

- Funding Notional = Position Open quantity * Avg Cost Price * Avg Cost FX

  FX Conversion is done on the pricing and PL level only if FX conversion method of the contract is Compo

  Funding notional will be adjusted on each fixing date of the performance leg.

2.4.4 BORROW CHARGE

The Borrow Charge is paid by the user of the Portfolio Swap on long positions.

BORROW_CHARGE_REALIZED = Position Notional * (Borrow Charge Rate + Spread) * Period

- Case 1: PO = Provider of the Portfolio Swap contract. PO will receive the BORROW_CHARGE_REALIZED on all long positions. There will be no BORROW_CHARGE_REALIZED flows on short positions.

  Position Notional = Long Position Open Quantity * Avg Cost Price

  Avg Cost Price is in settlement ccy = Avg cost Price in underl ccy * FX Reset

  FX Conversion is done on the pricing and PL level only if FX conversion method of the contract is Compo.
- Case 2: PO = User of the Portfolio Swap contract. PO will pay BORROW_CHARGE_REALIZED on all short positions. There will be no BORROW_CHARGE_REALIZED flows on long positions.

  Position Notional = Short Position Open Quantity * Avg Cost Price

  Avg Cost Price is in settlement ccy = Avg cost Price in underl ccy * FX Reset

  FX Conversion is done on the pricing and PL level only if FX conversion method of the contract is Compo.

2.4.5 PERFORMANCE FLOWS

Compo FX Conversion method:

PRICE_CHANGE = Position Quantity * (Start Market Price * Start FX Rate – End Market Price * End FX Rate)

Position Quantity = open quantity of the position

Position Open Quantity is updated at each liquidation, and the funding notional is impacted accordingly.

Flexo FX Conversion method:

PRICE_CHANGE = Position Quantity * (Start Market Price – End Market Price)

Position Quantity = open quantity of the position

The BO transfer will be converted into the settlement currency using the quote of the FX Reset Reference on the payment date – Reset Days of the corresponding FX Reset Definition.

Position Open Quantity is updated at each liquidation, and the funding notional is impacted accordingly.

2.4.6 DIVIDEND FLOWS

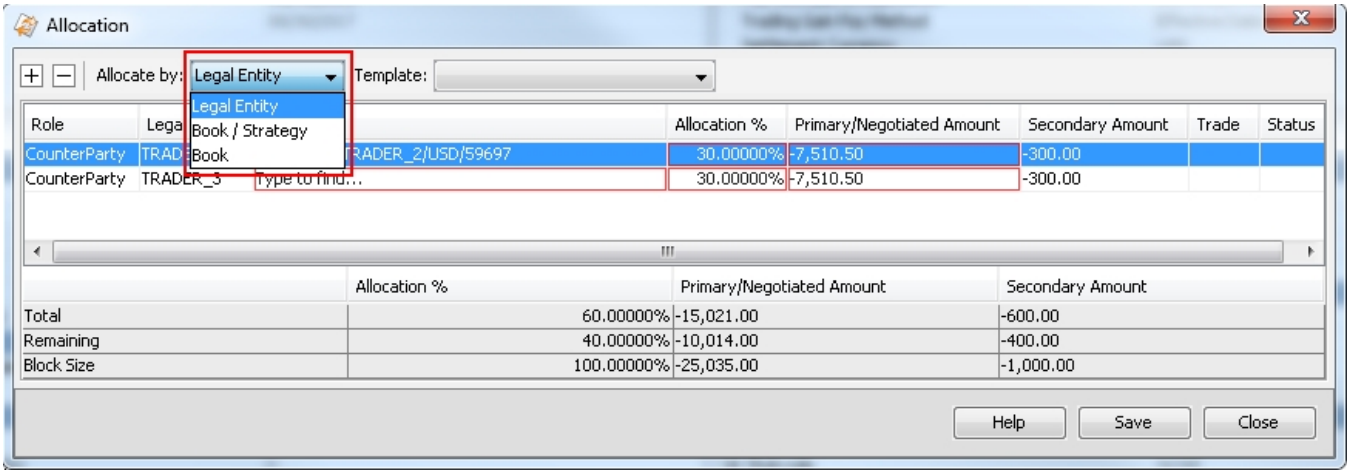
DIVIDEND = Position Open Quantity * Dividend Amount % * Retrocession Rate * FX Rate

2.5 Portfolio Swap Trade Allocation

The Allocation window allows allocating a trade to multiple books or multiple legal entities. When allocating a trade (referred to as a block trade), child trades are created for each book or legal entity to which the block trade is allocated. The allocation can be accomplished manually or according to an allocation template. The allocation is performed based on a percentage of the notional amount (or quantity) of the block trade.

To allocate trades from the portfolio swap trade window, go to **Back Office > Allocate**. Alternatively, you can apply the ALLOCATE action in a Trade Browser / Task Station.

- Click ⊞ to add a row or ⊟ to remove a row.
- In the Allocate by: drop-down list, indicate whether the allocation is specified by Legal Entity, Book/Strategy, or Book.
- Enter details in the fields to define the allocation.



Allocation by Legal Entity

The Allocation window allows allocation by legal entity and an associated portfolio swap contract. Keep in mind the following requirements.

- The processing organization in the initial trade should be the processing organization in the contract.

- The counterparty or counterparties selected for allocation should be counterparty in contracts associated with the allocation.
- The trade date of the initial trade should fall within the contract period.

Allocation by Book/Strategy or Book

The Allocation can also be specified by a book and portfolio swap contract or a book/strategy and contract. Keep in mind the following requirements.

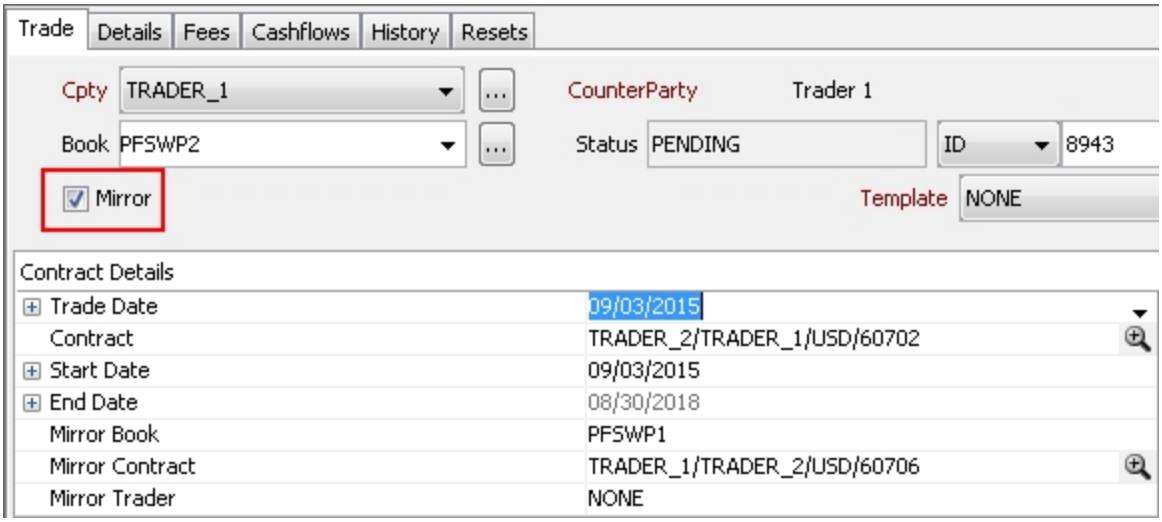
- The processing organization connected to the book selected in the allocation should be the processing organization in the contract.
- The counterparty associated with the contract should be the counterparty on the initial trade.
- The trade date of the initial trade should fall within the contract period.

▶ Refer to the Calypso documentation *Allocating Trades* for more information on trade allocation.

2.6 Portfolio Swap Mirror Trades

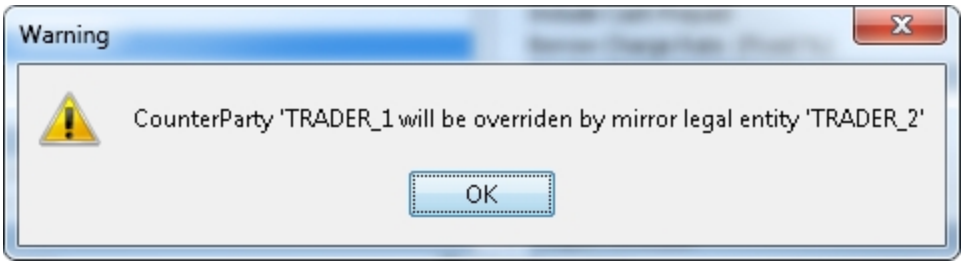
Mirror trades involve one Portfolio Swap trade between a processing organization and counterparty, and a mirror trade between the original processing organization and other legal entity.

A mirror trade requires a Portfolio Swap contract between parties for both the original trade and the mirror trade.



» To initiate a mirror trade, select the Mirror checkbox in the upper left corner of the trade window. Mirror trade options appear in the Contract Details panel.

» Select the Mirror Book. If the original trade's counterparty is different from the legal entity associated with the mirror book, the following warning message appears. Click **OK** to accept the change to counterparty.



» Select the Mirror Contract. Click to open the Portfolio Swap Contract window, or click in the Mirror Contract field and then the down arrow to open the Portfolio Swap Contracts search window.

Contracts made available by the search are those whose processing organization is associated with the mirror book or whose counterparty is the processing organization for the original trade's book.

Once the mirror trade is saved, two "child" trades are created. The following considerations apply:

- Details for each trade correspond to the contract and trade direction.
- Corporate actions (funding, price change, basic interest, borrow charges, dividend, and split) are applied on both positions.
- Back office transfers and accounting are done on positions for both books.
- Commission fees, if any, are generated on both trades according to the Portfolio Swap contract details.
- Official P&L and Risk can be run for positions on both books.

After the trade is saved, the ID of the mirror trade will appear next to the Mirror checkbox.

If you add trade keywords to the *MirrorKeywords* domain, when these trade keywords are populated on the original trades, they will be saved on the mirror trades as well.

Upon saving, two trades will be saved, and two tasks will be created, one for each trade. This is the default behavior with the environment property MIRROR_WORKFLOW = true. So after the trades are saved, the mirror trade will be independent from the original trade and will follow its own workflow.

If you set MIRROR_WORKFLOW = false, two trades will be saved, but only one task will be created. So from the point of view of the workflow you will see one trade, and any modification to one of the trades will be automatically propagated to the other. The task will be updated accordingly, whether you modify the original trade or the mirror trade.

2.7 Portfolio Swap Corporate Actions

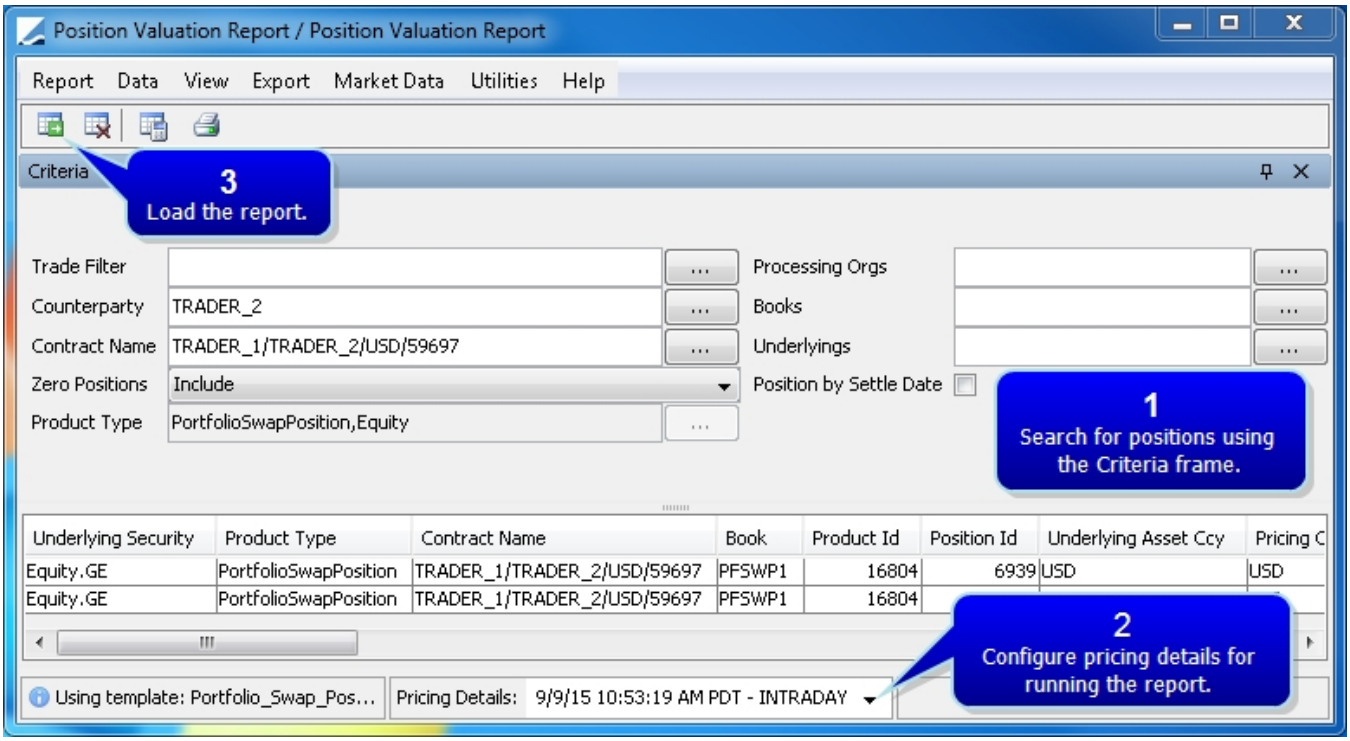
▶ Please refer to Calypso Portfolio Swaps Corporate Actions documentation for details.

3. Position Valuation Report

The Position Valuation Report displays information on a trade's position including basic interest, borrow charges, and funding accruals.

The Position Valuation Report currently supports the product types Portfolio Swap and Equity.

From Calypso Navigator point to **Position & Risk > Position Valuation Report** (menu action `reporting.ReportWindow$portfolioswap.PortfolioSwapValuation`) to open the Position Valuation Report window.

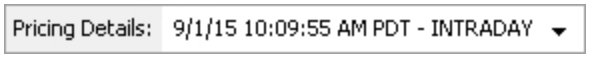


Position Valuation Report window

» Point to **View > Show Frame > Criteria** to show the Criteria search frame. On the right side of the frame, you can click ✕ to remove the search criteria frame from the report window.

Specify the search criteria by using the filters.

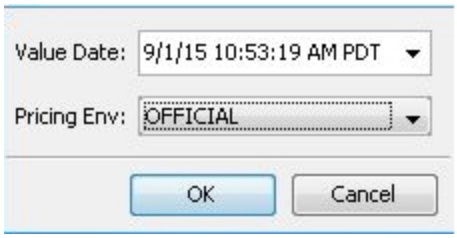
» Specify the pricing environment and valuation date at the bottom of the report window.



By default, the pricing details are current:

- The pricing environment defaults to the one set in the User Defaults.
- The valuation date is the current date and time.

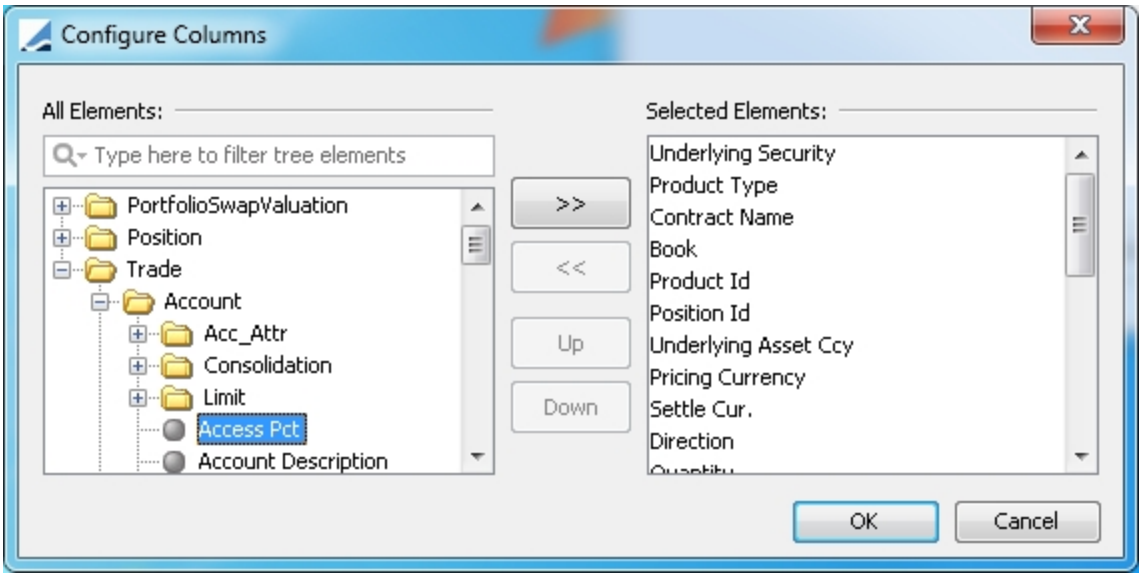
You can click the down arrow to change the default values.



- Click to load the report and view results.
- You can click to clear items in the report panel and any templates that were used to generate results.
- You can select a template and click to display the number of objects that will be loaded from the database before loading the report.
- You can click to print the report results.

Configuring Columns

To select which elements and measures appear in the report, point to **Data > Configure Columns** to open the Configure Columns window.



- Move elements to the Selected Elements field and click the **OK** button to show those columns in the report.
- To save search and column configuration as a template, point to **Report > Save as Template**. Point to **Report > Load Template** to open a configuration in the report window.
- Confirm search criteria and click to load the associated results.