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Nasdaq Calypso

Collateral Management

Version 18

Revision 4.0

April 2025

Approved

Document History

Revision	Published	Summary of Changes
1.0	February 2024	First revision for version 18
2.0	April 2024	Updates for version 18 monthly release - Added filter config templates.
3.0	July 2024	Updates for version 18 monthly release - Added ability to run Collateral Optimizer in Engine server.
4.0	April 2025	Updates for version 18 monthly release - Added new domain value "DisplayMarginCallTradeWindow" to access the modified margin Call Trade window.
5.0	May 2025	Updates for version 18 monthly release - Introduced "collateralsharedserver.bat" and "Collateral Pricing Engine" to price/reprice exposures in real time.

Table of Contents

1. Overview

Welcome to the Collateral Management User Guide.

Organizations need the ability to monitor, calculate, and process collateral calls on a cross-asset basis in a timely manner in order to minimize risks and increase credit capacity. Calypso's collateral management functionality meets these requirements thereby allowing organizations to increase efficiency and reduce operational costs.

Collateral Manager is used in financial organizations (most often by back office personnel) to systematically monitor collateralized portfolios on a contract-by-contract basis. Collateral Manager tracks comprehensive trade information including counterparty details, trade movement and marking and Margin Call agreement compliance.

Margin calls are generated by the Collateral Manager based on collateral data, trades (native Calypso trades or imported collateral exposures), and existing margin call positions. Margin call positions are calculated by the Margin Call engine.

Collateral data include **master agreements** (optional, from Calypso Navigator see **Configuration > Legal Data > Legal Agreements**), as well as **margin call contracts**.

The Collateral Manager offers the following capabilities:

- Calculating margins with a given counterparty, based on trades, and taking into account any existing margin calls. The margin call calculation takes into account thresholds and haircuts defined in the margin call contracts.
- Constituting the margins in cash and/or in securities, and generating margin call events for accounting and documentation purposes (a margin call statement can be generated off margin call events).
- Calculating interest on existing margin calls.

Calypso's stand alone Collateral Management module also offers collateral optimization, which allocates collateral payments by making the best use of inventory.

The Collateral Management Module can be used in the context of OTC Clearing and CSA pricing. For information on using the Collateral Management module in the context of OTC Clearing, please refer to the Calypso Clearing documentation. For CSA pricing, please refer to the Calypso Trade CSA documentation for details.

▶ For information on configuring Margin Call contracts as well as additional components required to generate margin calls, please refer to the Calypso Collateral Configuration User Guide.

▶ For specifics on Cover Distribution, please refer to the Cover Distribution User Guide.

2. Margin Call Engine

The Margin Position Call engine allows computing margin call positions on security collateral.

2.1 Engine and Event Configuration

All Engine and Event configuration is completed in the Engine Manager.

▶ Refer to the Calypso Web Admin documentation for details.

2.2 Margin Call Engine Parameters

The behavior of the margin call engine may be modified with the following engine parameters and attributes.

If a parameter is not available for setup, you can register it in the *engineParam* domain.

Parameters and Attributes	Description
Max Batch Size	Maximum number of persistent events loaded at one time by an engine in batch mode. The engine will load events in MAX_BATCH_EVENT chunks until all events are processed. Persistent events received after MAX_QUEUE_SIZE is reached will be processed in batch mode.
	Allows controlling engine memory usage, therefore improving the performance.
Max Queue Size	Maximum number of events buffered on an engine event queue.
	When this number is exceeded, real time events are discarded and the engine restarts based on the restart timer (TIMEOUT_RESTART), in order to process the unprocessed persistent events using batch mode. This parameter can be useful for controlling the engine's memory usage. If not set, the default value for this parameter is no limit on queue size.
	Allows controlling engine memory usage, therefore improving the performance.
Pricing Environment	Pricing environment used by the engine. If not set, the default Pricing Environment of the user running the engine will be used.
Number of Threads	Number of concurrent threads used in an engine for processing. Increase the thread count for better performance.
TIMEOUT_RESTART	Number of seconds to wait before an engine restarts after MAX_QUEUE_SIZE has been reached. The default value is 3600 seconds (1 hour).
TWO_PHASE_ENGINE_NUMBER_OF_RETRY	Number of times the engien will retry to process the list of events in the TwoPhaseEngine used by the Inventory engine, Margin Call Position engine and Position engine. Default value is 3.

2.3 Starting the Margin Call Engine

The Margin Call Engine is started in the Engine Manager.

The margin call engine publishes message events (PSEventMessage) for the margin call statements, PSEventMarginCallCashPosition and PSEventMarginCallSecPosition events.

Whenever the margin call engine is started, it processes all outstanding events to which it subscribes that were published while it was inactive.

▶ Refer to Calypso Web Admin documentation for details.

3. Generating Margin Calls

Margin calls are generated by the Collateral Manager based on collateral data, trades (native Calypso trades, or imported collateral exposures), and existing margin call positions. Margin call positions are calculated by the Margin Call engine.

The Margin Call engine and Transfer engine are run in the background by your administrator. The Message engine should also be running for generating margin call statements, and the Inventory engine should be running for generating Inventory positions for cash and security collaterals.

The Collateral Management module allows you to use trades for collateral management purposes which have been created outside of the Calypso system, and are imported into the Calypso system as Collateral Exposure trades. Margin calls can be computed on those trades as on any other native Calypso trade.

This applies, for example, to initial margins imported from the clearing houses, in the context of OTC clearing.

Which inventory positions are generated is controlled through the *InventoryPositions* domain value.
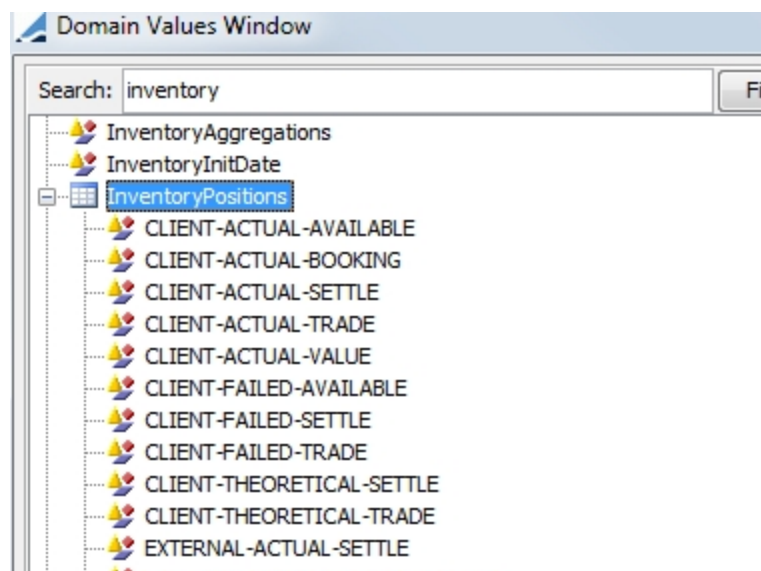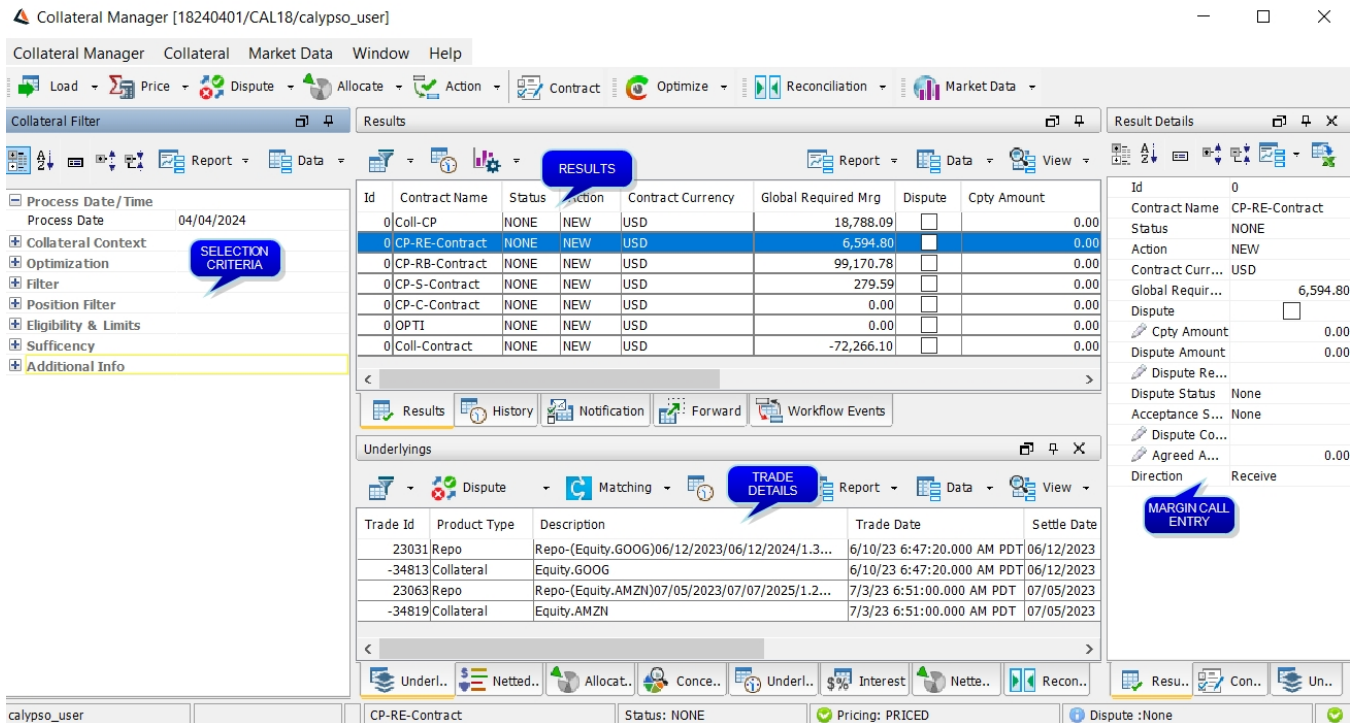
Which margin call positions are generated is controlled through the *MarginCallPositions* domain value.
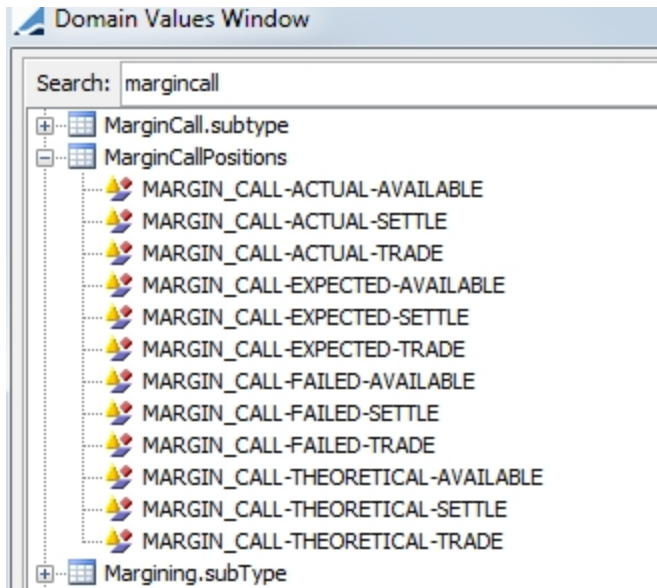
▶ Please refer to the Calypso Cash Management documentation for details on computing inventory positions.

3.1 Collateral Manager Window

Choose **Processing > Collateral Management > Collateral Manager** (menu action `reporting.margincall.MarginCallDesktop`) to display the Collateral Manager.
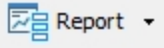
Below is an overview of the Margin Call Manager layout.
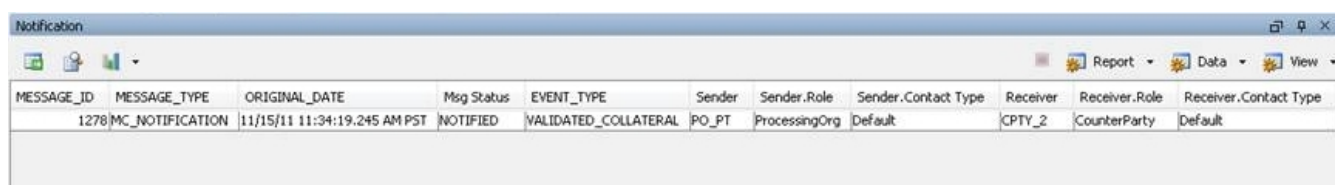
- Selection criteria to load margin call contracts are defined in the Selection Criteria area.

- Margin call contracts are loaded in the Results panel, and the associated trades are loaded in the Underlyings panel.

  The Underlyings panel also displays the margin call trades once they are generated.

  A *Last User* column is available in the Results panel which displays the username of the user who has applied the last workflow action.

- Once the margin calls are computed, they can be viewed in the Trade Details area. There is one Margin Call Entry for each contract. Select a contract in the Results panel to view the corresponding Margin Call Entry. The Trade Details area contains the following panels:

  – The Underlyings panel allows you to view the actual margin call details. You can link a template to the

    contract so that it will be loaded by default when the contract is loaded (**> Link Template to Contract**).

  – The Allocation panel displays allocation details after allocation is completed.

  – The Interest panel displays the interest calculation details on cash margins between the previous margin call date and the process date.

  – Details History displays the margin call details.

  – The Concentration panel displays the Concentration Limits data.

– The Netted Positions panel displays a global view of the netted positions and the current allocations. You are able to select multiple contracts at one time for this view.

- The following panels are also available:

  – The Forward panel displays projected collateral requirements over a period specified in the Forward Margin options - The default is 5 days. You can double-click a projected margin call to view the trade details.

  – The History panel displays the history of trade-level disputes over a period specified in the History options - The default is 7 days in the past..

    ▶ See Disputing a Margin Call at Trade Level for details.

  – The Notification panel displays details regarding any notification that has been sent on the margin call contract

MESSAGE_ID	MESSAGE_TYPE	ORIGINAL_DATE	Msg Status	EVENT_TYPE	Sender	Sender.Role	Sender.Contact Type	Receiver	Receiver.Role	Receiver.Contact Type
1278	MC_NOTIFICATION	11/15/11 11:34:19.245 AM PST	NOTIFIED	VALIDATED_COLLATERAL	PO_PT	ProcessingOrg	Default	CPTY_2	CounterParty	Default

- If any of the desired panels are not displayed, select **Window > Show View** to select the panel you wish.
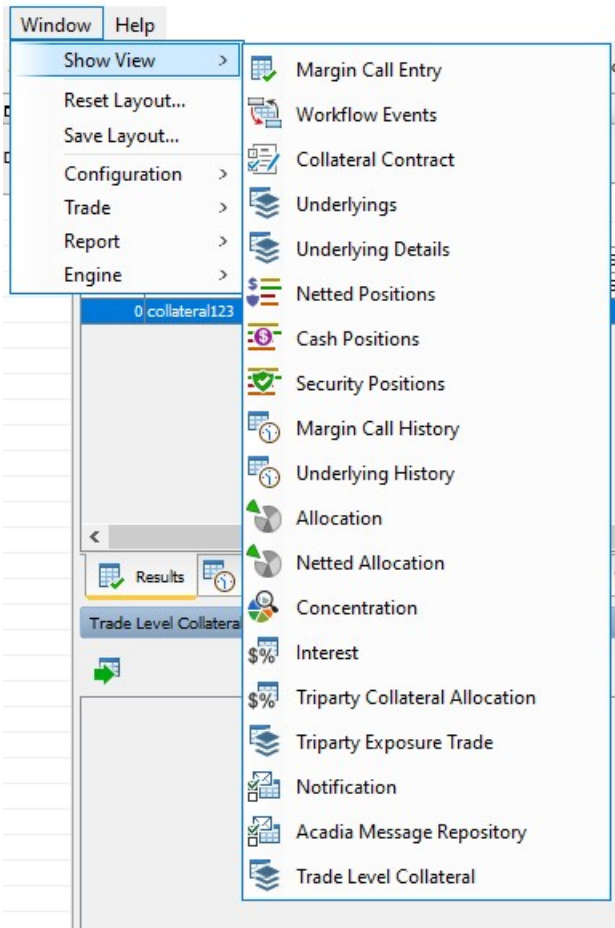
- The results can be filtered to display Master contracts, Exposure Groups, Hide Inactive Exposure Groups or Display at Margin Call Level. Display at Margin Call Level is used to display the Margin Call entry at the level of the call, regardless of whether it is at contract or exposure group level.
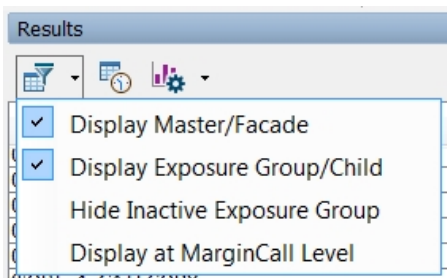
3.2 Loading Margin Call Contracts

Enter selection criteria to filter the margin call contracts and trades that you want to process. The selection criteria are described below.

You can choose **Data > Configure Filter** to define a filter template and manage filter templates from the Report menu. The filter criteria are described in Template Manager below.

You can also select **Collateral Manager > Preferences** to load pre-defined search criteria via the Template Manager.

Either select a contract or contracts to load and click Load Selected, or click Load All to load all of the contracts that fulfill the search criteria.
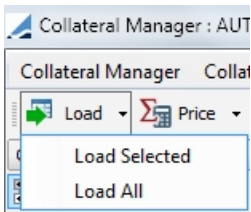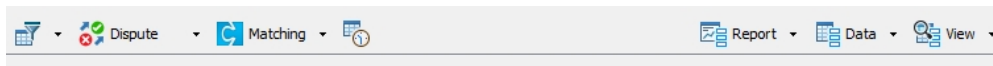

The default action when simply clicking the Load button is Load All.

» You can configure the display and create report templates using the Report, Data, and View menus from the Collateral Manager, and Margin Call Entry area.
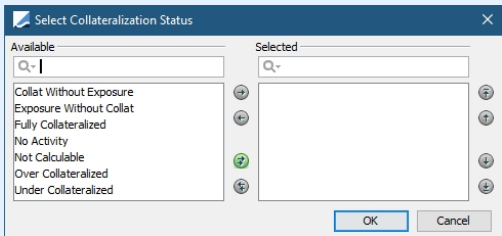

   Trades can be excluded from the calculation by checking the Excluded checkbox in the Details panel.

» Once the contracts are loaded, you can select a contract and choose **Market Data > Check** to check that all required market data are available on the "Trade Date", and enter missing market data.

» With the Refresh option, you are able to load contracts for one day, and then change the date and refresh a contract or contracts. By doing this, you would have contract entries of different days loaded together. To prevent this, set the Collateral Context attribute READ_ONLY_MC_FILTER to True. This prevents the date from being changed when refreshing.

Search Criteria Details

Search Criteria	Description
Process Date / Time	
Process Date	Defaults to the current date - Effective date of the margin calls. All valuation date and time information is specified in the Margin Call Contract.
Collateral Context	
Collateral Context	Select a desired Collateral Context configuration to use. If a Collateral Context has been chosen in the Collateral Manager Template, it will appear here. The Collateral Context can be

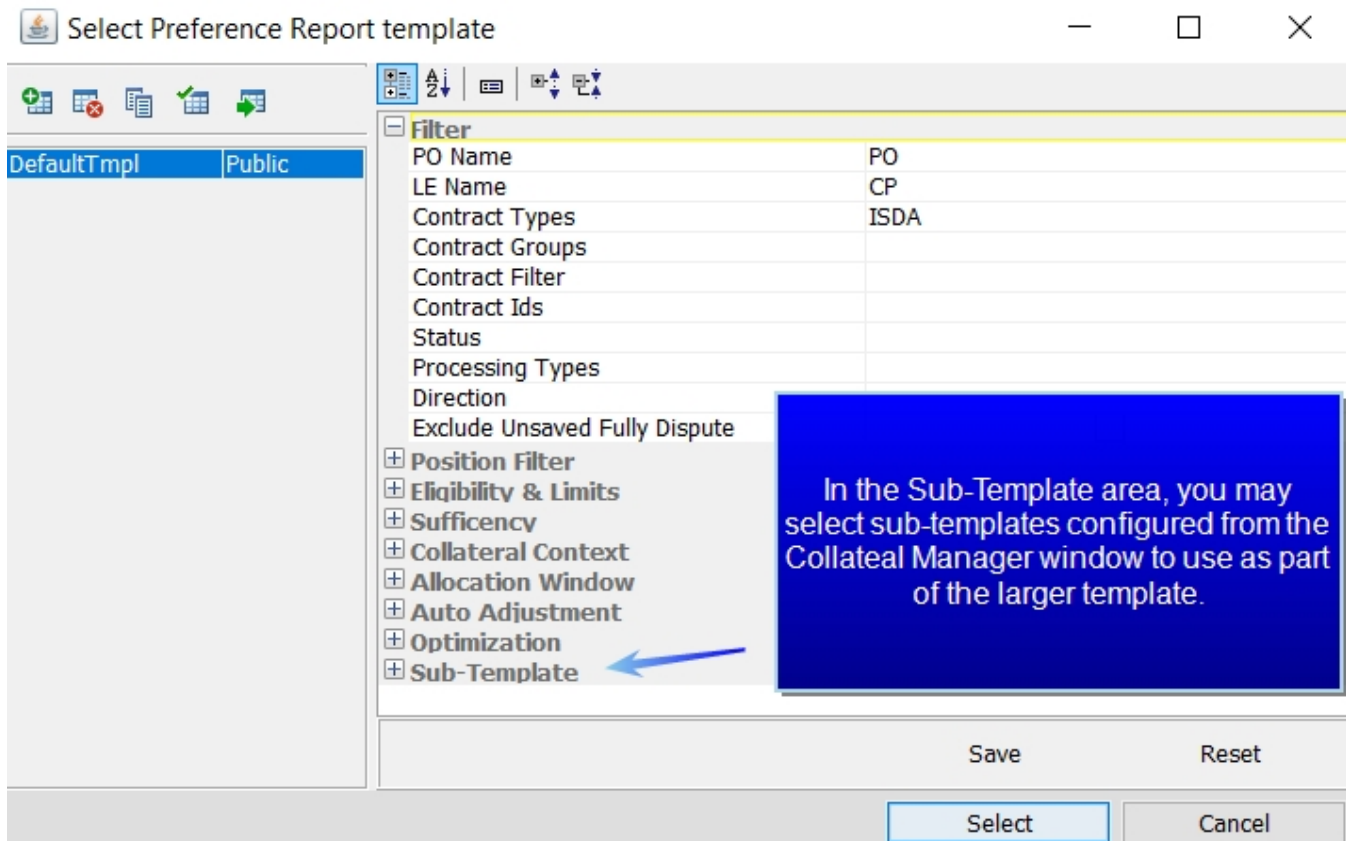| Search Criteria	Description
	manually changed here as well, depending on the desired pricing scenario.
	(NOTE: The Pricing Environment Type is chosen in the Collateral Context. The pricing environment corresponding to that type is chosen in the Details panel of the Margin Call Contract.)
Filter	
PO Name	Select a processing organization, or leave empty for all.
LE Name	Select a legal entity name, or leave empty for all.
Contract Types	Select a contract type, or leave empty for all.
Contract Groups	You may select a contract group, defined in the Collateral Context Currency Definition panel, to load contracts based on that group currency.
	NOTE: If no group is selected, contracts with different group currencies will be loaded and there could be a mix of currencies in the *Remaining Mrg (Group Ccy)* column.
Contract Filter	Select a static data filter if desired.
Contracts Ids	Select individual contracts, or leave empty for all.
	NOTE: When populated, this filtering criteria overrides any other criteria. Whatever is set in this field, whether they be master contract Ids or child contract Ids, they system will load the entire "group" (master and child).
Status	Select a contract status, or leave empty for all.
Processing Types	Processing Types allow for the ability to generate margin call entries on valuation only days and process substitutions independently. The choices for this criteria are:
	• Processing - (default) An entry of type *processing* is generated when the valuation day matches the current day.
	• Valuation - The *valuation* processing type is generated when the current day is not a valuation day. The calculation method is the same as Processing, but allocations cannot be executed.
	• Substitution - The *substitution* processing type can be generated on any day, used to handle substitution independently from Processing. In the calculation method, the required margin is equal to the sum of the allocations.
	Processing Type can also be chosen as a Workflow Product and Workflow Subtype in the Collateral Context. Refer to Collateral Context for more information on how these affect the Processing Type.
Direction	Filter by Pay or Receive contracts
Exclude Unsaved Fully Dispute	This filter selection applies to fully disputed entry types. If set to true, only Fully Disputed processing types with a non-zero Id will be displayed in the Results panel.
	If set to false (left blank), fully disputed entries are displayed for every contract loaded,

Search Criteria	Description
	regardless of whether the contract has been saved or not.
Dispute	If the checkbox is enabled, then this filter displays all the disputed calls. If the checkbox is disabled, then both disputed and non-disputed calls are loaded.
Position Filter	
Note: For performance reasons, this filter only works if a Processing or Valuation entry has been priced and saved for a given date. The filtering is based on what is in the margin call position (netted position). It does not filter on underlying trades or today's allocation/margin call trades. To be filtered, entries must be saved.	
Position Type	Options are Posted (load only short positions, positions that were posted by the PO) and Held (load only long positions, positions posted by the CP)
Cash Position	Select the Cash Position checkbox to choose currencies to filter margin call positions in cash of that currency
Currency	
Security Position	Select the Security Position checkbox to choose a product code, such as ISIN, CUSIP, etc....
Product Codes	Enter the security's reference in the Security field.
Security	
Eligibility & Limits	
With Ineligible Collateral	Choose whether to include contracts with ineligible collateral.
With Limit Breach	Choose whether to include contracts with a limit breach.
Sufficiency	
Collateralization Status	Choose to include certain collateralization statuses in the filter. These statuses are described in Margin Call Entry Columns.
Optimization	
Configuration	Select an optimizer from the those that were created in the Collateral Optimization Configuration window, which is accessed in the Margin Call Contract.

3.3 Template Manager

From the Template Manager, you are able to select a template for Collateral Manager as well as configure individual fields and templates for the panels. To display the Template Manager, select **Collateral Manager > Preferences**. From this window, you are able to:

- Edit a template

- Create a new template -

- Delete a template - select the template on the left side of the window and click

- Designate a default template - select the template on the left side of the window and click

- Update a template with current window settings - select the template on the left side of the window and click

- Make a copy of an existing template - select the template on the left side of the window and click

» To display a template in Collateral Manager, select the template on the left and click **Select**.

» When saving a new template, you may designate whether it should be private or public.

Below is a description of the definition criteria fields in the Template Manager.

Field	Description
Filter	
PO Name	Select a processing organization, or leave empty for all.
LE Name	Select a legal entity name, or leave empty for all.
Contract Types	Select a contract type, or leave empty for all.
Contract Groups	You may select a contract group, defined in the Collateral Context Currency Definition panel, to load contracts based on that group currency. Note: If no group is selected, contracts with different group currencies will be loaded and there could be a mix of currencies in the *Remaining Mrg (Group Ccy)* column.
Contract Filter	Select a static data filter if desired.
Contracts Ids	Select individual contracts, or leave empty for all. Note: When populated, this filtering criteria overrides any other criteria. Whatever is set in this field, whether they be master contract Ids or child contract Ids, they system will load the entire "group" (master and child).
Status	Select a contract status, or leave empty for all.
Processing Types	Processing Types allow for the ability to generate margin call entries on valuation days only and process substitutions independently. The choices are: • Processing - (default) An entry of type *processing* is generated when the valuation day matches the current day and is a business day. There is no entry on non business days. • Valuation – An entry of type *valuation* is generated when the current day is a non business day only. The calculation method is the same as Processing, but allocations cannot be executed. • Substitution - An entry of type *substitution* can be generated any day. It is used to handle substitutions independently from processing. In the calculation method, the required margin is equal to the sum of the allocations. Processing Type can also be chosen as a Workflow Product and Workflow Subtype in the Collateral Context. ▶ Please refer to Collateral Context for more information on how these affect the Processing Type.
Direction	Filter by Pay or Receive contracts
Position Filter	

| Field	Description
Note: For performance reasons, this filter only works if a Processing or Valuation entry has been priced and saved for a given date. The filtering is based on what is in the margin call position (netted position). It does not filter on underlying trades or today's allocation/margin call trades. To be filtered, entries must be saved.	
Position Type	Options are Posted (load only short positions, positions that were posted by the PO) and Held (load only long positions, positions posted by the CP)
Cash	Select currencies to filter margin call positions in cash of that currency
Product Types	Choose a product code, such as ISIN, CUSIP, etc....
Securities	Enter the security's reference
Collateral Context	
Collateral Context	Select a desired Collateral Context configuration to use for the optimization.
Allocation Window	
Positions Breakdown	When the criteria is selected, Positions in the Netted Positions tab will be broken down by the selected criteria. For example, if "Book" is selected and two USD cash MC Trades are made in different books, you will see two separate Positions, one in each Book. When this field is left bank, all USD Positions will appear as one aggregated Position.
Check Allocation Position	When checked, when the collateral is being paid, the Margin Call process displays only the instruments (cash or securities) that are eligible to be given as collateral as specified on the Margin Call contract that have an actual inventory position. If this is not checked then all eligible securities are displayed, without reference to whether an actual position is held.
Validate Eligibility	When selected, eligible currencies and securities are considered during allocation. If non-eligible currency or security is selected for allocation, a warning message is displayed.
Allocation	Select an Optimization Configuration from those that were created in the Collateral Optimization Configuration window. You may also choose the type of allocation, whether allocate, analyze or check market data for this template.
Netted Allocation	Choose a Netted Allocation report template.
Concentration Limits	Choose a Concentration Limits report template.
Concentration History	Choose a Concentration History report template.
Pending Substitution	Choose a Pending Substitution report template.
Auto Adjustment	
Used to provide a default value in the Auto Adjustment field on the Allocation window.	
Pay	The following options are available when PO is paying:

Field	Description
	None - no automatic calculation
	Return - Return is done automatically when possible using previous position currency. New Margin allocation is manual.
	Return & New Margin - Return is done automatically when possible using previous position currency. New Margin allocation are done in the default currency. If no auto adjustment currency has been defined on the Margin Call contract, no allocation is created.
	Standard - Default Currency - Everything is done using the default currency with the ability to explode the Margin and Return.
Receive	The following options are available when PO is receiving:
	None - no automatic calculation
	Return - Return is done automatically when possible using previous position currency. New Margin allocation is manual.
	Return & New Margin - Return is done automatically when possible using previous position currency. New Margin allocation are done in the default currency. If no auto adjustment currency has been defined on the Margin Call contract, no allocation is created.
	Standard - Default Currency - Everything is done using the default currency with the ability to explode the Margin and Return.
Optimization	
Configuration	Choose an Optimization Configuration
Allocation	Use optimization results as an allocation or open results as a standalone optimization
Log	Select this checkbox to produce a log for the optimization
Sub-Template	
Sub-templates are the templates that are designated in each panel of the Collateral Manager window. In this area, you are able to select one of those pre-defined templates for use in the larger template.	
Each sub-template has its own search criteria.	

3.4 Pricing and Allocation

By default when you click the Price button, you must then apply the NEW action in order to save the priced contract. You must also perform a save function after an allocation is applied from the ALLOCATE window.

To allow the save action to be performed automatically after a contract is priced or allocation is applied, you may link a workflow action directly to these two buttons.
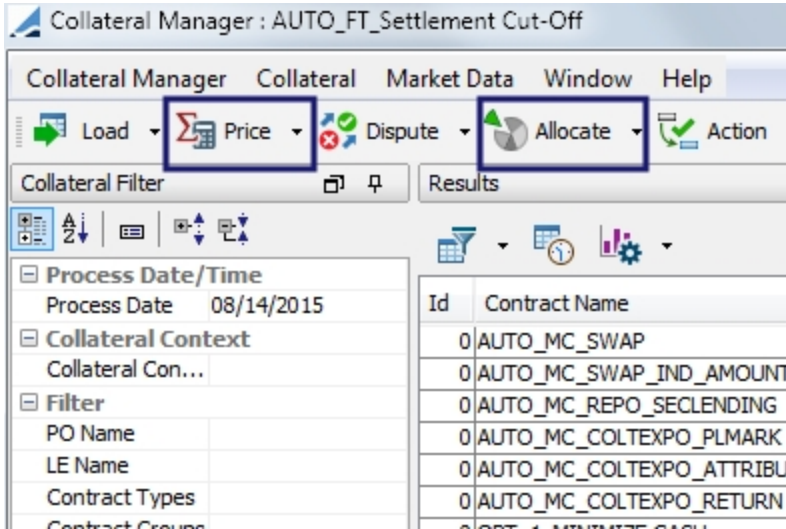
This function is available through the Collateral Context window. Refer to the documentation on this window for details.

To see details on the Allocation window, see Constituting a Margin.

You may price and re-price all of the contracts or selected contracts through the Price drop-down menu.
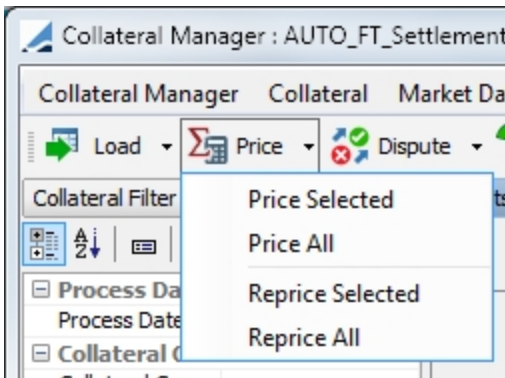
You may also choose to deactivate the Price button and price all contracts through the Load menu options. To do this, set the HIDE _PRICE_BUTTON context attribute in the Collateral Context window to True.

To improve performance, *collateralsharedserver.bat* can be used to price/reprice contracts in real time for Exposure trades and Margin Call trades. This server requires the Collateral Pricing Engine to be started first.

3.5 Collateral Management Workflow

There is a default workflow supplied with the Collateral Management module. This workflow is specific to the handling of margin calls. The workflow is defined under the Collateral folder and supports standard Calypso workflow features. To install this workflow, select Collateral Workflow when running Execute SQL during your Calypso install.
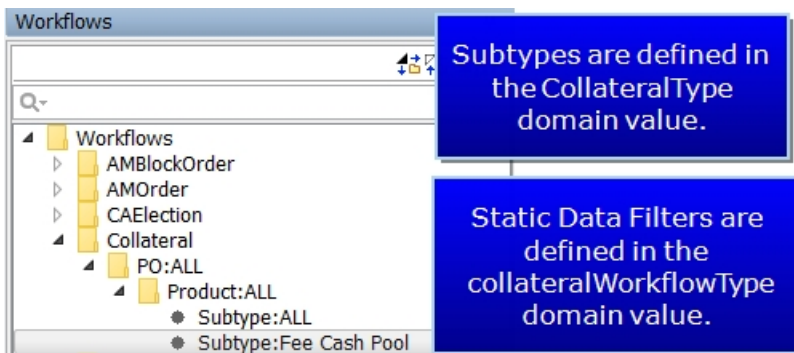
Below is a graph of an example workflow.
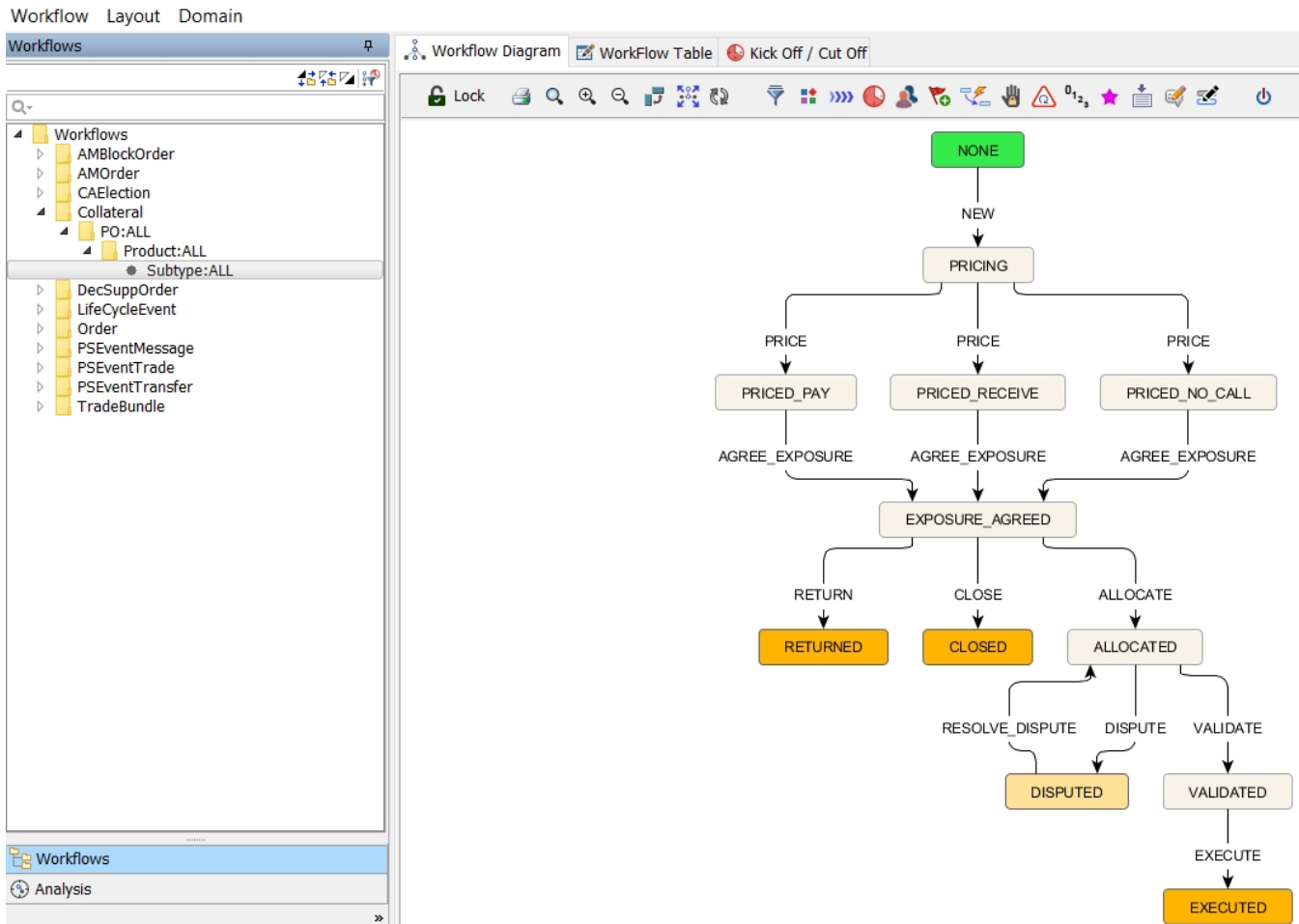
You may add or edit workflow rules to suit your business purposes.

» Workflow rules are listed under the domain value *workflowrulecollateral*

» Workflow statuses are listed under the domain value *CollateralStatus*

» Workflow actions are listed under the domain value *CollateralAction*

» The following business actions are triggered by workflow rules: Execute, Close and Return.

» If a rule applies at all transitions in the workflow, you may add the rule to the domain *mandatoryCollateralrule*. Rules added to this domain value apply to each transition of the collateral workflow automatically rather than the rule needing to be added to each transition.

» A static data filter can be applied to the entire workflow. The filter must have the suffix *_collateralWorkflow*. This filter needs to be designated in the *collateralWorkflowType* domain value. When entering it in the domain, omit the *_collateralWorkflow* suffix. For example, if the filter is called *MyFilter_collateralWorkflow*, the domain value is just *MyFilter*.

   Example:

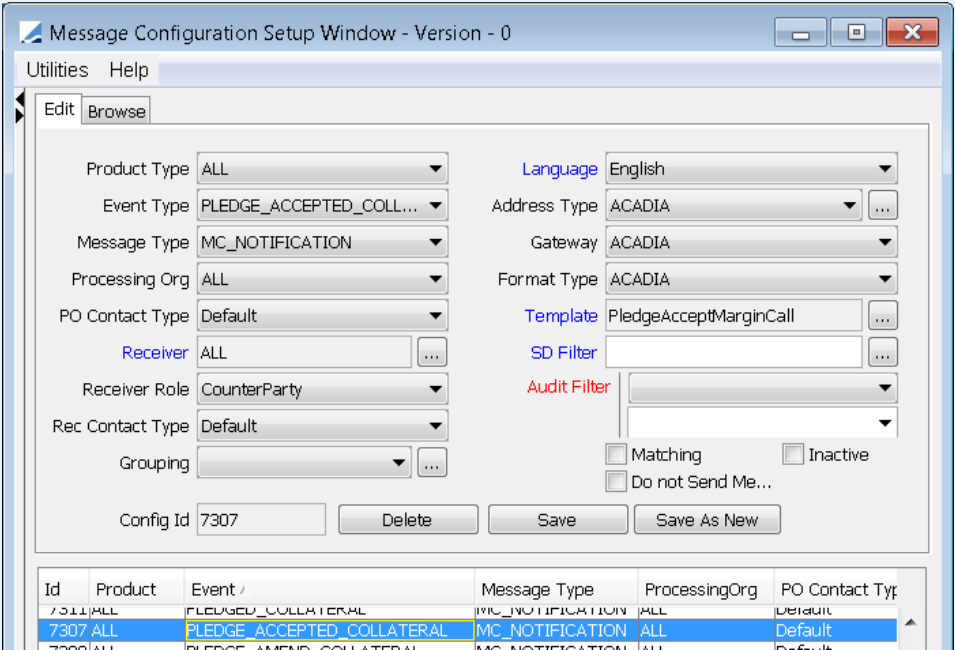   – Create a static data filter *MccId1234_collateralWorkflow*

– Add the domain value *MccId1234* to the *collateralWorkflowType* domain

– Add the domain value *MccId1234* to the *CollateralType* domain

– Configure workflows for the workflow subtype *MccId1234*

» You may aggregate the collateral workflows by product and subtype. Selecting a product and subtype under the Workflow heading in the Details panel of the Margin Call contract will process the contract through the corresponding workflow. The subtype comes from the domain value *CollateralType*.

» The system checks for an applicable static data filter first, then it looks for the Product/Subtype designation in the Margin Call Contract.

The default Collateral workflow rules are described below.

Workflow Rule	Description
AutoAdjust	Allocation is done using the default currency with the ability to explode the Margin and Return. (Used in conjunction with Explode Return/New Margin field in Eligible Currencies Definition window in Margin Call contract.) Calypso recommends using this rule for single currency contracts only.
AutoReturn	Return is done automatically when possible (partial return in single currency, full return), using previous position currency. New Margin allocation is manual. Dispute scenarios are not supported with this rule.
AutoReturnAndAdjust	The Return is done automatically when possible (partial return in single currency, full return) using the previous position currency. New Margin allocation is done in the default currency. If no auto adjustment currency has been defined on the Margin Call contract, no allocation is created. Dispute scenarios are not supported with this rule.
AgreeDispute	Agree to a contract level dispute amount and set the counterparty amount equal to the processing org amount.
Checkbook-access	Returns false if the current user has no access to the allocated books.

Workflow Rule	Description
CheckDispute	Returns false if the current dispute status is OPEN.
CheckFullAllocation	Returns false if the contract is not fully allocated.
	Checks both the pending allocations and the executed allocations for validation.
CheckMultiEntryPosition	Prevents an allocation from being applied if the allocation > previous margin of the processing entry + (daily margin) of all non-selected entries.
	If the process is run on the processing or valuation entry, the daily margin of the substitution entry is checked. If the process is run on the substitution entry, the daily margin of the processing/valuation entry is checked.
CheckNoCall	Returns true if the required margin is 0.
CheckPay	Returns true if the processing org must pay the margin
CheckPrice	Returns false if the contract is not fully priced
CheckRecieve	Returns true if the counterparty must pay the margin
Close	Returns the current positions and closes the contract
	Note: Closing a contract is available from the contract level only. A contract cannot be closed at the Exposure Group level, even if calling is done at that level.
Execute	Creates margin call trades. Returns false if no allocation is set.
ExecuteUpdate	Creates margin call trades or updates existing trades if possible. Returns false if no allocation is set.
GenerateEvent	This rule should be used in the case of multiple workflow transitions in STP to generate an intermediary event.
	For example, if the following workflow transitions are both STP:
	PLEDGED_REC - PLEDGE_ACCEPT - PLEDGE_ACCEPTED
	PLEDGED_ACCEPTED - EXECUTE - EXECUTED
	And, the following message is generated from PLEDGE_ACCEPTED status:

Workflow Rule	Description
	![Message Configuration Setup Window screenshot] • If the *GenerateEvent* workflow rule is set on PLEDGED_REC - PLEDGE_ ACCEPT - PLEDGE_ACCEPTED, when the margin call entry moves from PLEDGED_REC to EXECUTED, the PledgeAcceptMarginCall message will be generated. • If the *GenerateEvent* workflow rule is not set on PLEDGED_REC - PLEDGE_ ACCEPT - PLEDGE_ACCEPTED, when the margin call entry moves from PLEDGED_REC to EXECUTED, the PlegeAcceptMarginCall message will not be generated.
ResetDispute	Resets contract level dispute.
ResolveDispute	Resolves contract level dispute.
ResolveDisputeWithCPAmount	Resolves contract level dispute with the counterparty amount. Used to auto accept the Counterparty Amount when Counterparty Amount is fed via Data Uploader. This rule confiders the dispute tolerance when determining whether to tick the dispute flag and set the dispute status. This rule works in conjunction with UpdateDisputeFields.
ResolveDisputeWithPOAmount	Resolves contract level dispute with the processing org amount.
Return	Returns current positions.
UpdateDisputeFields	Used to compute the related dispute fields when Counterparty Amount is entered via Data Uploader. This rule mimics what happens when the Counterparty Amount is entered

Workflow Rule	Description
	manually in the Collateral Manager GUI.
	The ResolveDisputeWithCPAAmount workflow rule works in conjunction with this rule.

NOTE: Sending of notifications is configured through the message configuration setup.

3.5.1 General Collateral Statuses

Described below are some commonly used collateral statuses. Collateral statuses and workflows can be customized to fit your needs.

NONE

When first loading a contract in Collateral Manager, it appears in the status NONE.

PRICING

By clicking the Price button, the status moves to PRICING. This status means that Calypso has been able to do the following:

- Price all of the underlying trades
- Calculate the trade exposure
- Value any previous collateral held by either party.

All of the market data must be available. To check market data select **Market Data > Check**.

The quotes used for pricing are the quotes as of the 'trade date' on the Collateral Manager.

EXPOSURE AGREED

The EXPOSURE AGREED status indicates:

- The value of the collateral to be paid / received is agreed with the counterparty.
- The actual collateral movements can be created by creating the Margin Call trades.

ALLOCATED

The ALLOCATED status means that the collateral movements have been agreed to and the only outstanding action is to create the Margin Call trades in Calypso.

The workflow is moved to this status after allocation is applied through the Allocation window or allocation is done through Optimization.

VALIDATED

The VALIDATED status means that the Margin Call process for that contract (for that day) has been completed and that the Margin Call trades have been created. Created margin call trade Ids appear in the Allocation panel.

Trade Id	Direction	Underlying	Type	Description	Trade Date	Settlement Date	Contract Currency	Contract Value	Pro
210930 ▾ Receive		Cash	Margin	GBP	08/18/2015	08/18/2015	USD	10,720.00	
210931 ▾ Receive		Security	Margin	BondBond A Simple/0D/01/02/2023/0%	08/18/2015	08/18/2015	USD	968,000.00	Bon
210932 ▾ Receive		Security	Margin	BondAA 5.55 01Feb17/0D/02/01/2017/5.55%	08/18/2015	08/18/2015	USD	152,280.00	Bon

3.5.2 Workflow Events

A Workflow Events panel is available which displays workflow events for a contract. This panel can also be used to inform the user of new workflow updates. This is helpful when multiple people are working on the same perimeter. This is also helpful for Acadia users, as Calypso receives updates frequently and the user may not know if a reload should be done to update to the latest status. If an update is needed, it is indicated by the [icon] in the bottom right corner of the window.

For example, in Collateral Manager the user sees:
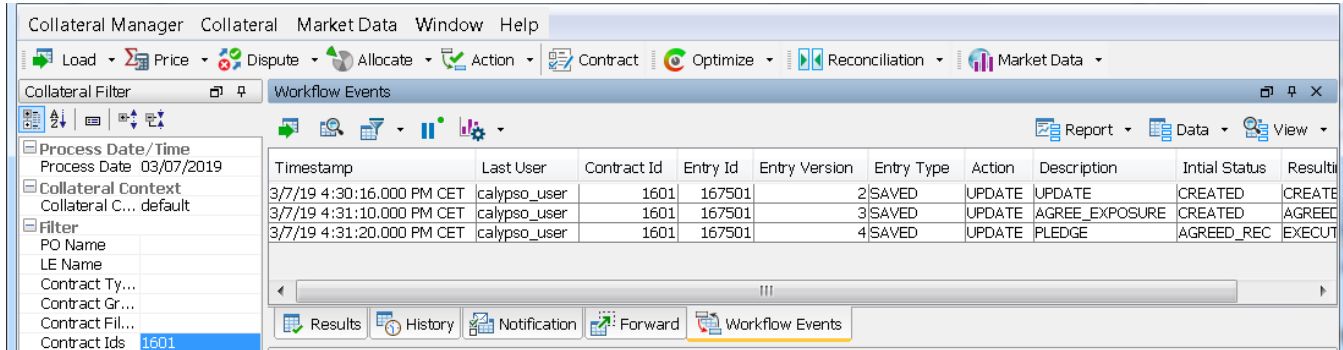
In the Workflow Events panel for this entry, the user sees:

There are three updates on entry #167501. Double-clicking on any of these lines automatically takes the user back to the Results panel and the entry is displayed in its latest status:

Going back to the Workflow Events panel, it is now empty as there are no more updates and the latest version is in the Results panel.

There are two columns available to display Initial Status and Resulting Status.

Note: If User 1 is filtering in Collateral Manager based on status A and there are no entries in that status, the Workflow Events panel will be empty. If User 2 moves one entry from status A to status B, a line appears in the Workflow Events tab of User 1. If User 1 double-clicks on it, it appears in their Results tab.

If User 1 is filtering on Status B and has one entry displayed in the Results panel, and User 2 moves the entry from status B to status A, this displays on the Workflow Events panel. If this line is double-clicked in the Workflow Events panel, the entry will be removed from User 1's view, as it is no longer in status B.

3.5.3 DISPUTED Statuses

The status DISPUTED is independent from the collateral workflow. You are able to put the trade into DISPUTED status by using the Action button. If your status is appropriate (ALLOCATED in the workflow example), you may select the Action button to apply the DISPUTE workflow action and place the contract in DISPUTED status. This will only change the status of the contract. The actual dispute information must be entered in the Margin Call Entry area.
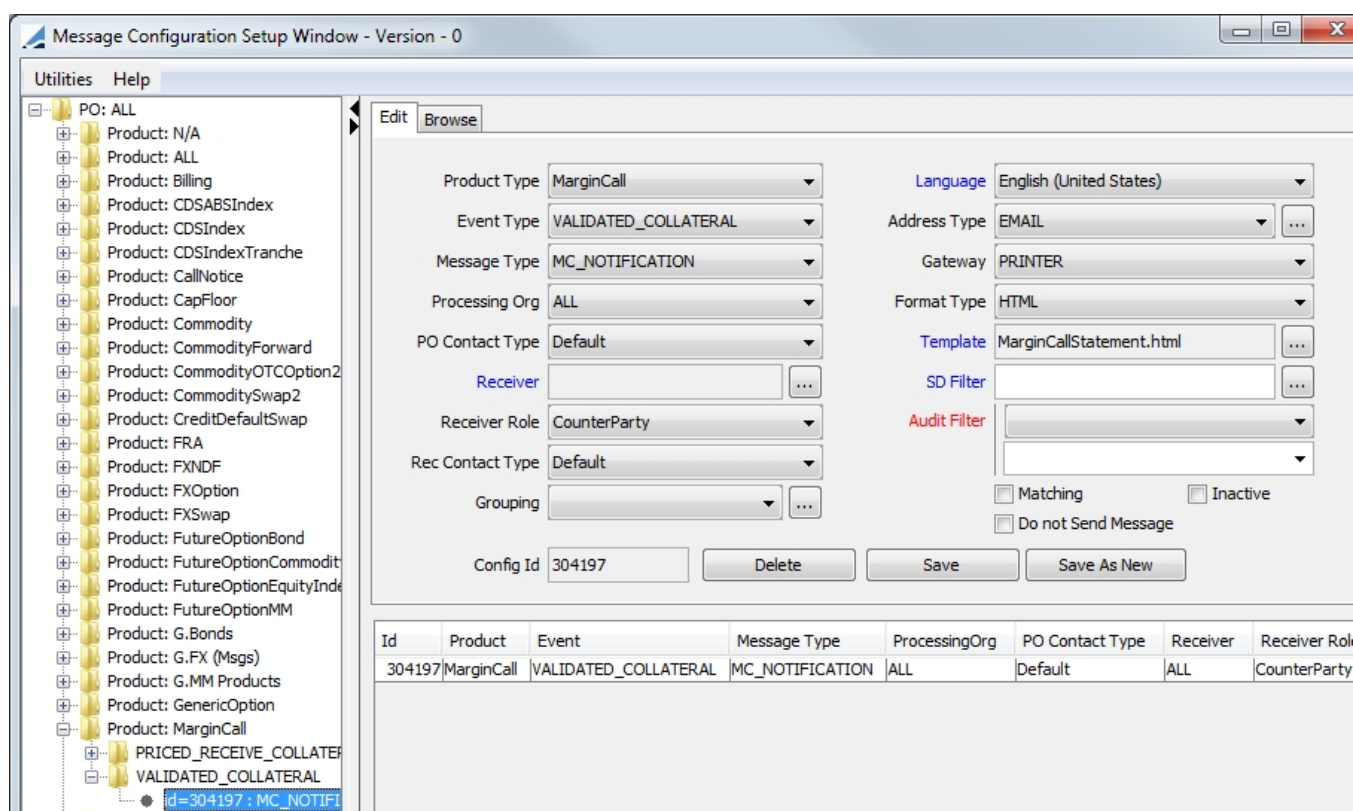
For details on disputes, refer to Disputing a Margin Call at Contract Level and Disputing a Margin Call at Trade Level.

3.6 Messages and Notifications

The Calypso Collateral module uses the standard Calypso messaging set up. For detailed information on this setup, please refer to the Calypso Messaging documentation.

In the following example, a message type MC_NOTIFICATION is sent when status VALIDATED is reached.

Note in this example, the *EventType* domain must be updated to reflect the status name, *STATUS*_COLLATERAL. (In the example below, VALIDATED_COLLATERAL.)

3.6.1 Notification Status

Notification statuses are listed under the domain value *MarginCall.NotificationStatus*.The Notification Status column may be updated manually or by using the following message workflow rule in calypso.

- UpdateMarginCallEntryMessageRule - Updates the Margin Call Entry Notification status.

3.7 Generating Margin Calls

After loading the desired Contracts in Collateral Manager, click or choose **Collateral > Price** to calculate the margins.

Once the trades have been loaded, the system calculates the collateral exposure on each trade, (according to the appropriate methodology for each trade type), and calculates a "Net Balance" of the total of all of the relevant trade exposures.

This "Net Balance" is shown in the Margin Call Entry area, and is used as the starting point for the Margin Call Collateral calculation. (Note: The information displayed in the Margin Call Entry area can be configured to suit your needs.)

By default, a cash margin is computed for the default currency specified in the contract. If you want to create a security margin, or create a cash margin in a different currency, choose **Collateral > Allocate**.

See Constituting a Margin (Allocation) for details.

Id	188,002
Contract Name	AUTO_MC_COLTEXPO...
Status	PROCESSED
Action	CALCULATE
Contract Currency	GBP
Threshold Amount	-22,800.56
Global Required Mrg	-4,550,300.00
Returned Margin	-0.00
Direction	Pay
Net Balance	-4,560,112.06
Cash Margin	0.00
Security Margin	0.00
Constituted Mrg	-4,550,340.39
Dispute	☐
Cpty Amount	0.00
Dispute Amount	0.00
Dispute Reason	
Dispute Status	None
Acceptance Status	None
Dispute Comment	
Agreed Amount	0.00
Prev Cash Mrg	0.00
Prev Cash Mrg Date	
Prev Sec Mrg	0.00
Prev Sec Mrg Date	

All fields with the ✎ icon can be edited

The Calypso Margin Call Calculation is as follows:

- **Margin Required** = Net Exposure after applying Threshold (Amount of allowable exposure)

- **Total Prev Margin** = Prev Cash Margin + Prev Security Margin

- **Total Margin** = Margin Required – Total Prev Margin, which is rounded as specified in the Margin Call Contract.

  If Total Mrg > MTA, Required Margin = Total Margin

  If Total Mrg <= MTA, Required Margin = 0

- *Previous Cash and Security Margins*

  You can view the previous cash and security margins broken down into actual (settled) and unsettled positions, based on the Back Positions - Refer to Calypso Inventory Engine documentation for details on computing actual and unsettled positions.

- *Margin Call Hierarchies*

    The margin calls are calculated for a given hierarchy, and generated at the root contract level. For example, a root contract is defined between PO1 and CPTY1, and children contracts are defined between children of PO1 and children of CPTY1. The margin calls are calculated for all children and aggregated at the PO1/CPTY1 level.

    In the Margin Call report, when loading a contract, all children are loaded too. You can identify the root contract using the static data filter element MARGIN_CALL_IS_PARENT.

    You can view the contract hierarchy when you are in Aggregation View (**View > Set Table > Aggregation**), provided you have added the columns Hierarchy Level 0 through 9 to the column configuration, sort columns and subheadings.
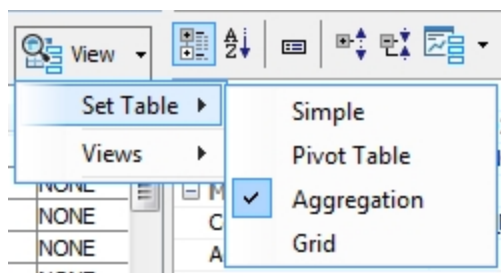
The actual margin call trades are generated upon Allocation. They are displayed in Allocation panel.

The following trade transfer types can be generated:

- Margin Call trade with type COLLATERAL for each cash margin.

- Margin Call trade with type SECURITY for each security margin.

- Margin Call trade with type INTEREST or ROLLED_INTEREST (if interest rolling is setup) for each interest calculation.

Note: To see rolled interest reflected on Netted Positions and Global Required Margin, add the value ROLLED_ INTEREST to the *flowType* domain.

The margin call positions will only be updated if the margin call trades have been authorized (VERIFIED status).

① **NOTE: The modified Margin Call Trade window can be accessed using the domain value "DisplayMarginCallTradeWindow" and its associated value "NewMarginCallTradeWindow".**

3.7.1 Margin Call Entry Columns

Some of the most commonly used columns in the Margin Call Entry area are described below. Columns can be configured by selecting **Data > Configure Columns**.
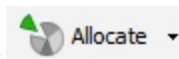
Columns	Description
(Daily Cash Mrg)	Cash margin previously saved for that day.
(Daily Interest)	Interest amount previously saved for that day.
(Daily Sec Mrg)	Security margin previously saved for that day.
Agreed Amount	Enter the amount that has been agreed by both parties.
Cash Margin	You can double-click this field to modify the amount (subject to the Minimum Adj and Maximum Adj amounts / percentages entered in the margin call contract.)
	This represents the amount of cash margin to be paid or received on the process date.

Columns	Description
	▶ See Constituting a Margin for details.
Cash Movement	Total amount of cash (including the interest amount). This field is used to create the margin call trades (one for the margin call amount and one for the interest amount).
Collateralization Status	To simplify the end of day controls on Collateral activity, the Collateral Status column can be used to indicate whether a contract is fully collateralized, under collateralized or over collateralized. The column contains several options which are automatically updated based on the following logic: • *Non-Calculable*: If no setup is defined for the Tolerance, Fully Priced = False or Tolerance cannot be calculated (FX rate contract currency/base currency missing) • *Fully Collateralized*: Fully Priced = True and Remaining Mrg (or Actual Outstanding Margin) is in [-Tolerance;Tolerance] • *Under Collateralized*: Fully Priced = True and Direction = Pay/Remaining Mrg (or Actual Outstanding Margin) in]-∞;-Tolerance[OR Fully Priced =True and Direction =Receive/Remaining Mrg (or Actual Outstanding Margin) in]Tolerance;+∞[• *Over Collateralized*: Fully Priced = True and Direction = Pay/Remaining Mrg (or Actual Outstanding Margin) in]Tolerance;+∞[OR Fully Priced = True and Direction = Receive/Remaining Mrg (or Actual Outstanding Margin) in]-∞; -Tolerance[• *Exposure Without Collat*: Fully Priced = True and Net Balance!= and Total Collateral = 0 • *Collat Without Exposure*: Fully Priced = True and Net Balance = 0 and Total Collateral! = 0 • *No Activity*: Fully Priced = True and Net Balance = 0 and Total Collateral = 0 The fields Fully Priced and Remaining Mrg and Actual Outstanding Margin are existing fields at the Margin Call Entry level. They are computed during a pricing action (PRICE / REPRICE) on a Margin Call contract.

Columns	Description
	Tolerance, as referred to above is specified in the Collateral Context, Pricing tab. If the Tolerance is defined on the Collateral Context using a percentage of the Global Required Margin, the Collateralization Tolerance shows the value of Net Balance * Tolerance Percentage / 100.
	NOTE: If the Collateralization Tolerance cannot be calculated because the FX Rate Base Currency / Contract Currency is missing, that does not prevent the user from processing the contract.
	NOTE: The *Collateralization Status* static data filter can be used to "park" the margin call entries which are under collateralized in a specific status or to drive a triparty contract with no activity to a status where MT527 won't be generated, as it is not required.
	NOTE: Regarding collateralization of Commodity Forward trades, once the trade matures a Commodity Spot trade is created. The Commodity Spot trade is collateralized until the greater of the Commodity Settle Date and the Cash Settle Date.
Concentration Limit Breach	Set to true if the concentration limit(s) is/are "Out of Limit", otherwise it is set to false.
Constituted Margin	The margin constituted for the process date (cash margin + security margin).
	Constituted Margin = Margin Required - Total Previous Margin
	The Constituted Margin is then rounded (according to the rounding convention specified in the Margin Call Agreement) and compared to the relevant Minimum Transfer Amount (as set on the Margin Call Agreement).
Contract Id	Margin call agreement contract id.
Cpty Amount	Enter the amount calculated by the counterparty.
Description	Description of the margin call contract.
Dispute	Automatically checked when a dispute arises.
	▶ See Disputing a Margin Call at Contract Level for details.
Dispute Amount	The system calculates and displays the difference between the Calypso generated amount and the counterparty's amount.
Effective Date	You can double-click this field to modify the date.
	Effective date of the margin (process date)
Global Required Mrg	The delivery/return amount required as of the process date. (Constituted Margin after applying MTA)
Ineligible Collateral	Set to true if there is/are ineligible collateral on the contract, either at allocation level or netted position level. Otherwise, it is set to false.
Interest	You can double-click this field to modify the amount.
	Interest amount to be paid or received on the process date. The interest is calculated between the previous margin call data and the process date.

Columns	Description
Margin Required	Trade Margin – Threshold (or "0" if the Threshold is greater then the Trade Margin). Net Exposure after applying Threshold (amount of allowable exposure)
Minimum Transfer Amount	The MTA defined in the margin call contract.
Net Balance	Net exposure = Global Margin Requirement – Total Previous Margin – Interest. (NPV of underlying trades)
Prev Cash Margin	Previous cash margin: amount of the last cash margin paid or received on this contract.
Prev Sec Margin	Previous security margin: amount of the last security margin paid or received on this contract.
Prev Sec Mrg Date	Date of the previous security margin.
Remaining Margin	Required Margin – (Cash Margin + Security Margin) – (Daily Cash and Security Margin). Should be equal to zero.
Rounding Method	The rounding method defined in the margin call contract.
Security Margin	Amount of security margin. ▶ See Constituting a Margin for details.
Status	The status of the contract is "NOT CALCULATED" by default. It will be modified depending on which actions are applied to the contract. When the margin call is computed, it is set to "CALCULATED". If the global requirement is zero, it is set to "NO CALL REQUIRED". ▶ For information on additional statuses, see General Collateral Statuses.
Threshold	Threshold amount defined in the margin call contract.
Total Prev Margin	Total of the previous margin: previous cash margin amount + previous security margin amount.
Trade Margin	Net Balance + Independent Amount. (When the Margin Flow Approach is used, this is IA post Threshold + MTM)
Validate	Check to validate the margin calls.

3.8 Constituting a Margin - Allocation
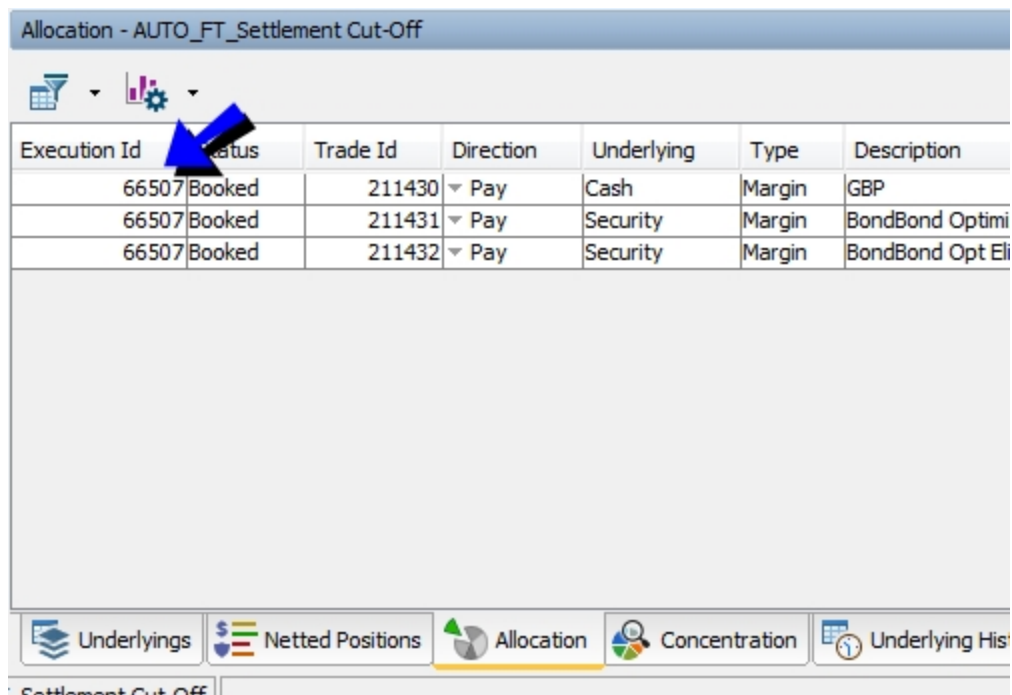
Select a Contract and click ![Allocate] (or choose **Collateral > Allocate**) to display the Allocation window.

- The Available Positions area differs for cash margins and security margins - Select Cash or Security as needed. For Cash, it shows deliverable currencies, and for Security is shows available collaterals, as defined in the margin call contract.

- The Netted Positions panel shows existing collateral positions prior to the process date (the same view as Netted Positions panel in Collateral Manager). You can configure the display and create report templates using the Report, Data, and View menus.

  ▶ To substitute collateral, click , see Substituting a Margin Call for details.

- The Allocations panel shows margin calls on the process date. You can configure the display and create report templates using the Report, Data, and View menus.

- The values at the bottom of the window show the margin call requirements.

- You may choose to optimize the allocation of the collateral payment by making the best use of the inventory, by using Calypso's Optimization feature.

- You many cancel all or selected allocations by selecting the appropriate option from the drop-down menu that is part of the Allocation button.

- When an allocation is executed and a Margin Call trade is booked, a unique identifier called an 'Execution Id' is generated. This Id can be displayed as a column in any collateral allocation report (Collateral Manager, Collateral Allocation or a stand alone report).

The Execution Id is propagated to the Margin Call trade under the trade attribute COLLATERAL_EXECUTION_ID.

- In the Allocation Report, you can display the last execution only by selecting the Last Execution checkbox.
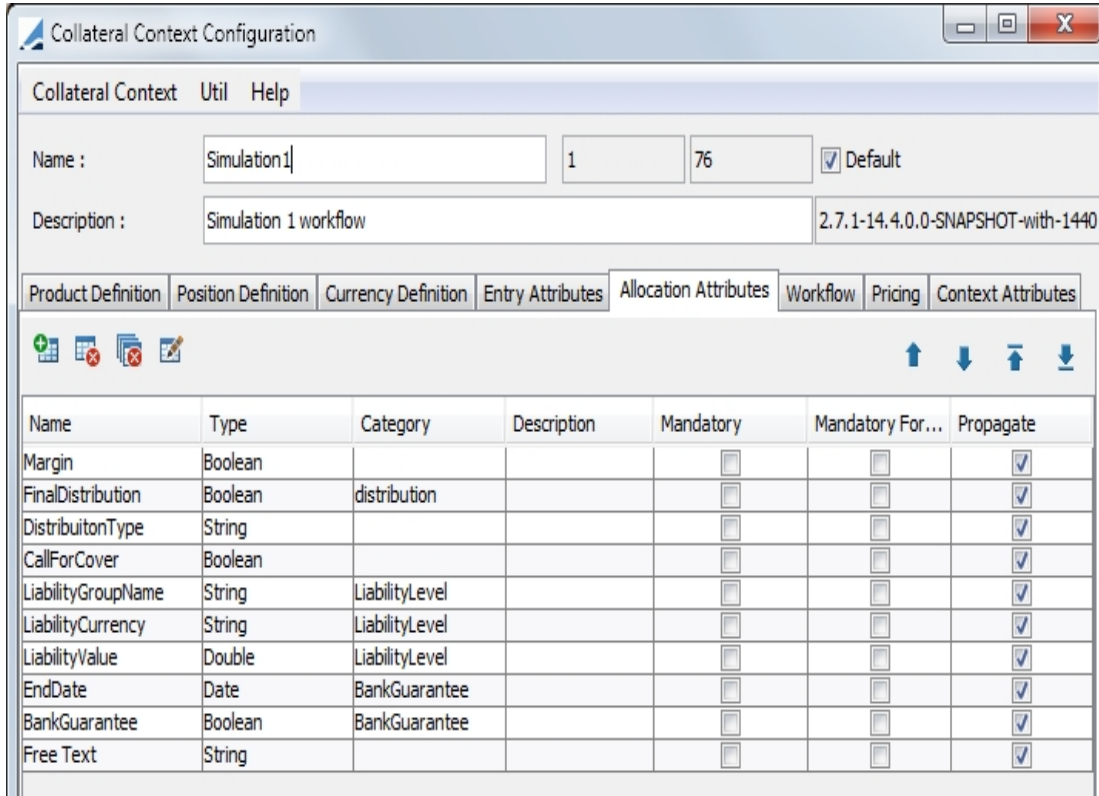
3.8.1 Allocation Attributes

» An allocation can be customized with allocation attributes which are defined in the Collateral Context window.

» An alternate way to input an allocation attribute is to use a custom workflow rule.

In the following example, the attribute "AllocationType" is set to "Substitution" before executing an allocation:

ExecuteSubstitutionCollateralRule - checks the CUSTOM_ATTRIBUTE rule.

» The Margin Call Allocation Entry Report contains selection criteria allowing you to filter by an allocation attribute.

3.8.2 Allocation Validators

An allocation can be customized with allocation validators which are defined in the Collateral Context window. This is used to define validators when allocating and creating margin call trades. There are three validators, Increment Lot Size, Minimum Purchase Amount and Multi Entry Position.

▶ Refer to Collateral Context for additional details.

3.8.3 Security Margins

Select the Security panel to enter security margins.

Note that if "Is Check Allocation Position" is checked in the Option area of the Collateral Manager, deliverable securities will only appear if you have a Inventory position for these securities (it requires a SETTLE internal Inventory position).

» Double-click a deliverable security from the Available Positions area to load it the Allocation area. Then enter the quantity and price. The bottom right corner of the window indicates if additional margins are required.

» The quick entry area is available to quickly search and add a security to the Allocation area.

Select a security identifier (Name, ISIN, etc.) and type in a few characters in the adjacent field. All corresponding securities are displayed - Select a security and hit Enter. If the security is available as a collateral for this contract, the icon is enabled. Click to add the collateral. Then enter the price and quantity as needed.

Available securities are defined in the margin call contract in the **Eligibility > Eligible Securities** panel.

» Repeat for another deliverable security as needed, or select the Cash panel to adjust cash margins. On the bottom right corner of the window, there is an indication if additional margins are required.

» Click Apply when finished.

» Depending on your workflow, apply the appropriate action to complete the allocation.

ⓘ **NOTE: The Collateral Allocation search depends on product types added to the *ProductSelectorTypes.Repo* and *bondType* domains. If all of the expected bonds are not displaying in the search, make sure that the appropriate bond type is in each of these domains.**

3.8.4 Cash Margins

Select the Cash panel to enter cash margins.

» Double-click a deliverable currency from the Available Positions to load it in the Allocation area below.

» Enter the margin call amount and the FX rate if applicable.

» Repeat for another deliverable currency, or select the Security panel to enter security margins. On the bottom right corner of the window, there is an indication if additional margins are required.

» Click Apply when finished.

» Depending on your workflow, apply the appropriate action to complete the allocation.

NOTE: The behavior of the Quote Price column in the Collateral Allocation report can be changed using the *Collateral.ReportConfig* domain. The domain value is *ALLOCATION_RPT_DISPLAY_QUOTE_FROM_PE* and can be set

to True or False. When it is set to True, the Quote Price is fetched from the pricing environment. When it is set to False, the value is displayed according to the security price definition.

3.8.5 Reserving Positions for Allocation

It is possible to reserve a security for allocation while the availability of the security is verified. Using this process, the security cannot be used for allocation in another margin call at the same time, preventing collateral from being allocated that is no longer available.

When proceeding with the allocation, the system creates an unavailable transfer trade by using the *Reserve* workflow rule. The unavailability transfer trade creates a new balance type name, *Balance Unavailable*, which can be viewed in the Back Office Position report. After the numbers and collateral are confirmed with the counterparties, the allocation is validated to create the margin call trades. At this point, the unavailability transfer trades are canceled. This is done using the *Release* workflow rule. The *Balance Unavailable* amount is then zero and the allocation is reflected in the internal balance.

Even if the margin is partially allocated or if the saved margin call trades are not the ones suggested by the optimization, all of the unavailable transfer trades for the contract are still canceled.
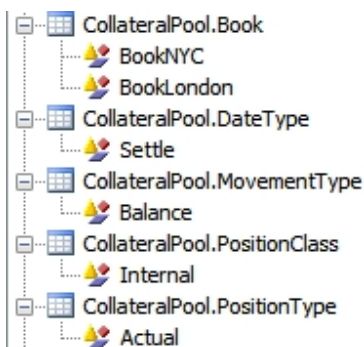
Workflow rules

- *Reserve* - This rule creates the unavailability transfer trade. It should be used on ALLOCATE action - Example: EXPOSURE_AGREED - ALLOCATE - ALLOCATED transition.

- *Release* - This rule cancels the unavailability transfer trades. It should be used on EXECUTE action - Example VALIDATED - EXECUTE - EXECUTED.

- *CheckPosition* - This rule verifies that the reserved allocation is still available in the pool. It should be used on EXECUTE action as above.

- *CheckFullExecution* - These rules are used to check if the collateral is still available in the Check Position Collateral Pool when executing. It should be used on EXECUTE action as above.
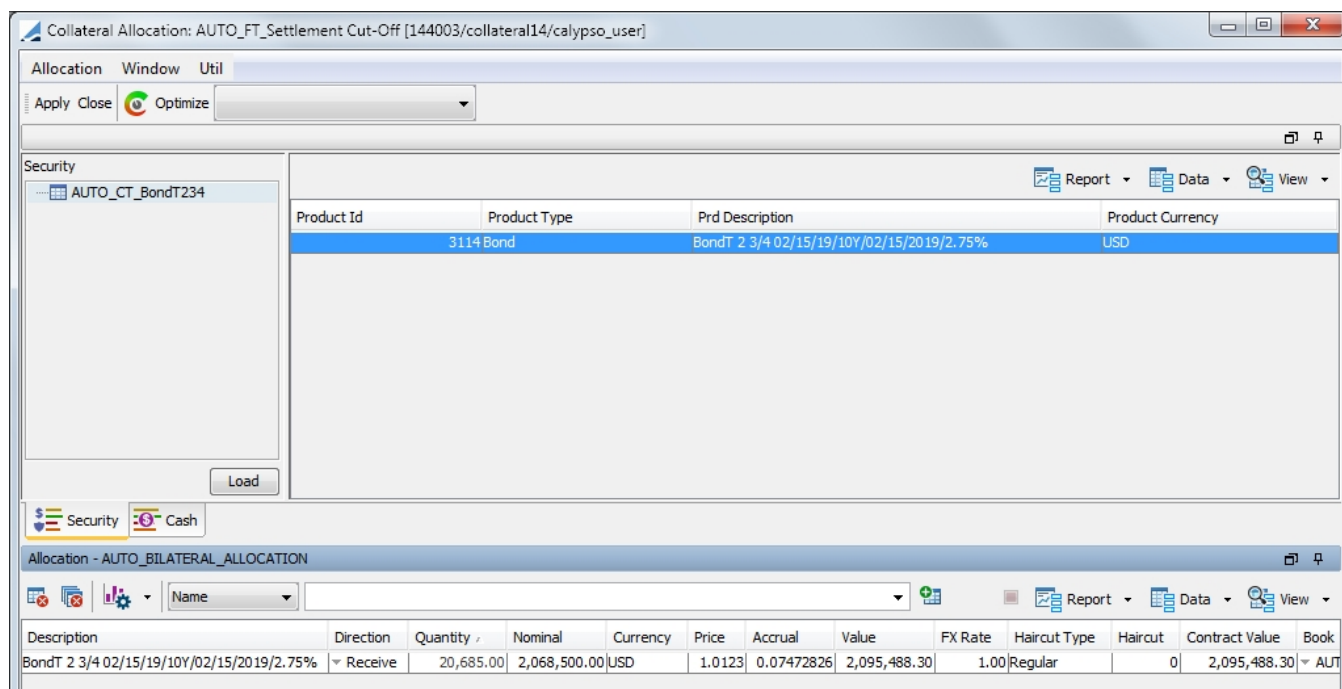
Check Position Collateral Pool

The collateral pool is what the *CheckPosition* rule uses to verify availability. It is defined using domain values. These values define the scope of the pool. When the *CheckPosition* workflow rule is used, it is the collateral that meets these requirements that are considered for allocation. These domain values are the same as those defined in the Inventory Optimization Constraint Configuration, but when the *CheckPosition* workflow rule is used, the system looks to these domain values and not the Inventory Constraint.

- *CollateralPool.Book*
- *CollateralPool.DateType*
- *CollateralPool.PositionType*
- *CollateralPool.PositionClass*
- *CollateralPool.MovementType*

Example

Below is a example of an allocation in the Allocation window.

When the allocation is done, using the above referenced workflows, an Unavailability Transfer (or reservation trade) is created. A unique reservation Id is also created.

To view the Unavailability transfer, right-click on the row of the allocation and select **Show > Reservation**. At this point, no margin call trade has been saved.

This trade and its transfer create a Balance Unavailable movement (which can be seen in the Inventory Position report).

When the allocation is validated and executed, the margin call trades are created and unavailability transfer trades are canceled. The Reservation Trade Id becomes the Margin Call Trade Id.

The balance is updated with the margin call transfers and the Balance Unavailable becomes zero. The margin call position is now.

3.8.6 Allocation Hold

In the Allocation window, a column called Hold Allocation can be added to the display. This column gives the user the ability to release specific allocations (such as daily call allocations), but to hold other allocations (for substitutions, perhaps). This allows the daily call allocations to be processed and the substitution allocations to be kept for release/processing independently once they have been agreed upon.

Hold Allocation

Any allocation that has Hold Allocation selected, has the following behavior:

- Will not generate a margin call trade at the execution of the margin call entry
- Will re-appear in the Allocation window the next time it is opened
- Will not be included in Daily Security and Cash Margin columns in the Collateral Manager > Results panel
- Will not impact calculations / results panel of Collateral Manager

An Allocation that does not have Hold Allocation selected has the following behavior:

- Behaves the same way as other allocation functionality
- Will be saved as margin call trades
- Will not re-appear in the Allocation window the next time it is opened
- Populates the Daily Security and Cash Margin columns in the Collateral Manager > Results panel

3.8.7 Allocation Summary - Auto Adjustment

The Allocation Summary is an area of the Allocation window that displays a summary of the allocation information regarding Margin and Value. Additionally in this area is an Auto Adjustment field.

The Auto Adjustment field allows the user automate returns when there is a previous position in a different currency and automate a return but not a new margin.

The Auto Adjustment options are:

- *None* - no automatic calculation
- *Return* - Return is done automatically when possible using previous position currency. New Margin allocation is manual.

   (Dispute scenarios are not supported with this Auto Adjustment method.)

- *Return & New Margin* - Return is done automatically when possible using previous position currency. New Margin allocation are done in the default currency. If no auto adjustment currency has been defined on the Margin Call

contract, no allocation is created. (When Margin Flow Approach is used, the constituted margin is the new Margin Required (MFA) – Total Previous Margin.)

(Dispute scenarios are not supported with this Auto Adjustment method.)

- *Standard - Default Currency* - Everything is done using the default currency with the ability to explode the Margin and Return.

(Calypso recommends using this Auto Adjustment method for single currency contracts only.)

NOTE: This feature is also available in the Template Manager (**Collateral Manager > Preferences**). In the Template Manager, it is also possible to automate when paying, receiving, or both.

There are three workflows used to accommodate the three auto adjust options. These workflows should use a full STP workflow. When using these workflows rules, there is no need to open the Allocation window. The Margin Call entry goes through the workflow transition anatomically. The workflow rules are: *AutoAdjust*, *AutoReturn* and *AutoReturnAndAdjust*. These rules should be added to a transitions such as:

EXPOSURE_AGREED - ALLOCATE - ALLOCATED

ALLOCATED - VALIDATE - VALIDATED

(!) **NOTE: Currently, the Auto Adjustment feature is not available for dispute cases. This functionality will be available in a future release.**

3.9 COLLATERAL_MANAGEMENT Scheduled Task

You may run the optimization as part of an End of Day process using the scheduled task COLLATERAL_ MANAGEMENT. To view the Scheduled Task window, from the Calypso Navigator, select **Configuration > Scheduled Tasks > Scheduled Tasks**.

You are able to run the scheduled task for a range of days by utilizing the From Days and To Days fields. If no date range is selected, all dates are generated.

Below is a description of the required scheduled task attributes:

Attribute	Description
Template	Select a collateral template (This is the same as **Collateral Manager > Preferences** in Collateral Manager)

Attribute	Description
Collateral Context	Select a Collateral Context to use for the running of the scheduled task.
Optimization	Choice of the Optimization configuration (Same as the Optimizer that can be selected in Collateral Manager)
Price method	Defines the pricing method used upon loading. REPRICE resets the pricing and reprices everything. PRICE updates what has not been priced. NONE allows the scheduled task to apply a collateral workflow action without repricing the entry.
Workflow Action	Select the workflow action to apply when the contracts are priced or repriced.
Collateral Config Level	Select BOTH, EXPOSURE_GROUP or MASTER to determine whether the scheduled task is run at the Master or Exposure Group level. BOTH indicates that it will be run at both levels.

If an optimizer is defined in the attribute Optimization, the system will proceed to optimization on the contracts included in the template selected.

3.10 Disputing a Margin Call

A dispute is when there is a discrepancy between the amount of margin that the processing org believes needs to be paid/received and the amount the counterparty believes needs to be received/paid. A dispute is resolved once the processing org's margin call agrees with that of the counterparty which is the same exposure/collateral balance.

Enter the counterparty's calculated amount in the Cpty Amount field. If this amount is not the same as the Global Required Margin, the Dispute checkbox and the Dispute Amount field will be automatically populated.

3.10.1 Dispute Process

For example, if a processing org indicates that the margin to be paid today is 650,000 and the counterparty thinks that it should be 645,000, there is a dispute of 5,000. The processing organization would rather accept part of the margin than nothing at all, therefore they will accept the 645,000 and the dispute will be ongoing.

Minimum Transfer Am...	500,000.00
Global Required Mrg	-650,000.00
Cash Margin	0.00
Security Margin	0.00
Security Settle Date	
Interest	0.00
Interest Balance	0.00
Dispute	☑
Dispute Amount	-5,000.00
Dispute Comment	
Dispute Reason	
Dispute Status	Partially agreed
Agreed Amount	0.00
Closing Balance	100,000.00
Cash Movement	0.00
Cpty Amount	-645,000.00
Remaining Mrg	-650,000.00
Cpty Trade Exposure	-550,000.00
Dispute Age	0
Dispute Percentage	0.77
Trade Dispute	☐
Trade Dispute Amount	0.00

» The system calculates the dispute amount as the difference between the processing org's calculated amount and the counterparty's calculated amount.

» A dispute is resolved once the processing org's margin call amount agrees with that of the counterparty.

» You can resolve the dispute by agreeing to the counterparty's, PO's or another amount.amount.
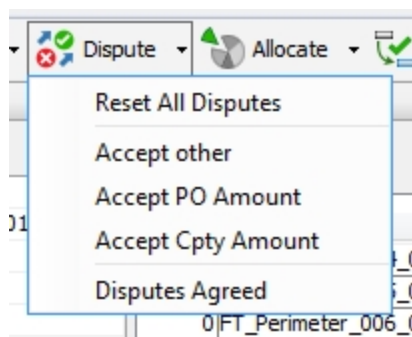
» The Dispute checkbox remains checked after the dispute has been resolved.

» As soon as the disputed is resolved, the contract can be returned to ALLOCATED status.

3.11 Disputing a Margin Call at Trade Level

In the Details area, a number of columns allow managing disputes at the trade level.

Counter Party Exposure	Dispute	Dispute Amount	Dispute Comment	Dispute Reason	Dispute Status	Agreed Amount
-2,500.00	☑	251.37	Pricing issues		Open	0.00

3.11.1 Automatic Disputes

ⓘ **If the contract is defined as loading trades by "REAL_SETTLEMENT" date, the trades and collateral that are not settled will automatically appear in Dispute mode, and they will not be taken into account in the Margin Call computation - The "Exclude" checkbox will be checked - To include them, you need to clear the "Exclude" checkbox.**

If the trades settle on the same day as the margin call, you can reprocess the margin call and they will automatically be included. Otherwise, they will be automatically included when they settle.

3.11.2 Initiating a Dispute

» Enter the exposure amount computed by the counterparty in the *Cpty Amount* field - If this is different from the Global Required Margin, the Dispute checkbox is selected. Calypso computes the Dispute Amount as the difference between the counterparty's exposure and the Global Required Margin.

» You can enter a dispute comment, and select a dispute reason - Dispute reasons can be added to domain "MarginCall.DisputeReason".

» You can filter which trades to display in the Details area using the filter menu   .

Automatic Resolution

» If the Dispute Amount is within the Dispute Tolerance set on the contract, the dispute is automatically resolved using the counterparty's amount.

Trade Id	Counter Party Exposure	Dispute	Dispute Age	Dispute Amount	Dispute Comment	Dispute Reason	Product Type	Dispute Status	Description
191930	-100,000.00	☐	0	150.00	Under Tolerance	▾ Under Tolerance	CollateralExposure	▾ Fully agreed	CollateralExposureInitial Margin/AUD/04/01/2015/OPEN

» If there is no tolerance, whether the dispute is less than or equal to the MTA, it is treated as a dispute. Set the Tolerance to the MTA if you would like a dispute less than the MTA to be ignored.

3.11.3 Resolving a Dispute

You have multiple options to resolve a dispute.

Option 1 - Resolve using Agreed Amount

» Enter the amount of exposure that is agreed in the Agreed Amount field, and choose **Dispute > Accept other**. If the agreed amount is null, you will be prompted to exclude the trade.

The Acceptance Status will be set to "Accept other". (When this action is applied, the Allocation window will show the Global Required Margin equal to the agreed amount.)

Option 2 - Resolve using Calypso Amount

» Choose **Dispute > Accept PO Amount**.

The Agreed Amount is automatically set to the PO Net Balance, and the Acceptance Status is set to "Accept Processing Org".

Option 3 - Resolve using Counterparty Amount

» Choose **Dispute > Accept Cpty Amount**.

The Agreed Amount is automatically set to the Counterparty's Exposure, and the Acceptance Status is set to "Accept Counterparty".

As soon as the disputed is resolved, the contract returns to ALLOCATED status.

3.11.4 Updating Agreed Amount

You can choose **Dispute > Disputes Agreed** to set the agreed amount to the Net Balance for all trades for which there is no dispute.

All open dispute can be viewed at the contract level using the following fields.

Trade Dispute	☑
Trade Dispute Amount	350.00
Cpty Trade Exposure	-5,978,230.37

These are for information purposes only.

Dispute information is saved along when the margin calls are saved.

3.11.5 Viewing the History of Trade-Level Disputes

Once the margin calls with disputed trades have been saved, you can view the history of trade-level disputes in the History panel. By default you can view the last 7 days of disputes. You can change the history period in the History options.

Net Margin Call	Counter Party Exposure	Dispute	Dispute Amount	Agreed Amount	Dispute Status
-2,248.63	-2,598.63	☑	350.00	-2,248.63	Open

3.11.6 Dispute Age

A dispute begins aging when the Processing Org and the Counterparty call different amounts and it runs over to the following day. The aging of the dispute is determined by the Dispute Age Start, which is set in the Details panel of the Margin Call contract. If the setting is *T+1* in the contract, the Dispute Age on the day the dispute is initiated is 0. If the setting is *T*, the Dispute Age on the day the dispute is initiated is 1.

To calculate the Dispute Age, the system looks at yesterday's entry. If there was a Dispute Age, the age is accrued one day.

Additionally, to accommodate for the import of existing contracts into Calypso, two fields are available for offset dates: *Dispute Age Offset* and *Directional Dispute Age Offset*. These fields are editable provided the appropriate access permissions are selected. The access permissions for these fields are: *AllowEditDisputeAgeOffset* and *AllowEditDirectionalDisputeAgeOffset*.

When the dispute amount hits 0, the dispute is over.

Dispute Aging Example

(Dispute Age Start set to *T+1*)

Day	PO Call	Cpty Call	Agreed Collateral	Disputed Amount	EOD Dispute Status	Comments	Age	New Collateral Balance	Previous Collateral Balance
1	12,000,000	2,000,000	2,000,000	10,000,000	Partially Agreed	Under Investigation	0	2,000,000	----
2	10,00,000	-----	-----	10,000,000	Fully Disputed	Reconciliation in progress	1	2,000,000	2,000,000

Day	PO Call	Cpty Call	Agreed Collateral	Disputed Amount	EOD Dispute Status	Comments	Age	New Collateral Balance	Previous Collateral Balance
3	9,000,000	4,000,000	4,000,000	5,000,000	Partially Agreed	Cpty referred to middle office	2	6,000,000	2,000,000
4	6,000,000	6,000,000	6,000,000	----	Fully Agreed		0	12,000,000	6,000,000

Directional Dispute Age

There is Directional Dispute Age column available for display in Collateral Manager. The Dispute Age is reset to 0 when there is no call from either party or when a margin call is agreed in full. In addition to those occurrences, the Direction Dispute Age column is rest to 0 when there is an exposure swing.

This applies to Contract disputes only.

3.12 Substituting a Margin Call

The substitution process consists of reversing an existing collateral position, and constituting a new margin.

» In the Allocation window, select Substitution Mode at the top of the window.

» Then, in the Netted Positions panel of the Allocation window, select any margin call positions that you would like to substitute and click ⬅️ . The selected positions will appear reversed in the Netted Allocations panel. If you would like to substitute all of the positions, click 🗗 . (Note: If you do not select the Substitution Mode flag, a return will be processed instead of a substitution.)

Type	Description	Nominal	Clean Price	Currency	Value	Haircut	All-In Value	FX Rate
Security	BondBond D/40Y/01/01/2041/0%	-2,000,000.00	100.00000000	USD	-2,000,000.00	0	-2,000,000.00	1
Security	BondBond B/40Y/01/01/2041/0%	-2,000,000.00	100.00000000	USD	-2,000,000.00	0	-2,000,000.00	1
Security	BondBond C/40Y/01/01/2041/0%	-2,000,000.00	100.00000000	USD	-2,000,000.00	0	-2,000,000.00	1
Security	BondBond A/40Y/01/01/2041/0%	-2,000,000.00	100.00000000	USD	-2,000,000.00	0	-2,000,000.00	1
Security	BondBond C/40Y/01/01/2041/0%	-600,000.00	100.00000000	USD	-600,000.00	0	-600,000.00	1
Security	BondBond A/40Y/01/01/2041/0%	-1,100,000.00	100.00000000	USD	-1,100,000.00	0	-1,100,000.00	1
Security	BondBond B/40Y/01/01/2041/0%	-1,000,000.00	100.00000000	USD	-1,000,000.00	0	-1,000,000.00	1
Security	BondBond A/40Y/01/01/2041/0%	-1,000,000.00	100.00000000	USD	-1,000,000.00	0	-1,000,000.00	1
Security	BondBond B/40Y/01/01/2041/0%	-200,000.00	100.00000000	USD	-200,000.00	0	-200,000.00	1

» Also in the Netted Positions panel of the Allocation window as well as Collateral Manager, you are able to net the position with the booked daily allocations (allocation with a margin call trade) to display the end of day balance at the position level.
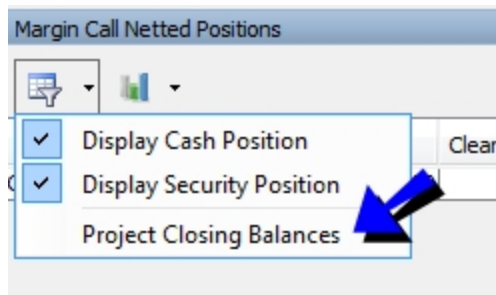
» Select the Cash or Security panel to constitute a new margin.

» Click Apply when finished.

» Depending on the workflow setup, apply the appropriate actions to execute the allocation.

3.13 Returning a Margin Call

If you would like to return a margin call, select the position to be returned in the Netted Positions panel of the Allocation window and click [icon]. The selected positions will appear reversed in the Netted Allocations panel.
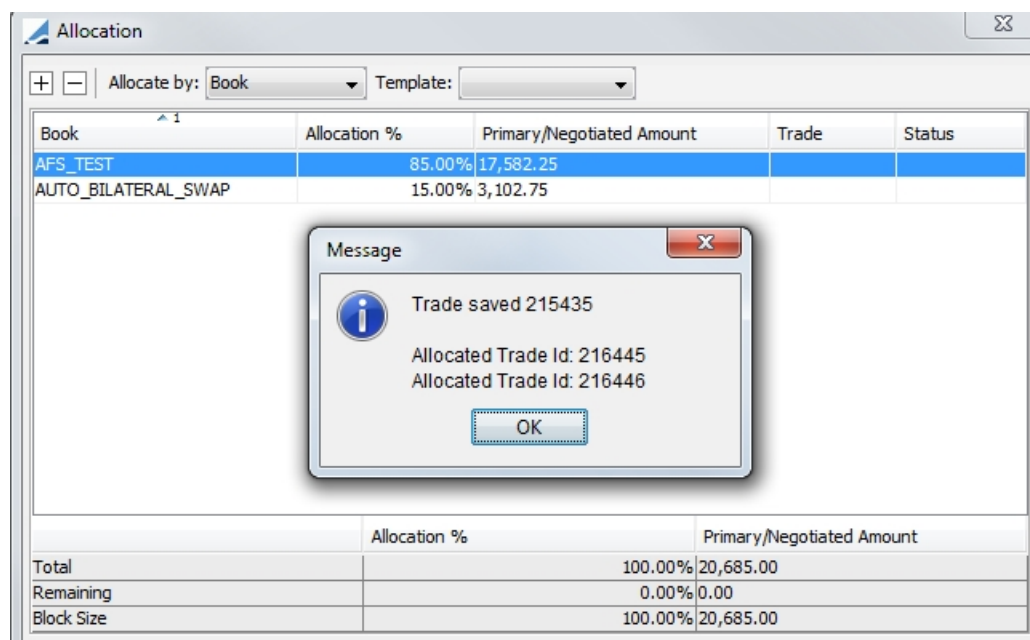
3.14 Allocating a Margin Call Trade to Multiple Books

Once a margin has been constituted, it can be allocated to multiple books.

Open a margin call trade and choose **Back Office > Allocate**.
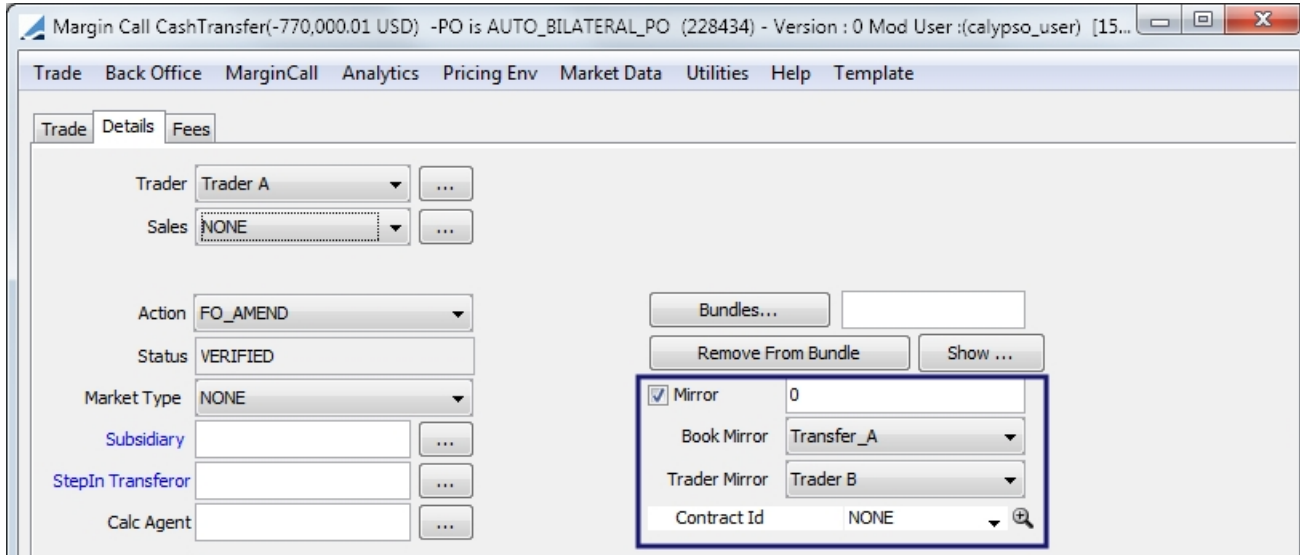
The allocation can be manual or according to allocation rules. Allocation rules are defined under **Configuration > Books & Bundles > Allocation Template**.

3.15 Margin Call Trade Mirroring

Margin Call trade mirroring can be specified either via the Margin Call trade itself or from the Margin Call contract.

3.15.1 Mirroring on Margin Call Trade

To set up mirroring directly from the Margin Call trade, select the Mirror check box in the Details panel of the trade. This selection displays the Book Mirror, Trade Mirror and Contract Id fields.
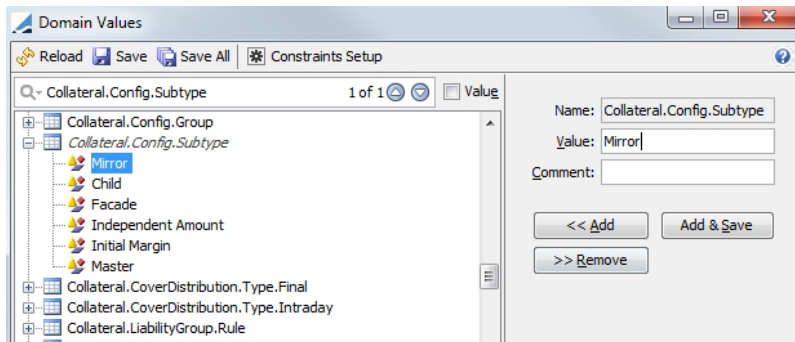
The Margin Call contracts available for selection in the Contract Id field have a mirrored PO and LE and have the Subtype designation of Mirror. For example, if the PO for the trade is LE1 and the CP is LE2, the mirror Contract Id chooser loads only margin call contracts where the PO=LE2 and CP=LE1.

Note: The Mirror Subtype must be added to the *Collateral.Config.Subtype* domain value.

» Once the trade is saved with the Mirror checkbox selected, the mirror Margin Call trade is generated with the Contract Id = the mirror contract's Id.

3.15.2 Mirroring Through Margin Call Contract

To automate mirroring of Margin Call trades, a Mirror Contract can be selected in the Details panel of the contract. As in the Margin Call trade, the only contracts available for selection must have a mirrored PO and LE and have the Subtype designation of Mirror.

After the master contract is executed, two margin call trades will be generated.

3.16 Computing Collateral Projections - Forward Panel
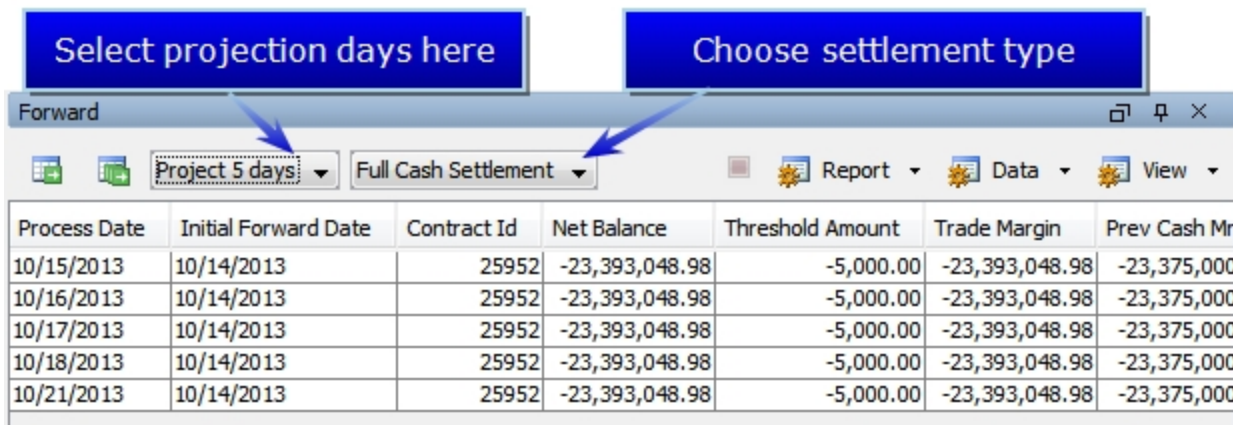
Collateral projections can be viewed in the Forward panel. By default you can view projections over the next 5 days. You may select a different amount of projection days from the drop-down.

You may also select the forward type. The available types are:

- Full Cash Settlement - assumes a cash settlement for future margin calls

- Trade Settlement - bases the calculation on the forward margin on the settle date of the real margin call trades generated, assuming full settlement of the related transfers. (For the projected previous security margin, the coupon is accrued.)

» You can click to compute collateral projections for the contract currently selected, or to compute collateral projections for all contracts currently loaded.

» You may drill down to the underlying trades constituting the forward margin. Right-click on an entry to display a Show menu from which you can select different views.
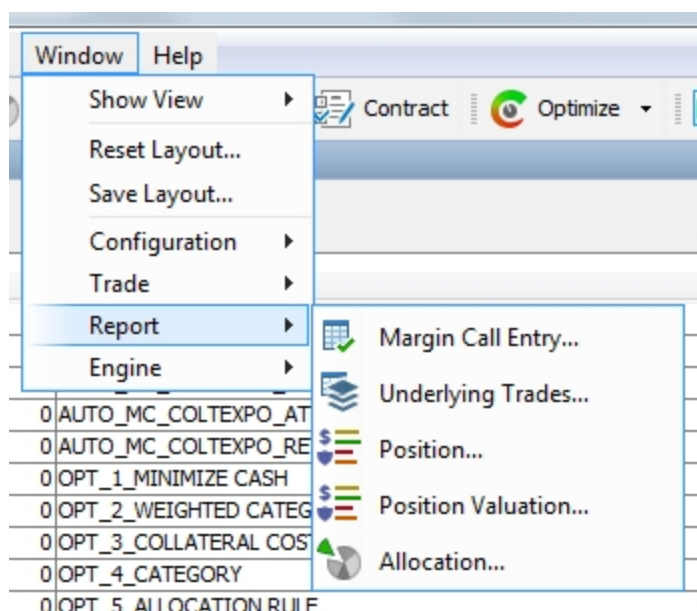
Selecting Margin Call Positions opens a report window showing the margin call positions. Double-clicking on a margin call position in any report of margin call positions opens the Back Office Inventory report for that contract. This makes it possible to drill down to the transfers (thus the margin call trades or other trades as well) associated with the positions when double-clicking on a row and the column of a date (showing transfers for that day and that position only).

3.16.1 Projected Trade Exposure Valuation

To calculate the Projected Trade Exposure Valuation, Calypso takes the closing price of the Security.

For Fixed Income Securities Calypso projects forward the valuation by adjusting the value to include the additional day(s) of Accrued Interest.

For the Cash valuation we will project forward by adjusting the cash value by the additional day(s) of Interest due on the cash value of the Trade .

This would be the same as adding additional day(s) to the Collateral Date for the Trade valuation.

As part of the Projected Collateral Calculation Calypso, applies the relevant Threshold / MTA and Rounding convention, as would apply to the direction of the Collateral Exposure.

3.16.2 Projected Cash Margin Valuation

When forward valuing the value of Cash Collateral held Calypso uses the current (last known) FX rates (if applicable) to value the Cash Collateral in the Margin Call Contract Currency.

Although the forward projected value of Previous Cash Margin should not change, Calypso will assume cash settlement of future margin calls to provide a cash forecast of the daily collateral requirements.

3.16.3 Projected Security Margin Valuation

To calculate the Projected Security Margin Valuation we will take the closing price of the Security (at Trade Date of the Margin Call Report).

For Fixed Income Securities we will project forward the valuation by adjusting the value to include the additional day(s) Accrued Interest.

The difference in the Previous Security Margin as we project forward will be the Accrued Interest on the Security.

3.17 Collateralization of ETFs
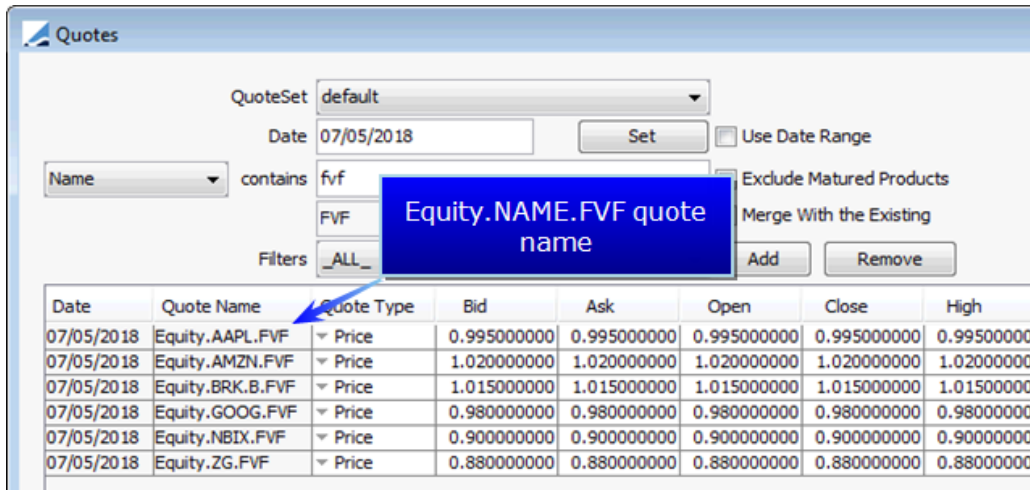
The Collateral module supports the collateralization of equity and fixed income trades which serve as an underlying for ETF deals.

3.17.1 MARGIN_CALL_PRICER_MEASURE

When an equity trade is part of an ETF bundle, the Margin_Call pricer measure applies the following logic. The Bundle Type on the equity trade must be in the *ETFBundleType* domain.

- For Equity Buys, the calculation is *Unsettled Qty*Current Price* FV Factor* (where *FV Factor* is a quote associated with the underlying security). The naming scheme for *FV Factor* is *Equity.NAME.FVF* and the quote type is *Price*.

- For Equity Sells, the calculation is *Settled QTY*Current Price*FV Factor* (where *FV Factor* is a quote associated with the underlying security). The naming scheme for *FV Factor* is *Equity.NAME.FVF* and the quote type is *Price*.

This is only for trades which have an underlying transfer which settles before the ETF's actual settle date. Therefore, the system will look for the Equity sell transfer's settlement status, where the current date is greater than or equal to the ETF trade's actual settlement date. If the transfer is settled, then the pricer measure will be computed.

For Fixed Income trades, as there is no FV factor quote, the margin call pricer measure is the nominal * dirty price of the asset.

3.17.2 ETF SETTLEMENT Effective Date

The EFT SETTLEMENT Effective Date Type on the Details panel of the Margin Call contract must be selected to apply the EFT logic in the Margin_Call pricer measure. The logic applied is also different for Equity Buys vs. Equity Sells. Equity Buys are included only if they have not settled. Equity Sells are included which have settled prior to the ETF's actual settle date.
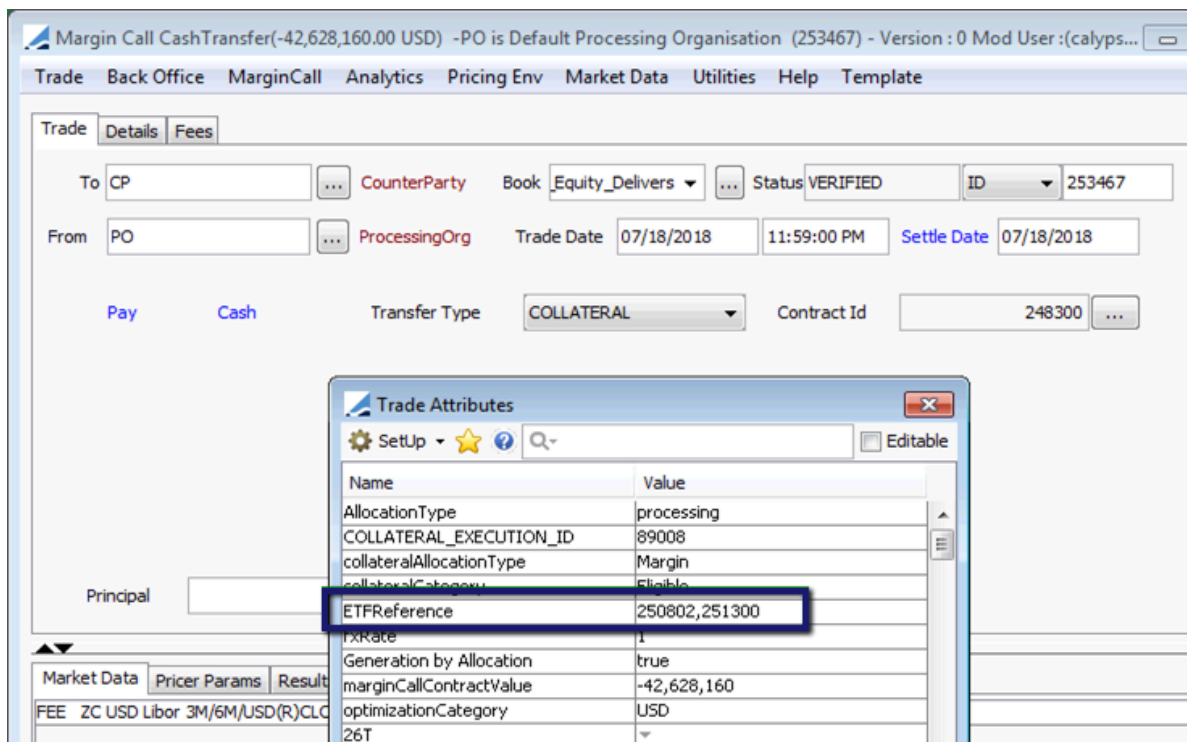
3.17.3 ETF Reference Keyword

A trade keyword called *ETF Reference* identifies unique bundle Ids on underlying trades in the contract for which the Margin Call is generated.

NOTE: Equity and Bond trades in a bundle will calculate a margin call even if their settle dates are the same as the unitized fund. Transfers of the unitized fund should not be settled for the margin call to be calculated.

3.18 Collateral Reports

There are five stand-alone reports available for generation through Collateral Manager. The five reports are compatible with the REPORT scheduled task. To select the desired report, select **Window > Report**. These reports are currently only available through the Collateral Manager window.

Similar to how a user can filter Margin Call contracts in Collateral Manager using a Contract Filter, users can also use a Contract Filter on the report windows.

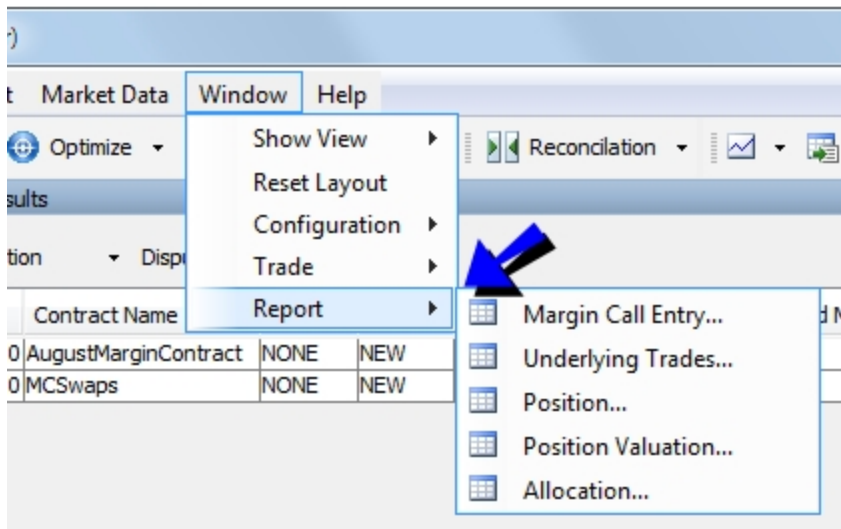
Note: There is an additional Collateral report available called MarginCallForward. This report displays collateral forward exposure. You may generate this report either through the REPORT scheduled task, or you may add the link *reporting.ReportWindow$MarginCallForward* directly to the Reports menu using Main Entry Customizer.

3.18.1 Margin Call Entry (report type MarginCallEntry)

This is a report of all of the changes that have been made to the contracts

MarginCallEntry Report (7/18/16 3:37:42 PM) / Pac Life

Report Data View Export Market Data Utilities Help

Criteria

Contract Id	Process Date	Contract	Type	Status	Prev Cash Mrg	Prev Sec Mrg	Total Prev Mrg	Net Balance	Global Required Mrg	(Daily Cash Mrg)	(Daily Sec Mrg)	Remaining Mrg	ACCOUNT
		Contract: Scenario 1 VM											
28715	05/12/2014	Scenario 1 VM	VM	PRICED_PAY	0.00	0.00	0.00	-10,100.00	-10,100.00	-10,100.00	0.00	0.00	Scenario 1
28715	05/12/2014	Scenario 1 VM	VM	COVERED	0.00	0.00	0.00	-10,100.00	-10,100.00	-10,100.00	0.00	0.00	Scenario 1
28715	05/13/2014	Scenario 1 VM	VM	COVERED	-10,000.00	0.00	-10,000.00	-12,001.00	-2,001.00	-2,001.00	0.00	0.00	Scenario 1
28715	05/14/2014	Scenario 1 VM	VM	COVERED	-12,000.00	0.00	-12,000.00	4,998.00	16,998.00	16,998.00	0.00	0.00	Scenario 1
		Contract: Scenario 1 IM											
27688	05/12/2014	Scenario 1 IM	IM	PRICED_PAY	0.00	0.00	0.00	-5,000.00	-5,000.00	0.00	0.00	-5,000.00	Scenario 1
27688	05/12/2014	Scenario 1 IM	IM	PRICED_PAY	0.00	0.00	0.00	-5,000.00	-5,000.00	-5,000.00	0.00	0.00	Scenario 1
		Contract: Scenario 2 VM											
27694	05/12/2014	Scenario 2 VM	VM	COVERED	0.00	0.00	0.00	-10,100.00	-10,100.00	-11,600.00	0.00	1,500.00	Scenario 2
27694	05/12/2014	Scenario 2 VM	VM	PRICED_PAY	0.00	0.00	0.00	-10,100.00	-10,100.00	-11,600.00	0.00	1,500.00	Scenario 2
27694	05/13/2014	Scenario 2 VM	VM	COVERED	-11,500.00	0.00	-11,500.00	-12,001.00	-501.00	-2,001.00	0.00	1,500.00	Scenario 2
27694	05/14/2014	Scenario 2 VM	VM	COVERED	-13,500.00	0.00	-13,500.00	4,998.00	18,498.00	10,498.00	0.00	8,000.00	Scenario 2
		Contract: Scenario 2 IM											
27689	05/12/2014	Scenario 2 IM	IM	PRICED_RECEIVE	-5,500.00	0.00	-5,500.00	-5,000.00	500.00	0.00	0.00	500.00	Scenario 2
27689	05/12/2014	Scenario 2 IM	IM	PRICED_RECEIVE	-5,500.00	0.00	-5,500.00	-5,000.00	500.00	400.00	0.00	100.00	Scenario 2
		Contract: Scenario 3 VM											
27695	05/12/2014	Scenario 3 VM	VM	PRICED_PAY	0.00	0.00	0.00	-10,100.00	-10,100.00	-11,600.00	0.00	1,500.00	Scenario 3
27695	05/12/2014	Scenario 3 VM	VM	COVERED	0.00	0.00	0.00	-10,100.00	-10,100.00	-11,600.00	0.00	1,500.00	Scenario 3
27695	05/13/2014	Scenario 3 VM	VM	COVERED	-11,500.00	0.00	-11,500.00	-12,001.00	-501.00	-2,001.00	0.00	1,500.00	Scenario 3
27695	05/14/2014	Scenario 3 VM	VM	COVERED	-13,500.00	0.00	-13,500.00	4,998.00	18,498.00	10,498.00	0.00	8,000.00	Scenario 3
		Contract: Scenario 4 VM											
27696	05/12/2014	Scenario 4 VM	VM	COVERED	0.00	0.00	0.00	-10,100.00	-10,100.00	-10,100.00	0.00	0.00	Scenario 4
27696	05/12/2014	Scenario 4 VM	VM	PRICED_PAY	0.00	0.00	0.00	-10,100.00	-10,100.00	-10,100.00	0.00	0.00	Scenario 4
27696	05/13/2014	Scenario 4 VM	VM	COVERED	-10,000.00	0.00	-10,000.00	-12,001.00	-2,001.00	-2,001.00	0.00	0.00	Scenario 4
27696	05/14/2014	Scenario 4 VM	VM	COVERED	-12,000.00	0.00	-12,000.00	4,998.00	16,998.00	16,998.00	0.00	0.00	Scenario 4
		Contract: Scenario 5 VM											
27697	05/12/2014	Scenario 5 VM	VM	PRICED_PAY	0.00	0.00	0.00	-10,100.00	-10,100.00	-12,100.00	0.00	2,000.00	Scenario 5
27697	05/12/2014	Scenario 5 VM	VM	COVERED	0.00	0.00	0.00	-10,100.00	-10,100.00	-12,100.00	0.00	2,000.00	Scenario 5
27697	05/13/2014	Scenario 5 VM	VM	COVERED	-12,000.00	0.00	-12,000.00	-12,001.00	-1.00	-1,501.00	0.00	1,500.00	Scenario 5
27697	05/14/2014	Scenario 5 VM	VM	COVERED	-13,500.00	0.00	-13,500.00	4,998.00	18,498.00	10,498.00	0.00	8,000.00	Scenario 5
		Contract: Scenario 6 VM											
27698	05/12/2014	Scenario 6 VM	VM	COVERED	0.00	0.00	0.00	-10,100.00	-10,100.00	-12,600.00	0.00	2,500.00	Scenario 6
27698	05/12/2014	Scenario 6 VM	VM	PRICED_PAY	0.00	0.00	0.00	-10,100.00	-10,100.00	-12,600.00	0.00	2,500.00	Scenario 6
27698	05/13/2014	Scenario 6 VM	VM	COVERED	-12,500.00	0.00	-12,500.00	-12,001.00	499.00	1,001.00	0.00	-502.00	Scenario 6
27698	05/14/2014	Scenario 6 VM	VM	COVERED	-13,500.00	0.00	-13,500.00	4,998.00	18,498.00	10,498.00	0.00	8,000.00	Scenario 6

Load completed successfully

Pricing Details: 7/18/16 3:37:41 PM PDT

3.18.2 Underlying Trades (report type MarginCallDetailEntry)

This report displays all of the underlying trades for the selected contracts.

MarginCallDetailEntry Report (7/18/16 3:50:11 PM) / default

Report   Data   View   Export   Market Data   Utilities   Help

Criteria

Process Date	Contract Id	Contract	Trade Id	Sub Type	Net Balance	Product Type	Description	Trade Date	Set
Process Date: 04/14/2016		Contract: CP1 Contract 1 VM							
04/14/2016	39688	CP1 Contract 1 VM	64728	Liability	-100.00	CollateralExposure	CollateralExposureLiability/USD/05/13/2015/OPEN	5/12/15 4:21:00.000 PM PDT	05/1
Process Date: 04/15/2016		Contract: CP1 Contract 1 VM							
04/15/2016	39688	CP1 Contract 1 VM	64728	Liability	-100.00	CollateralExposure	CollateralExposureLiability/USD/05/13/2015/OPEN	5/12/15 4:21:00.000 PM PDT	05/1
Process Date: 04/22/2016		Contract: CP1 Contract 1 VM							
04/22/2016	39688	CP1 Contract 1 VM	64728	Liability	-100.00	CollateralExposure	CollateralExposureLiability/USD/05/13/2015/OPEN	5/12/15 4:21:00.000 PM PDT	05/1
Process Date: 07/18/2016		Contract: CP1 Contract 1 VM							
07/18/2016	39688	CP1 Contract 1 VM	64728	Liability	-100.00	CollateralExposure	CollateralExposureLiability/USD/05/13/2015/OPEN	5/12/15 4:21:00.000 PM PDT	05/1
Process Date: 05/12/2014		Contract: Scenario 1 VM							
05/12/2014	28715	Scenario 1 VM	22765	Swap Exposure	-10,000	CollateralExposure	CollateralExposureSwap Exposure/USD/05/09/2014/OPEN	5/5/14 11:38:46.000 AM PDT	05/0
05/12/2014	28715	Scenario 1 VM	22765	Swap Exposure	-10,000	CollateralExposure	CollateralExposureSwap Exposure/USD/05/09/2014/OPEN	5/5/14 11:38:46.000 AM PDT	05/0
05/12/2014	28715	Scenario 1 VM	24728	Maintenance Fees	-100	CollateralExposure	CollateralExposureMaintenance Fees/USD/05/09/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/0
05/12/2014	28715	Scenario 1 VM	24728	Maintenance Fees	-100	CollateralExposure	CollateralExposureMaintenance Fees/USD/05/09/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/0
05/12/2014	28715	Scenario 1 VM	24733	PAI	0	CollateralExposure	CollateralExposurePAI/USD/05/12/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
05/12/2014	28715	Scenario 1 VM	24743	Termination Fees	0	CollateralExposure	CollateralExposureTermination Fees/USD/05/14/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
05/12/2014	28715	Scenario 1 VM	24738	Swap payment	0	CollateralExposure	CollateralExposureSwap payment/USD/05/13/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
05/12/2014	28715	Scenario 1 VM	24738	Swap payment	0	CollateralExposure	CollateralExposureSwap payment/USD/05/13/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
05/12/2014	28715	Scenario 1 VM	24733	PAI	0	CollateralExposure	CollateralExposurePAI/USD/05/12/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
05/12/2014	28715	Scenario 1 VM	24743	Termination Fees	0	CollateralExposure	CollateralExposureTermination Fees/USD/05/14/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
Process Date: 05/13/2014		Contract: Scenario 1 VM							
05/13/2014	28715	Scenario 1 VM	22765	Swap Exposure	-12,000	CollateralExposure	CollateralExposureSwap Exposure/USD/05/09/2014/OPEN	5/5/14 11:38:46.000 AM PDT	05/0
05/13/2014	28715	Scenario 1 VM	24733	PAI	-1	CollateralExposure	CollateralExposurePAI/USD/05/12/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
05/13/2014	28715	Scenario 1 VM	24743	Termination Fees	0	CollateralExposure	CollateralExposureTermination Fees/USD/05/14/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
05/13/2014	28715	Scenario 1 VM	24738	Swap payment	0	CollateralExposure	CollateralExposureSwap payment/USD/05/13/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
05/13/2014	28715	Scenario 1 VM	24728	Maintenance Fees	0	CollateralExposure	CollateralExposureMaintenance Fees/USD/05/09/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/0
Process Date: 05/14/2014		Contract: Scenario 1 VM							
05/14/2014	28715	Scenario 1 VM	22765	Swap Exposure	-7,000	CollateralExposure	CollateralExposureSwap Exposure/USD/05/09/2014/OPEN	5/5/14 11:38:46.000 AM PDT	05/0
05/14/2014	28715	Scenario 1 VM	24733	PAI	-2	CollateralExposure	CollateralExposurePAI/USD/05/12/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
05/14/2014	28715	Scenario 1 VM	24743	Termination Fees	0	CollateralExposure	CollateralExposureTermination Fees/USD/05/14/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
05/14/2014	28715	Scenario 1 VM	24728	Maintenance Fees	0	CollateralExposure	CollateralExposureMaintenance Fees/USD/05/09/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/0
05/14/2014	28715	Scenario 1 VM	24738	Swap payment	12,000	CollateralExposure	CollateralExposureSwap payment/USD/05/13/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
Process Date: 05/30/2014		Contract: Scenario 1 VM							
05/30/2014	28715	Scenario 1 VM	24733	PAI	0	CollateralExposure	CollateralExposurePAI/USD/05/12/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
05/30/2014	28715	Scenario 1 VM	24743	Termination Fees	0	CollateralExposure	CollateralExposureTermination Fees/USD/05/14/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/1
05/30/2014	28715	Scenario 1 VM	22765	Swap Exposure	0	CollateralExposure	CollateralExposureSwap Exposure/USD/05/09/2014/OPEN	5/5/14 11:38:46.000 AM PDT	05/0
05/30/2014	28715	Scenario 1 VM	24728	Maintenance Fees	0	CollateralExposure	CollateralExposureMaintenance Fees/USD/05/09/2014/OPEN	3/5/14 11:38:46.000 AM PST	05/0

Using template: default

Pricing Details: 7/18/16 3:50:11 PM PDT ▾

3.18.3 Position (report type MarginCallPositionEntry)

The Position report displays collateral positions held across the contracts as of the collateral allocation date.

Contract Name	Type	Product Id	Product Type	ISIN	Description	Nominal	Maturity Date	Clean Price	Currency	Value	Position Type	Haircut	All-In Value	FX Rate	Contract Value	Next Coupon
Contract Name: CMF_A Standard Clearing Contract (IM)																
CMF_A Standard Clearing Contract (IM)	Security	5677	Bond	DE0001137321	BondBKO 1 12/14/12/10Y/12/14/2012/1%	-398,000.00	12/14/2012	0.99000000	EUR	-395,988.25	THEORETICAL	0.5	-394,018.16	1.5000	-591,043.83	12/14/2012
CMF_A Standard Clearing Contract (IM)	Security	5667	Bond	DE0001135275	BondDBR 4 01/04/37/10Y/01/04/2037/4%	-394,000.00	01/04/2037	0.99000000	EUR	-396,949.62	THEORETICAL	0.25	-395,959.72	1.5000	-593,956.25	01/04/2013
CMF_A Standard Clearing Contract (IM)	Security	5677	Bond	DE0001137321	BondBKO 1 12/14/12/10Y/12/14/2012/1%	-398,000.00	12/14/2012	0.99000000	EUR	-395,955.63	THEORETICAL	0.5	-393,985.70	1.2000	-472,809.38	12/14/2012
CMF_A Standard Clearing Contract (IM)	Security	5667	Bond	DE0001135275	BondDBR 4 01/04/37/10Y/01/04/2037/4%	-394,000.00	01/04/2037	0.99000000	EUR	-396,820.44	THEORETICAL	0.25	-395,830.86	1.2000	-475,023.69	01/04/2013
Contract Name: Contract for 329 Funds																
Contract for 329 Funds	Security	3112	Bond	US912828KE99	BondT 0 7/8 02/28/11/2Y/02/28/2011/0.875%	800,000.00	02/28/2011	0.0000000000	USD	0.00	THEORETICAL	0	0.00	1.00000	0.00	
Contract for 329 Funds	Security	3112	Bond	US912828KE99	BondT 0 7/8 02/28/11/2Y/02/28/2011/0.875%	800,000.00	02/28/2011	0.0000000000	USD	0.00	THEORETICAL	0	0.00	1.00000	0.00	
Contract Name: Repo contract for Market Street Bank																
Repo contract for Market Street Bank	Security	3112	Bond	US912828KE99	BondT 0 7/8 02/28/11/2Y/02/28/2011/0.875%	100,000.00	02/28/2011	0.0000000000	USD	0.00	THEORETICAL	0	0.00	1.00000	0.00	
Repo contract for Market Street Bank	Security	3112	Bond	US912828KE99	BondT 0 7/8 02/28/11/2Y/02/28/2011/0.875%	100,000.00	02/28/2011	0.0000000000	USD	0.00	THEORETICAL	0	0.00	1.00000	0.00	
Contract Name: Sec Lending Contract for Alderaan Bank																
Sec Lending Contract for Alderaan Bank	Security	3113	Bond	US912828KG48	BondT 1 3/8 03/15/12/3Y/03/15/2012/1.375%	800,000.00	03/15/2012	0.0000000000	USD	0.00	THEORETICAL	0	0.00	1.00000	0.00	
Sec Lending Contract for Alderaan Bank	Security	13302	Bond	US912810QC54	BondIADB US 1/30Y/08/15/2039/4.5%	600,000.00	08/15/2039	0.9900000000	USD	602,752.75	THEORETICAL	0	602,752.75	1.00000	602,752.75	08/15/2012
Sec Lending Contract for Alderaan Bank	Security	3113	Bond	US912828KG48	BondT 1 3/8 03/15/12/3Y/03/15/2012/1.375%	1,600,000.00	03/15/2012	0.0000000000	USD	0.00	THEORETICAL	0	0.00	1.00000	0.00	
Contract Name: Swap Contract for First Track Bank																
Swap Contract for First Track Bank	Security	12	Bond	US912810FF04	BondUST/30Y/11/15/2028/5.25%	-10,000,000.00	11/15/2028	0.95	USD	-9,539,946.00	THEORETICAL	6	-8,999,949.06	1.00000	-8,999,949.06	11/15/2012
Swap Contract for First Track Bank	Security	12	Bond	US912810FF04	BondUST/30Y/11/15/2028/5.25%	-10,000,000.00	11/15/2028	0.93	USD	-9,335,666.00	THEORETICAL	6	-8,807,232.08	1.00000	-8,807,232.08	11/15/2012
Contract Name: Swap contract for Cascade Valley Bank																
Swap contract for Cascade Valley Bank	Security	3108	Bond	DE0001135374	BondDBR 3 3/4 01/04/19/10D/01/04/2019/3.75%	-300,000.00	01/04/2019	0.99000000	EUR	-301,825.82	THEORETICAL	0	-301,825.82	1.5000	-452,764.14	01/04/2013
Swap contract for Cascade Valley Bank	Security	13304	Bond		BondFR GOV 1/0D/01/04/2019/3.75%	-800,000.00	01/04/2019	0.99000000	EUR	-804,868.85	THEORETICAL	0	-804,868.85	1.5000	-1,207,371.05	01/04/2013
Swap contract for Cascade Valley Bank	Security	4864	Equity	IT763216780	Equity.ISP.MI	-10,000.00		120.00	EUR	-1,200,000.00	THEORETICAL	0	-1,200,000.00	1.5000	-1,800,101.04	
Swap contract for Cascade Valley Bank	Security	12	Bond	US912810FF04	BondUST/30Y/11/15/2028/5.25%	-300,000.00	11/15/2028	0.93	USD	-280,069.98	THEORETICAL	0	-280,069.98	1.00000	-280,069.98	11/15/2012
Swap contract for Cascade Valley Bank	Security	13300	Bond		BondIMF US 1/30Y/11/15/2028/5.25%	-1,200,000.00	11/15/2028	0.99	USD	-1,192,279.92	THEORETICAL	0.25	-1,189,306.65	1.00000	-1,189,306.65	11/15/2012
Swap contract for Cascade Valley Bank	Security	13301	Bond		BondADB GB 1/30Y/11/15/2028/5.25%	-80,000.00	11/15/2028	0.99	GBP	-79,487.67	THEORETICAL	0.25	-79,289.45	1.5000	-118,944.30	11/15/2012
Swap contract for Cascade Valley Bank	Security	13304	Bond		BondFR GOV 1/0D/01/04/2019/3.75%	-600,000.00	01/04/2019	0.99000000	EUR	-603,651.64	THEORETICAL	0	-602,146.27	1.5000	-722,616.09	01/04/2013
Swap contract for Cascade Valley Bank	Security	3108	Bond	DE0001135374	BondDBR 3 3/4 01/04/19/10D/01/04/2019/3.75%	-289,000.00	01/04/2019	0.99000000	EUR	-290,758.87	THEORETICAL	0.25	-290,033.79	1.2000	-348,060.08	01/04/2013
Swap contract for Cascade Valley Bank	Security	4156	Equity	US2343269796	Equity.ORCL	2,500.00		200.00	USD	500,000.00	THEORETICAL	0	500,000.00	1.00000	500,000.00	
Swap contract for Cascade Valley Bank	Security	3114	Bond	US912828KD17	BondT 2 3/4 02/15/19/10Y/02/15/2019/2.75%	15,000.00	02/15/2019	0.9900000000	USD	14,980.32	THEORETICAL	0.25	14,942.97	1.00000	14,942.97	08/15/2012
Swap contract for Cascade Valley Bank	Security	4864	Equity	IT763216780	Equity.ISP.MI	2,000.00		120.00	EUR	240,000.00	THEORETICAL	0	240,000.00	1.2000	288,016.17	

Load completed successfully

Pricing Details: 8/28/12 4:23:08 PM EDT ▾

For Triparty positions, first generate MARGIN_CALL positions from the pledge trades generated by the MT569 integrated on top of the Triparty Exposure trade.

3.18.4 Position Valuation (report type MarginCallPositionValuation)

This report displays the margin call positions and their MTM valuation as of the report date.

Contract Name	Type	Description	Nominal	Clean Price	Currency	Value	Haircut	All-In Value	FX Rate	Contract Value	Next
Contract Name: CMF_A Standard Clearing Contract (IM)											
CMF_A Standard Clearing Contract (IM)	Cash	USD	-36,153.88		USD	-36,153.88	0	-36,153.88	1.00000	-36,153.88	
CMF_A Standard Clearing Contract (IM)	Cash	USD	-36,153.88		USD	-36,153.88	0	-36,153.88	1.00000	-36,153.88	
CMF_A Standard Clearing Contract (IM)	Security	BondDBR 4 01/04/37/10Y/01/04/2037/4%	-400,000.00	0.99000000	EUR	-402,863.39	0.25	-401,858.74	1.2000	-482,257.56	01/04
CMF_A Standard Clearing Contract (IM)	Security	BondFR GOV 1/0D/01/04/2019/3.75%	-400,000.00	0.99000000	EUR	-402,434.43	0.25	-401,430.85	1.2000	-481,744.06	01/04
Contract Name: Contract for J29 Funds											
Contract for J29 Funds	Security	BondT 2 3/4 02/15/19/10Y/02/15/2019/2.75%	800,000.00	0.9900000000	USD	798,950.55	0.25	796,958.15	1.00000	796,958.15	08/15
Contract for J29 Funds	Security	BondT 2 3/4 02/15/19/10Y/02/15/2019/2.75%	800,000.00	0.9900000000	USD	798,950.55	0.25	796,958.15	1.00000	796,958.15	08/15
Contract Name: Repo contract for Market Street Bank											
Repo contract for Market Street Bank	Security	BondDBR 4 07/04/16/10Y/07/04/2016/4%	80,000.00	0.99000000	EUR	82,181.42	0	82,181.42	1.2000	98,623.24	07/04
Repo contract for Market Street Bank	Security	BondDBR 4 1/2 01/04/13/25Y/01/04/2013/4.5%	50,000.00	0.99000000	EUR	50,465.16	0	50,465.16	1.2000	60,561.60	01/04
Repo contract for Market Street Bank	Security	BondDBR 3 3/4 01/04/19/0D/01/04/2019/3.75%	50,000.00	0.99000000	EUR	50,304.30	0	50,304.30	1.2000	60,368.55	01/04
Contract Name: Sec Lending Contract for Alderaan Bank											
Sec Lending Contract for Alderaan Bank	Security	BondIADB US 1/30Y/08/15/2039/4.5%	600,000.00	0.9900000000	USD	602,530.22	0	602,530.22	1.00000	602,530.22	08/15
Contract Name: Swap Contract for First Track Bank											
Swap Contract for First Track Bank	Security	BondIMF US 1/30Y/11/15/2028/5.25%	-10,000,000.00	0.99	USD	-9,935,666.00	6	-9,373,269.81	1.00000	-9,373,269.81	11/15
Swap Contract for First Track Bank	Security	BondUST/30Y/11/15/2028/5.25%	-10,000,000.00	0.93	USD	-9,335,666.00	6	-8,807,232.08	1.00000	-8,807,232.08	11/15
Swap Contract for First Track Bank	Security	BondADB GB 1/30Y/11/15/2028/5.25%	-7,500,000.00	0.99	GBP	-7,451,969.25	6	-7,030,159.67	1.5000	-10,546,137.64	11/15
Contract Name: Swap contract for Cascade Valley Bank											
Swap contract for Cascade Valley Bank	Security	BondFR GOV 1/0D/01/04/2019/3.75%	-600,000.00	0.99000000	EUR	-603,651.64	0.25	-602,146.27	1.2000	-722,616.09	01/04
Swap contract for Cascade Valley Bank	Security	BondT 2 3/4 02/15/19/10Y/02/15/2019/2.75%	15,000.00	0.9900000000	USD	14,980.32	0.25	14,942.97	1.00000	14,942.97	08/15
Swap contract for Cascade Valley Bank	Security	BondADB GB 1/30Y/11/15/2028/5.25%	-80,000.00	0.99	GBP	-79,487.67	0.25	-79,289.45	1.5000	-118,944.30	11/15
Swap contract for Cascade Valley Bank	Security	BondDBR 3 3/4 01/04/19/0D/01/04/2019/3.75%	-289,000.00	0.99000000	EUR	-290,758.87	0.25	-290,033.79	1.2000	-348,060.08	01/04
Swap contract for Cascade Valley Bank	Security	Equity.ORCL	2,500.00	200.00	USD	500,000.00	0	500,000.00	1.00000	500,000.00	
Swap contract for Cascade Valley Bank	Security	BondIMF US 1/30Y/11/15/2028/5.25%	-1,200,000.00	0.99	USD	-1,192,279.92	0.25	-1,189,306.65	1.00000	-1,189,306.65	11/15

Zero positions are not displayed in the Margin Call Position Valuation report unless there is a movement today which caused the position to go to zero.

Daily movements are put into the Margin Call Position Entry report, rather than just the daily balances. If there is a daily movement and the daily balance is zero, the zero position row is displayed in the above scenario only. Therefore, on the following day, nothing is displayed for this position since the position is zero and there is no movement on that day.

For Triparty positions, first generate MARGIN_CALL positions from the pledge trades generated by the MT569 integrated on top of the Triparty Exposure trade.

3.18.5 Allocation (report type MarginCallAllocationEntry)

This displays the allocations made for the contracts.

3.18.6 Concentration Limit (report type MarginCallConcentrationEntry)

Used to monitor concentration breaches.

Rule	Limit	Breakdown by	Breakdown Key	Previous Allocation	Current Allocation	Total Allocation	Max(%)	Available(%)	Available(Total)
Status: In Limit									
BOND DKK < 50% / BOND CHF < 50% / BOND EUR < 50 %	assets issued in CHF currency (category CHF) should not exceed, in pre HC value, 50% of contract exposure amount (Net Balance)	Static Data Filter	SDFILTER	1,000,000.00	0.00	1,000,000.00	50.00	14.29	400,000.00
BOND DKK < 50% / BOND CHF < 50% / BOND EUR < 50 %	assets issued in DKK currency (category DKK) should not exceed, in pre HC Value, 50% of contract exposure amount (Net Balance)	Static Data Filter	SDFILTER	500,000.00	0.00	500,000.00	50.00	32.14	900,000.00
Status: Out Of Limit									
BOND DKK < 50% / BOND CHF < 50% / BOND EUR < 50 %	assets issued in EUR currency (category EUR) should not exceed, in pre HC value, 50% of contract exposure amount (Net Balance)	Static Data Filter	SDFILTER	1,500,000.00	0.00	1,500,000.00	50.00	-3.57	-100,000.00

When a Collateral report is generated, it queries the database based on the designated criteria.

3.19 Generating a Margin Call Statement

When a margin call is saved, the system can generate a statement provided a message configuration has been setup. You also need to select the Send Statement checkbox in the Dates & Times panel of the margin call contract.

First, add the value MC_STATEMENT to the *messageType* domain.

Then, define a message configuration for this message type. From the Calypso Navigator, select **Configuration > Messages & Matching > Message Set-up** (menu action `refdata.AdviceSetupWindow`) as shown below.

Margin call statements will appear in the Task Station under the Messages panel as well as in the Message report. Double-click the message to view the actual statement.

Note that this statement uses a default template, and that this template can be customized as applicable. From Calypso Navigator, select **Help > Message Template Keywords** for information on customizing message templates.

» Any column available in the Margin Call Entry Report can be included in a statement using the following pattern:

|REPORT#*NameOfColumn*|

(An example of this is in the default statement in CollateralStatement.html)

» For summaries (Interest, Allocations, Positions, Underlyings), you are able to use the report template directly. An example of the format for an Allocation summary is:

|ALLOCATIONS#*NameOfReportTemplate*|

» If a report template is not set or does not exist, the system uses the one defined in the Collateral Context.

3.20 Show Menu

The following menu items are contained in the Show menu.

Menu Items	Description
Default Selection	To select the item that you want to display when you double-click a contract.
Default Selection for Template	To select the item that you want to display when you double-click a contract using the template loaded.
Contract	To bring up the margin call contract.
Allocation	Displays the Allocation window.

3.21 Margin Call Menu

The following menu items are contained in the Margin Call menu.

Menu Items	Description
Load	Loads all available margin call contracts based on the selected criteria.
Price	Calculates the margin call requirements (same as 🖥 icon). When margin calls have already been computed for the process date, select this to indicate that margin calls will be updated.
Reprice	Allows you to reprice from scratch.
Allocate	Opens the Allocation window to allow the user to enter security margin calls and cash margin in multiple currencies. See Constituting a Margin for details.
Optimize	Optimizes the margin call, based on the Optimizer selected.
Save	Saves the margin calls that have been calculated for a given contract.

3.22 Additional Scheduled Tasks

3.22.1 VM_CASH_OFFSET

Some variation margin components are pass-through payments which need to paid or received but not collateralized. The VM_CASH_OFFSET scheduled task allows margin call positions to be reversed which are related to any margin call which covers specific non-Swap Exposure variation margin components such as PAI, Maintenance Fees, Termination Fees, Swap Payments, etc....

The task attributes for this scheduled task are:

- Template – Specify a Collateral Manager Template

- Collateral Context – If a Collateral Context is not specified in the selected Template, you may specify one here. If there is a Collateral Context in both the Template and in this field of the scheduled task, this field overrides what is in the Template.

- Collateral Exposure Trade Filter – Select a trade filter for the Collateral Exposure trades

Once the scheduled task has found the relevant PL_MARKS linked to the applicable Collateral Exposure Trades (CET), a margin call trade is generated for each applicable CET. The value of each margin call trade is the inverse of the PL_MARK. (For example, if the PL_MARK for a CET is -5,000 then the scheduled task will generate a margin call trade for +5,000.)

Each generated margin call trade will have a trade keyword called VM_CASH_OFFSET with a value of true as well as a trade keyword called CET_Subtype which references the CET product subtype.

If the scheduled task is run more than once per day, the existing margin call trades will be amended.

3.22.2 COLLATERAL_DISTRIBUTION

The COLLATERAL_DISTRIBUTION scheduled task moves assets between contracts. The result of running this scheduled task is the generation of a trade type called CollateralDistribution, which facilitates the movement of collateral between contracts.

When the scheduled task is run, applicable contracts are loaded and priced in memory to determine which contracts have excess collateral and which have a deficit. It then performs the allocations in memory and generates collateral distribution trades to move assets from long contracts to the linked contracts which are short and accept eligible collateral from the long contract.

The attributes for this scheduled task are:

- Template - Specify a Collateral Manager Template. The order of the contracts to give assets is based on this template.

- Collateral Context - If a Collateral Context is not specified in the selected Template, you may specify one here. If there is a Collateral Context in both the Template and in this field of the scheduled task, this field overrides what is in the Template.

- Price Method - Select to Price or Reprice

- Optimization - A specific optimization configuration must be selected. One in which the Optimization Type is Allocation and the Solver is Allocation-rule. Three optimization constraints are required on this Optimization configuration: Collateral-Distribution, Required-Margin and Eligibility

- Sweeping Type - This is the type of excess sweeping being done. The options are:

  – Move Excess to Deficit: moves excess collateral to linked contracts that have a deficit

  – Sweep All Deficit: All deficit of the net position in base currency is moved from the first linked contract, such that the source contract will have 0 GRM

  – Sweep All Excess: All remaining excess of net position in base currency is moved to the first linked contract, such that the source contract will have 0 GRM.

- Native CCY VM to Native CCY IM Sweeping - Restricts sweeping of cash between exposure groups if the base currencies of the variation margin and initial margin do not match.

No report is generated from the running of the scheduled task. To view output, load the collateral distribution trades in the Trade Browser. Two keywords are added to the trades, *SourceConfigId*, which is the contract Id of the contract giving the asset, and *DestinationConfigId*, which is the contract Id of the contract receiving the asset.

It is possible to use this scheduled task to sweep from Master to Exposure Group and Exposure Group to Exposure Group.

3.22.3 EOD_SEC_MARGINCALL_VALUATION

In Calypso, the publication of the NPV of a margin call agreement is the net value. For some disclosure purposes, the value needs to also be recorded per ISIN. The Position Valuation report can be used with this scheduled task to publish the NPV per security and margin call agreement.

The EOD_SEC_MARGINCALL_VALUATION scheduled task uses a Position Valuation Report to publish the position valuation so that the accounting engine can generate entries.

The scheduled requires only a pricing environment. It contains two attributes:

- *Collateral Config Level* (optional) – possible values are Master and Exposure Group
- *Position Type* (mandatory) – possible values are THEORETICAL, EXPECTED, ACTUAL, NOT_SETTLED and ROLLED_INTEREST

When launched, the scheduled task loads a Position Valuation Report using the *Config Level*, *Position Type* and *Processing Org* fields from the scheduled task configuration. The *Underlying Type* is automatically *security*. The *Valuation Date* and *Pricing Environment* of the scheduled task are the ones used for the report.

The accounting event MARGIN_SECURITY_POSITION is used. It is based on MARGIN_SECURITY. The trigger event is POSITION_VALUATION_MARGIN.

Postings are generated on the previous event.

3.22.4 COLLATERAL_TREND

The COLLATERAL_TREND scheduled task can track data over a period of time and supply the information to populate Trend widgets in the Collateral WebUI dashboard. This scheduled task will run overnight and will collect margin call contract data on a daily basis.

The scheduled task has two attributes:

- *Run for back dated*(mandatory) - possible values are true and false.
- *Number of Back Days*(optional) - enter the number of days.

4. Collateral Optimization

The collateral optimization function of Calypso allows you to allocate collateral payment by making the best use of the global collateral inventory. The Optimization tool can be tailored to adhere to various business or relationship constraints that may need to be taken into account.

> ### *Collateral Optimization Quick Reference*
>
> #### Optimization Panels
>
> * Allocation: This panel is available in the Collateral Manager and in the Cover Distribution Manager as a tabbed panel at the bottom portion of the window.
>
>   The allocation panel shows how the contract will be or has been allocated (depending on whether the margin call trades have already been saved or not). This is true whether the user allocates the margin using an optimizer or not.
>
>   In Cover Distribution Manager, the allocation panel shows how the collateral in the deposit account has been allocated to cover the liabilities, as well as necessary margin calls.
>
>   Graphs can be create based on this panel
>
> * Netted Allocation: This panel is available in the Collateral Manager as a tabbed panel at the bottom portion of the window.
>
>   Like the panel described above, this panel shows the allocation. The difference is that in this panel, the allocation can be viewed for one, multiple or all the contracts loaded in the collateral manager. The point of this panel is to have a more global view at multi-contract level, unlike the 'allocation' panel which only shows the allocation for one contract at a time
>
>   Graphs can be create based on this panel
>
> * Concentration: If the optimizer has to respect any concentration constraints, you may view the usage of these in:
>
>   - The Concentration Limits panel of the Allocation window
>   - The Concentration panel in the Collateral Manager
>   - The history of concentration can be viewed in the Concentration History panel of the Allocation window.
>
> #### Columns
>
> When running the Optimizer, the following columns may be useful:
>
> * **Type**: Margin (for a new margin), Substitution, Previous Margin
> * **Comment**: This can provide some information on the allocation, for example, "Automatic Allocation" or why the collateral was substituted.

- **Category**: Displays the static data filter to which the collateral belongs for the margin call contract's eligible collateral
- **Optimization Category**: Displays the static data filter to which the collateral belongs in the optimization configuration
- **Optimization Price**: Equal to the price of the collateral as can be seen in the optimization configuration
- **Optimization Cost**: Equal to the (Nominal)(fx_rate)(Price)(Haircut)(Optimization Price) This is reported in base currency.

These columns can be added in:

- The Allocation window, Allocation panel
- Collateral Manager/Cover Distribution Manager, Allocation panel
- Collateral Manager/Cover Distribution Manager, Netted Allocation panel.
- Cover Distribution Manager, Used/Unused Deposit panels

Check Position Market Data

This function is available in the Allocation window, **Util > Check Position Market Data**
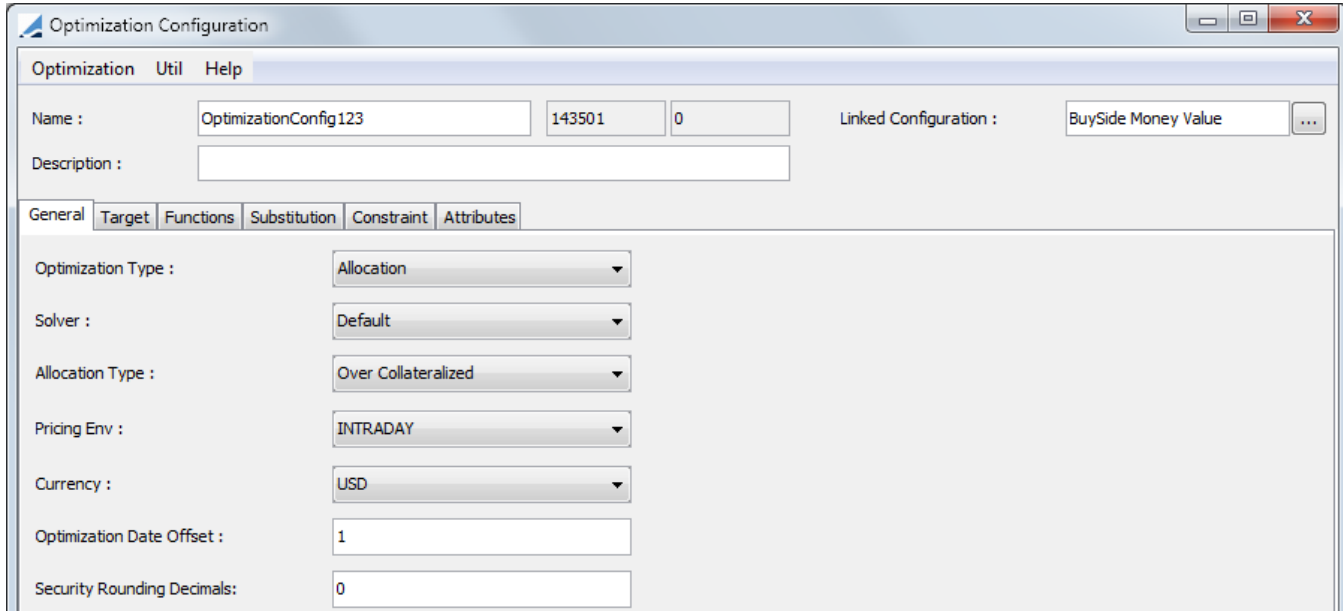
If the box 'Check Allocation Position' is checked in the Option portion of the Collateral Manager window, this gives you all the missing quotes on the security positions.

Option	
Update Process time	☐
Reload Positions	☐
Previous Date Quotes	☐
Update Existing Trades	☐
Check Allocation Position	☑
Validate Securities	☐

4.1 General Configuration

The Collateral Optimization window is available in the Margin Call contract window under **Util > Optimization Configuration**.

refdata.optimization.OptimizationConfigurationWindow

Fields	Description
Name	Name of the collateral optimization configuration
Description	Description of the collateral optimization configuration
Linked Configuration	A Distribution Configuration can be selected in this field to link to the Optimization Configuration. With a Linked Configuration selected, the contract will be optimized for an allocation distribution automatically after the initial optimization. This functionality is used with Exposure Groups.
Optimization Type	When the Optimization Configuration window is accessed through a bilateral margin call contract or Collateral Manager, the Optimization Type options are *Allocation* or *AllocationDistribution*. The *AllocationDistribution* is used exclusively for Buy Side Fund Distribution. When the Optimization Configuration window is accessed through a clearing member contract or Cover Distribution Manager, the Optimization Type options are *CoverDistribution* and *FinalDistribution*.
Solver	Solver choices can vary depending on the Optimization Type chosen. For the Bilateral solvers: • The options available for *Allocation* Optimization Type are: *Allocation-Rule*, *Default* and *Simplex*. (*ConjugateGradient* is not used.) Note: It is advised to use the *Allocation-Rule* solver in place of *Default*. • The options available for *AllocationDistribution* are *Money-Value*, *Collateral-Quantity* and *Targeted-Allocation*.

Fields	Description
	For the Cover Distribution solvers, the options are the same regardless of the Optimization Type. The solvers available are *Distribution-Rule* and *Asset-Distribution-Rule*. These Solvers are described below.
Allocation Type	Choose between: • **Over Collateralized** – The nominal is rounded UP, leaving the price unadjusted. • **Under Collateralized** – The nominal is rounded down to the nearest face value increment, leaving the dirty price at the market value, which would leave the collateral slightly under collateralized. • **Over-Price Adjustment** – Nominal is taken off the position, then the dirty price of the security is adjusted DOWN so that the total money amount is exactly equal the remaining money amount on the collateral • **Under-Price Adjustment** – Nominal is taken off the position (by taking the nominal required and rounding down to the nearest face value increment), then the dirty price of the security is adjusted UP so that the total money amount is exactly equal to the remaining money amount on the collateral.
Security Rounding Decimals	Entering a value in this field, allows you to specify the nominal precision for an allocation. Using fractional amounts for the nominal allows you to leave the price unchanged (or minimally changed) to perfectly equal the exposure amount.
Pricing Environment	Pricing environment to use for the FX rate in case more than one collateral contracts are optimized at once
Currency	The default currency. This is used in case more than one collateral contract is optimized and the contract currencies are different.
Optimization Date Offset	The options for this field are 0 and -1. If this is set to -1, the optimizer looks at inventory as of the previous day. This can be used to offset dates for Static Data Filter, Bond, Equity, Eligibility and Inventory optimization constraints.

4.2 Solvers

Calypso has eight optimizers (or solvers), Simplex and Allocation-Rule, used for the *Allocation* Optimization Type, Money-Value, Collateral-Quantity, Exposure-Based and Targeted-Allocation, used for the *Allocation Distribution* Optimization Type and Distribution-Rule and Asset-Distribution-Rule, used for the *Cover Distribution* & *Final Distribution* Optimization Types. These optimizers are described below.

4.2.1 Simplex Solver

The simplex solver is more complex than the default solver. It will find the best solution that respects all of the constraints.

The implementation of the Simplex algorithm has been tested for a benchmark of up to 10,000 securities, 100,000 trades, 1,000 contracts and 30,000 concentration limits. This is also dependent on the size of the inventory, the complexity of the eligibility and haircut data, the number of legal agreements being simultaneously processed and the available memory and CPU resources on the user's workstation.

Example of Simplex Solver

Assuming the following:

- There are two candidates, Bond A and Bond B

- There are 1,000 of Bond A and 2,000 of Bond B

- The concentration limit indicated that the allocation cannot be more than 60% of Bond A

- The Target Limit is Minimize-Cash

- Required Margin is 2,000

It would be translated as:

Target
F = Cash (Minimize)
Constraints

Bond A < 1,000	Bond A Inventory Constraint
Bond B < 2,000	Bond B Inventory Constraint
Bond A + Bond B + Cash = 2,000	Required Margin Constraint
Bond A ≤ 1,200 (2,000 x 60%)	Concentration Constraint
Bond A, Bond B, Cash > 0	

Implementation for Simplex Solver

There are three implementations available for this solver:

» Minimize-Cash

In this case, the target is to minimize cash. The weight will be 0 for all assets, except the cash that will be weighted at 1. It can be translated mathematically to F = Cash

» Collateral-Cost (minimize or maximize)

The weight (cost) of each asset comes from a pricer that needs to be implemented.

» Weighted-Category (minimize or maximize)

For each asset class, you must define a weight.

If the target is to *minimize*, the optimizer will first give assets with the smallest weight and keep the assets with the biggest weight.

If the target is to *maximize*, the optimizer will first give assets with the biggest weight and will keep the assets with the smallest weight

It can be translated mathematically to F = Wcat1.BondA + Wcat1.BondB + Wcat2.BondC + Wcat3.Cash

Goal Type - This is defined only if the optimizer is Simplex and the Target Type is Weighted-Category. You must define whether the optimizer's goal is to minimize or maximize.

Inventory - Mandatory constraint for a Simplex/Weighted Category solver.

4.2.2 Allocation-Rule Solver

The Allocation-Rule solver performs allocations using a set of rules that defines the steps of the collateral selection. This selection is made after every other constraint is applied. This rule is based on allocation preferences. It selects the best collateral based on the rules and allocates as much of this collateral as possible while respecting the defined constraints, such as eligibility or concentration.

The target configuration type that must be used for this optimizer is Allocation-rule.

4.2.3 Distribution-Rule Solver

This solver is used with Cover Distribution.

The Distribution-Rule optimizer is an order based algorithm. It finds a solution based on the target that respects all of the constraints. It first sorts the liabilities, then sorts the assets to cover within each liability. Each liability is fully processed before moving on to the next liability. The target configuration type that must be used for this solver is Distribution-rule.

4.2.4 Asset-Distribution-Rule Solver

This solver is used with Cover Distribution.

This also is an order based algorithm. With this rule, each asset preference is applied to the liabilities in the liability order over multiple passes, with the different asset preferences. In this model, each liability is not fully processed before moving on to the next. Instead, each asset preference is allocated before moving on to the next asset preference. The target configuration type that must be used for this solver is Asset-distribution-rule.

4.2.5 Exposure-Based Solver

This solver is used to distribute cash to Exposure Groups based on the ratio of each Exposure Group's Net Balance over the total Net Balance, minus the previous day's cash balance per Exposure Group.

4.2.6 Money-Value Solver

This solver is used for Buy Side Fund Distribution. It is used for collateral distribution for cash margin call trades.

4.2.7 Collateral-Quantity Solver
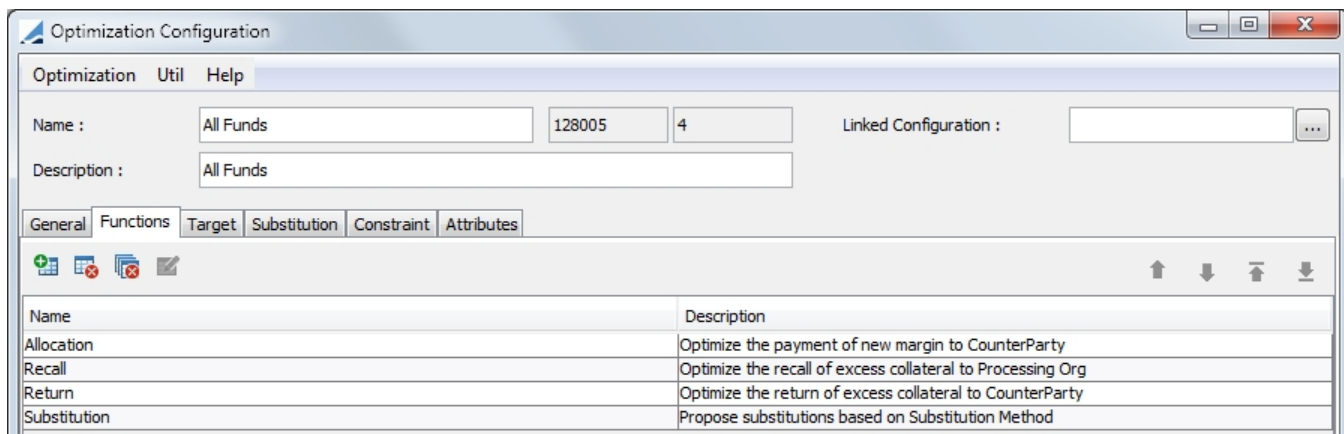
This solver is used for Buy Side Fund Distribution. It is used for collateral distribution for security margin call trades.

4.2.8 Targeted-Allocation Solver

This solver is used for Buy Side Fund Distribution. It is used for collateral distribution for security margin call trades.

4.3 Functions

In this panel, you are able to select various functions that will take place during an optimization. These include, Allocation, Recall, Return and Substitution.

The *Return* function returns the cheapest excess collateral back to the Counterparty using the Target Configuration defined in the Optimization Configuration. The *Recall* function returns the most expensive excess collateral back to the Processing Org but does the inverse of what is set in the Target Configuration.

For example, if the Target Configuration is set to Minimize, Return will minimize and Recall will maximize. If the Target Configuration is set to Maximize, Return will maximize and Recall will minimize.

All functions (Allocation, Recall, Return and Substitution) are set by default in the Functions panel. If you do not wish to have a particular function performed, it must be deleted manually.
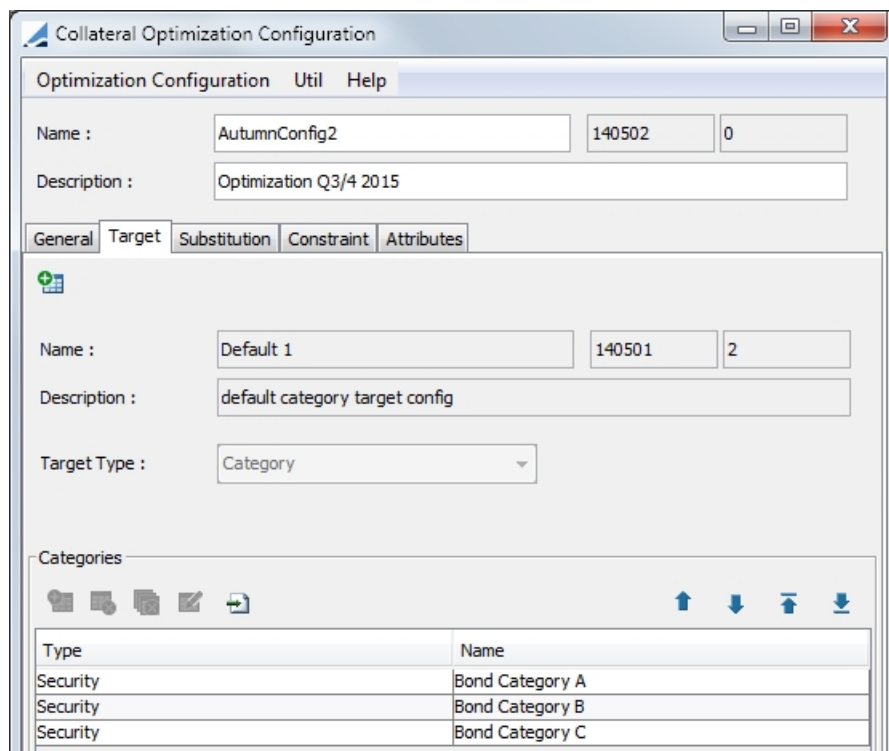
4.4 Target Configuration

The Target panel enables you to define the target for the optimization such as minimizing cash, optimizing based on a category, category weighting or based on collateral cost as well as your target allocation for cover distribution.

In the Default optimizer, the securities available for allocation are the securities that are designated in the Eligible Securities panel of the contract definition as well as in the categories selected in the target. (This is if the target contains categories which would be in the Target Types *Category* or *Weighted Category*.)

For example, if Bond A is not in the target category, it will not be included in the allocation considerations even if it is designated in the Eligible Securities panel of the contract.

For the currencies available for allocation, they do not have to be contained in a category in the target type to be available. But, if a currency is not designated in the target category but it is designated in the Eligible Currencies panel of the margin call contract, it will be last in the order of allocation. Therefore, it will be used at the end if there is a remaining margin to pay.

To define a target in your optimization configuration, you must first create a target configuration. Select **Util > Target Configuration** in the Optimization Configuration window.
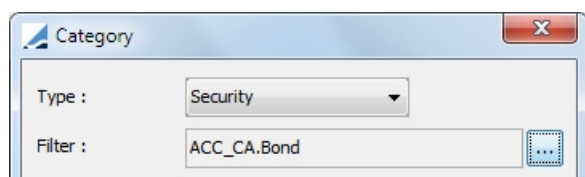
Fields	Description

Target Type	Select the desired target type:
	
	• **Minimize-Cash** - Minimizes the cash used across the contracts to pay the total required margin
	
	• **Weighted-Category** - Associates a weight to a set of products. The smaller the weight, the higher the allocation preference.
	
	• **Collateral-Cost** - Allows the user to use real market data for weights rather than individual uer-defined values. This allows the Optimizer the ability to consider the security's borrow/lend rate in the decision making algorithm and choose the security with the best rate. For the Collateral-Cost Target Type, there are two options either API or Product Code.
	
	   – Product Code: The options for Product Code are populated from the *CollateralCostProductCodes* domain value. A Goal Type of Minimize or Maximize must also be selected. This target type will optimize the Product Codes of all securities which are eligible for the contract which have valid positions.
	
	   The Cash Cost area is used to assign collateral cost to cash assets being allocated. As many currencies may be added as desired but any given currency can only be listed once. Each currency added is given a cost.
	
	   – API: The cost comes from a pricer configured in *calypsox* using the following formatting:
	
	``
	String name = product.getType();
	String className = "tk.collateral.optimization.pricer.impl." + name
	+ "CollateralPricer";
	``
	
	• **Category** - Allocation preference is defined by the order in the category list
	
	• **Allocation-rule** - Used for bilateral collateral management. Only used with Allocation-Rule optimization type. See Allocation-rule Target Configuration.

Fields	Description
	• **Distribution-rule** - Used for cover distribution only. Used only with Cover Distribution optimization type. See [Distribution-rule Target Configuration](#). • **Asset-Distribution-rule** - Used for cover distribution only. Used only with Cover Distribution optimization type. See [Asset-Distribution-rule Target Configuration](#). • **Trade-Allocation-rule** - This is used with the Trade Allocation Manager. Refer to documentation on the Trade Allocation Manager for details.
Goal Type	Only used with Weighted-Category and Collateral-Cost Target Types. The goal may be to either Minimize or Maximize the collateral in the category or inventory.
Reverse Haircut	Selecting this checkbox makes the optimization price equal to *weight * 1/haircut*.
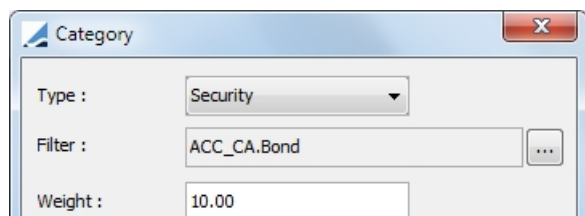
Click to add a category.

» For Category, you may select either a security or cash for the category.

» For the Weighted-Category target type, you must also select a weight.

» For a Weighted-Category, you are able to import categories by selecting in the Categories area at the bottom of the window. You can upload a .csv file with the following columns:

– Security or Cash

– a static data filter name

– the optimization price for this category

NOTE: When selecting a static data filter for a security, the filter should be associated with the group ANY or Margin Call.
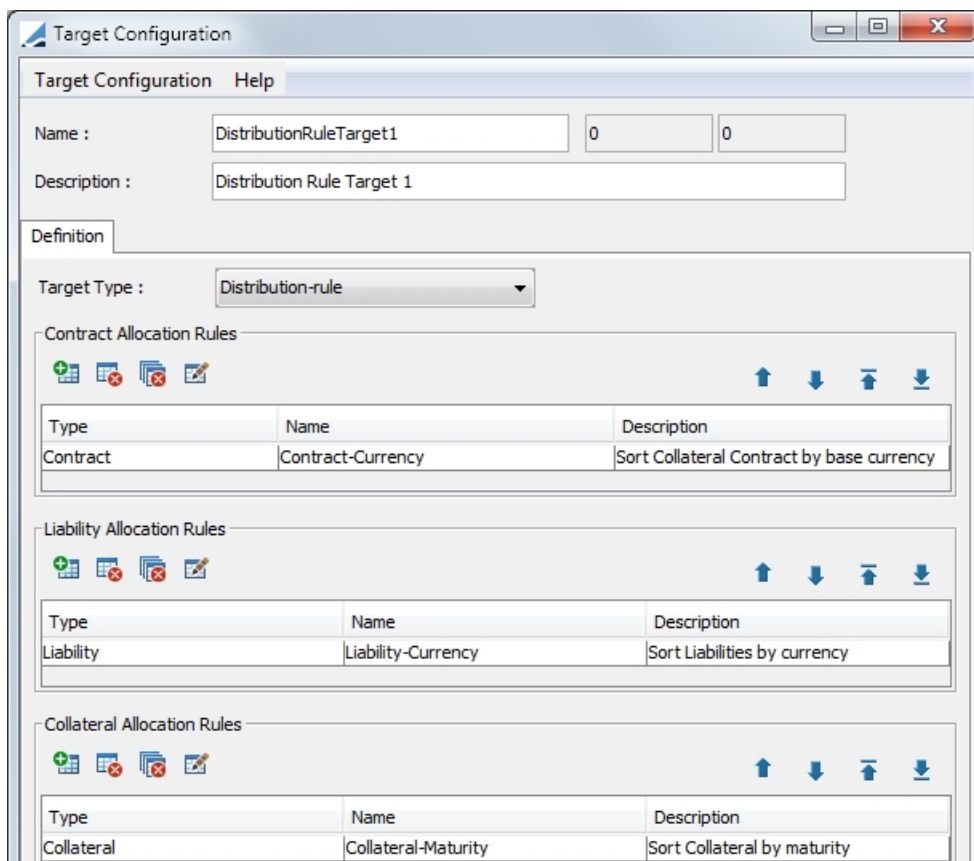
4.4.1 Distribution-rule Target Configuration

The target configuration for the Distribution-rule Target Type is more complex than the other target type configurations.

ⓘ **This target type is used specifically for the Distribution-Rule solver which is used specifically for Cover Distribution.**

When you select the target type of Distribution-rule, there are three allocation rules that must be defined. The definition of these rules is the basis for the Distribution-Rule solver. The solver addresses these rules in order of the rule and also in order within the rule. Therefore, the priority ordering that is created for these rules is critical to the cover distribution result.

This configuration is comprised of Contract Allocation Rules, Liability Allocation Rules and Collateral Allocation Rules.

4.4.2 Allocation-rule Target Configuration

This target type is used specifically for the Allocation-Rule solver which is used only for bilateral collateral management.

When you select the target type of Allocation-rule, there are three allocation rules available for definition. Contract and Collateral Allocation rules should both be defined. Group Allocation Rules should be defined based on a user's needs. These rules apply to Exposure Groups.

The definition of these rules is the basis for the Allocation-Rule and Targeted Allocation Rule solvers. The solvers addresses these rules in order of the rule and also in order within the rule. Therefore, the priority ordering that is created for these rules is critical to the collateral allocation result.

This configuration is comprised of Contract Allocation Rules, Group Allocation Rules and Collateral Allocation Rules.

4.4.3 Asset-Distribution-rule Target Configuration

ⓘ **This target type is used specifically for the Asset-Distribution-Rule solver which is used for Cover distribution**

When you select the Asset-Distribution-rule, there are two allocation rules that must be defined. The definition of these rules is the basis for the Asset Distribution-Rule solver. The solver addresses these rules in order of the rule and also in or within the rule. Therefore, the priority ordering that is created for these rules is critical to the cover distribution result.

This configuration is comprised of Contract Allocation Rules and Collateral Allocation Rules.

4.4.4 Trade-Allocation-rule Target Configuration

This target configuration is used for Money Fill Repo Allocation. For details, refer to the Repo Trading Guide.

4.4.5 Contract Allocation Rules

This rule allows you to specify which type of contract you would like to use first for allocation. You may specify an attribute, contract currency, subtype, type or margin requirements. (The attribute selections are taken from the Additional Info panel of the Margin Call Contract.)

It is possible to have liabilities on both a deposit and a child contract.

4.4.6 Group Allocation Rules

This rule applies to Exposure Groups. The Group Allocation Rules are not mandatory, but they will apply if Exposure Groups are optimizable in the scenario setup. Not all Exposure Groups can have their order of allocation optimized,

this depends on other configurations.

You may specify to sort by group currency or group margin.

Select to sort either by group currency or group margin.
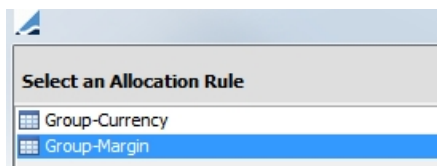
Click Next.

If Group-Currency is chosen, you are prompted to select the currency or currencies in the next window. If there are multiple currencies, they will be sorted in the order that is specified.

If Group-Margin is chosen, Exposure Groups will be sorted by required margin in either ascending or descending order.

4.4.7 Liability Allocation Rules

The liability allocation rules specify type of liabilities to allocate and in which order. Select to add a new rule.

Select to either sort the liabilities by currency or by name.
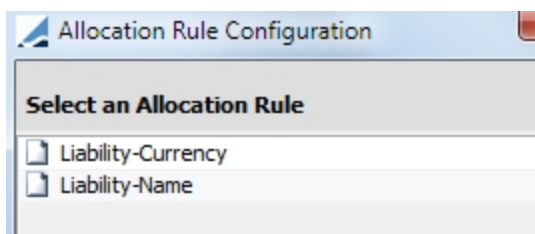
Click **Next**.

If you choose Liability-Currency, you are prompted to select the currency or currencies in the next window. If there are multiple currencies, they will be sorted in the order that is specified.
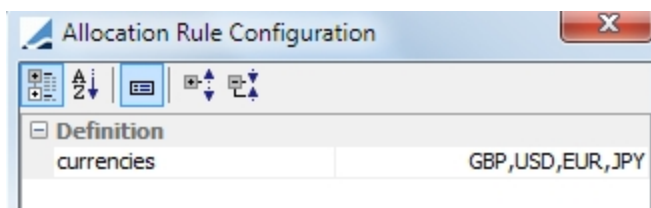
If you choose Liability-Name, you are prompted to select a liability group or groups and a direction for the sorting, ascending or descending.

Excess buffer maybe a liability group in this scenario as well. In order to have the excess buffer allocated last, add a rule with Liability-Name with only excess buffer selected as the group with descending order. Then, you may sort by Liability-Currency. After that, add another Liability-Name rule that contains the remaining groups by which you would like to sort using ascending order.
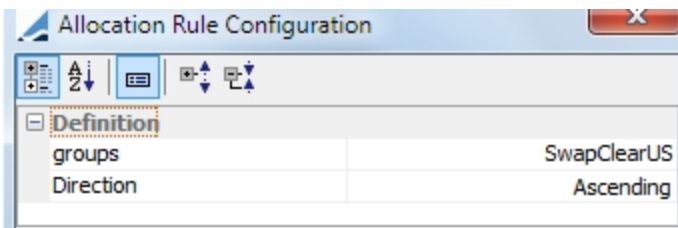
The solver will look at the first rule first, in the above example, sorting the liabilities by currency. Then, it will sort those in the designated group by name in ascending order.

4.4.8 Collateral Allocation Rules
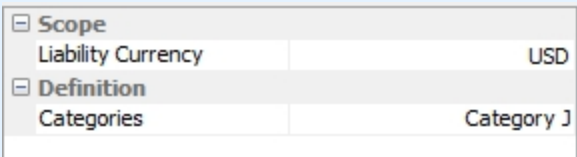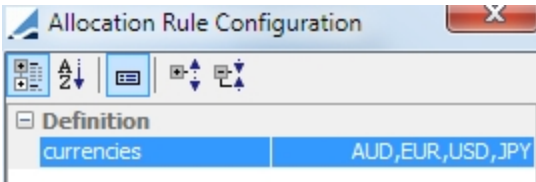
This rule set, allows you to specify the collateral allocation order.

You have the ability to designate collateral based on available quantity, category and currency.

For Cover Distribution, you also may elect to use the cover preferences specified in the clearing member contract.
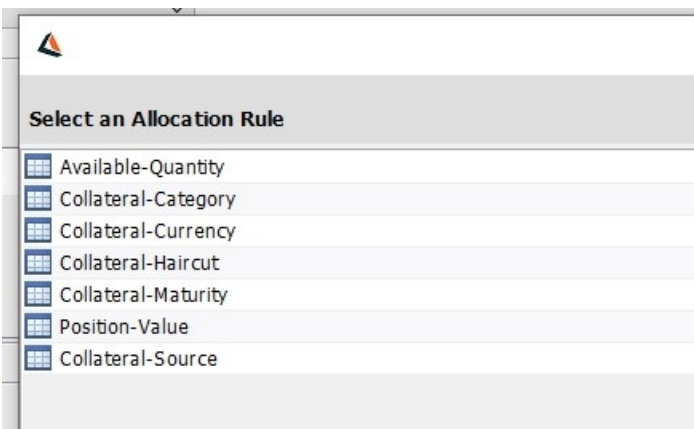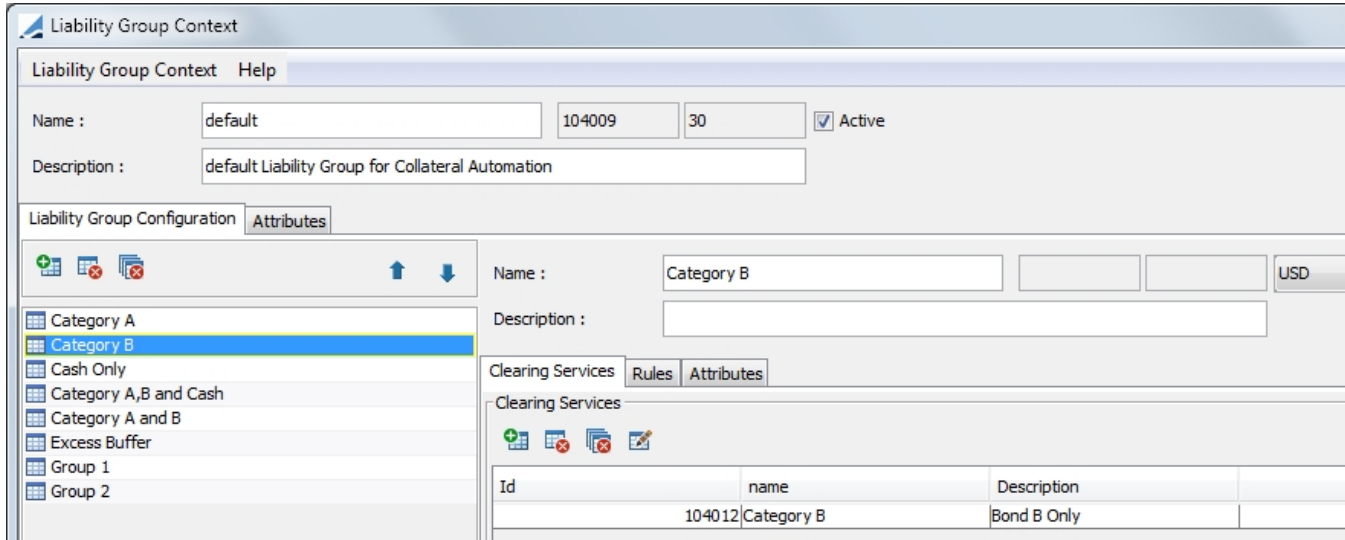
Rule Type	Description
Available-Quantity	Specify ascending or descending order. This rule takes into account any constraint based on quantity.
Collateral-Category	Specify the liability currency for the category as well as the category target configuration used as an order preference for the categories.

Rule Type	Description
Collateral-Currency	Select a currency or multiple currencies by which to sort the collateral. The collateral will be sorted by the currencies in the order specified.
Collateral-Haircut	Sort collateral by haircut, ascending or descending.
Collateral-Maturity	Sort collateral by maturity, ascending or descending.
Position Value	Sort security by position value, ascending or descending.

4.4.9 Liability Group Configuration
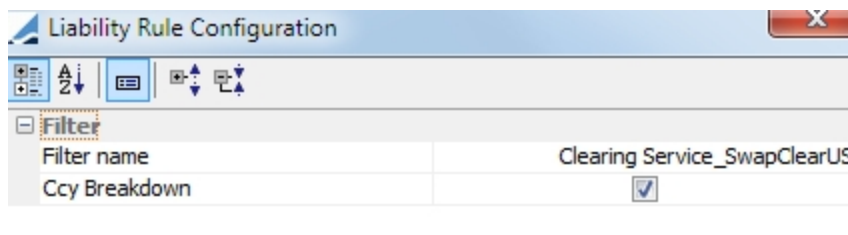
The creation of liability groups allows for the combining of liabilities and placing them into a group so that they may be considered as the same in terms of cover distribution.

Liability group configuration is done in the Liability Group Context window. This window can be accessed from the clearing member contract by selecting **Util > Liability Group Configuration** `refdata.clearing.LiabilityGroupContextWindow`.
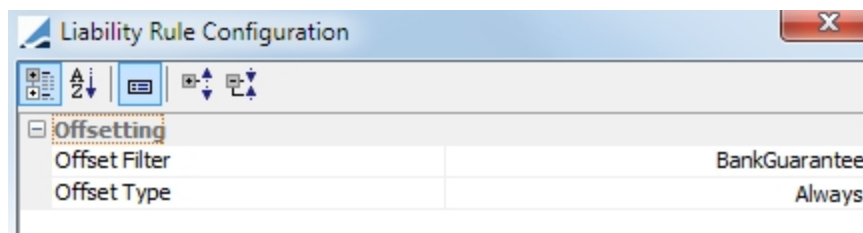
Follow the steps below to configure a liability group.

» Enter a liability group name and description and select a currency.

» Designate the clearing services to which the liability group subscribes.

» Define rules that apply specifically to the liability group. The rule types are:

  – **Excess Buffer** - When this rule is defined, it means that the excess buffer that is defined at the contract level is used as a liability group.

  – **Liability Grouping** - This rule allows you to group liabilities to match a specified static data filter. Select the static data filter to use. Select the Ccy Breakdown checkbox if you wish to group the liabilities per currency. If you do not select the Ccy Breakdown checkbox, there will be one group for all currencies.
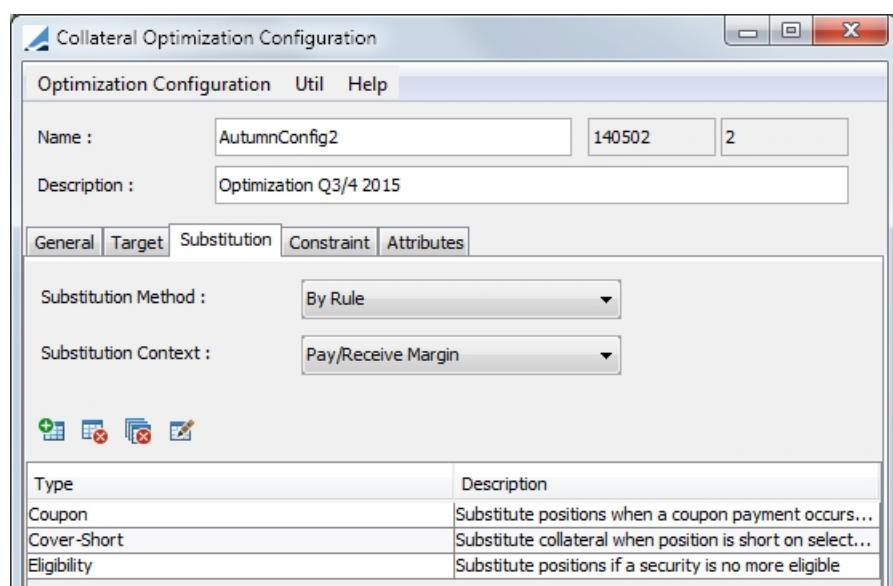
  – **Liability Offsetting** - This rule allows you use positive liabilities to offset negative liabilities. This rule is always based on a static data filter. Select the offset filter and the offset type, either Always or By Filter

4.5 Substitution

The Substitution panel determines if the optimizer should proceed to substitutions and if so, under which conditions. Substitutions would occur when collateral previously part of the optimal solution is no longer part of the latest optimal solution when the optimizer is re-run.

» If substitution is not allowed, even if collateral previously given as collateral no longer fits the optimal solution, the collateral will not be moved back in the inventory and will not be replaced by other collateral.

» If substitution is allowed, then if collateral previously given as collateral no longer fits the optimal solution, it will be replaced by other collateral.

» For Cover Distribution, the Substitution Method must be *Always*.

4.5.1 Substitution Methods

You may choose from three substitution methods:

- **Never –** The optimizer never proceeds to substitution. This limits the number of trades and therefore the cost. But, if eligibility rules change, collateral given out may no longer respect those rules.

- **Always –** The optimizer will always proceed to substitution. Using this option always ensures the best possible allocation. But, it may create a large number of trades. Previously delivered collateral will not be reallocated to another contract. Only collateral in the inventory will be substituted.

  This is the required option to be used in cover distribution.

  When *Always* is selected, a Substitution Delta field is displayed. A designation in this field prevents substitution of like for like collateral by reducing the weight of previously delivered collateral by the value in the Substitution Delta field.
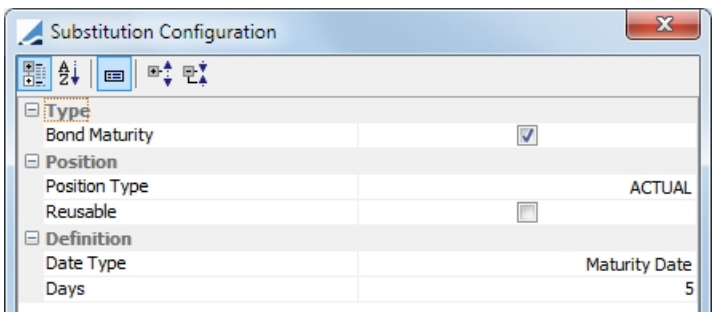
This value should be set based on the number of decimals present in the weighting table of the weighted category Target configuration. If weights are defined to 2 decimal places, then a delta of .01 means assets of identical weight will be less preferable to the previously delivered collateral.
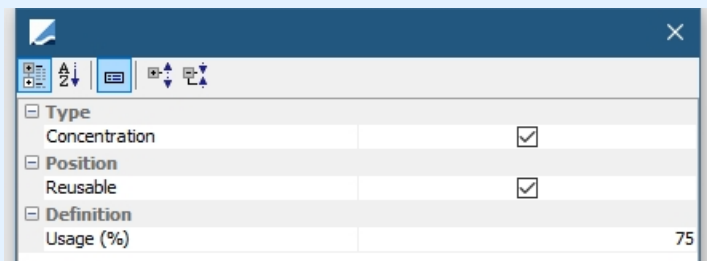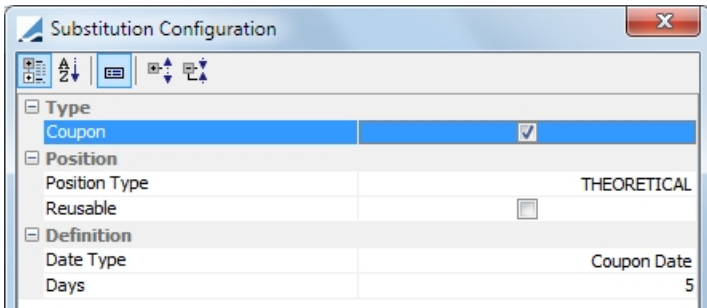
For example, a previously delivered asset with a weight of 10.25 will be considered as having a weight of 10.24 and therefore is preferable to another asset with the same weight in the inventory. The delta can be set to a larger value to increase the material benefit of a substitution. Setting to delta to 1 in the above example would mean that the previously delivered asset with a weight of 10.21 will only be substituted if it finds an asset in the inventory with a weight of 9.24 or less.
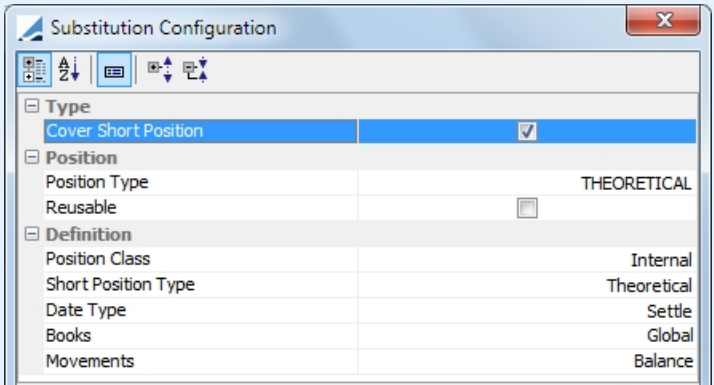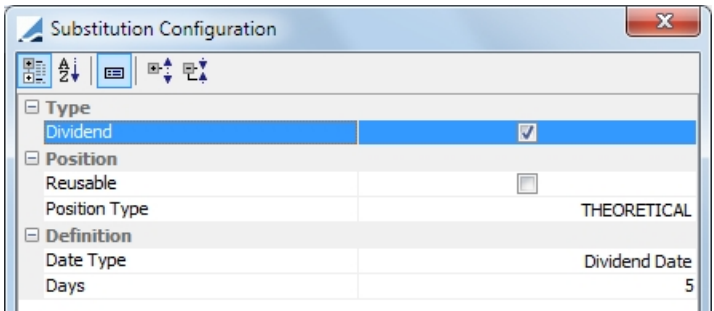
- **By Rule –** If this option is chosen, click to display the Substitution Configuration window. The options in this window are described below.
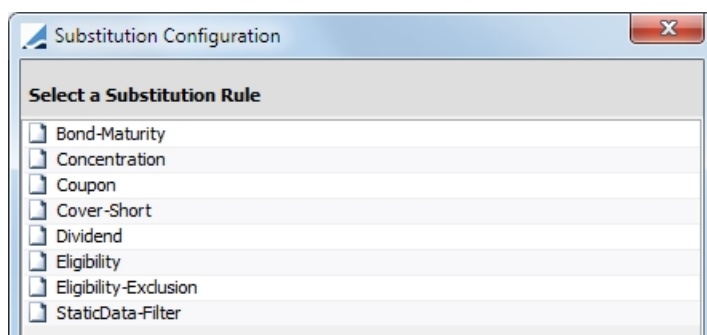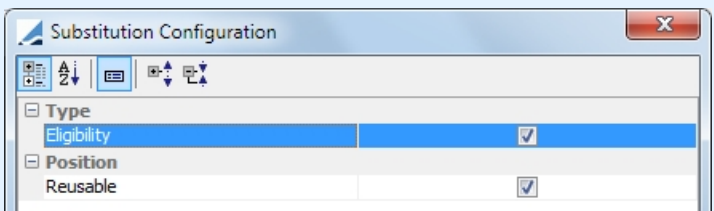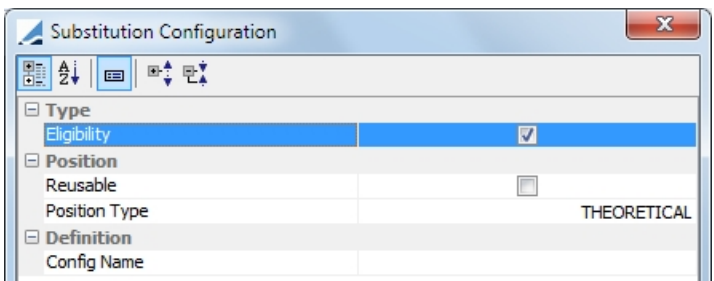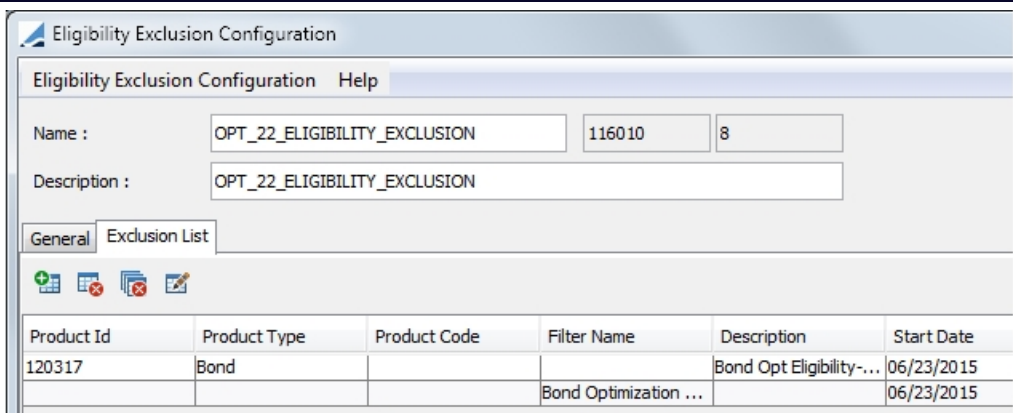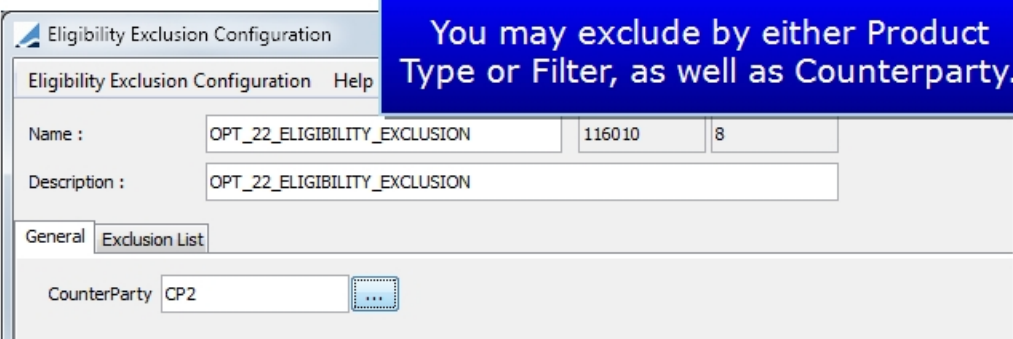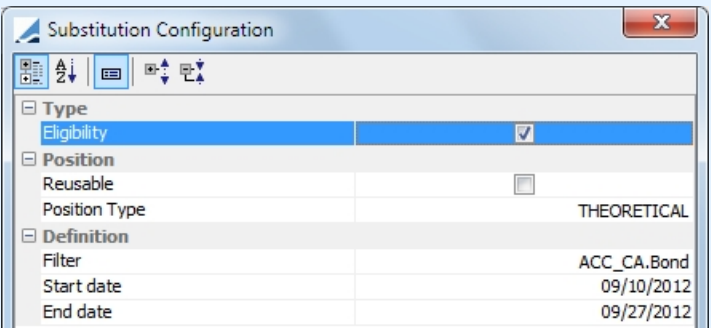
Each of the available substitution rules are detailed below.

Rule	Description
Bond-Maturity	Substitute positions when a bond maturity date is occurring in the next *n* days. **Position Type:** ACTUAL or THEORETICAL **Reusable:** not applicable (not reusable) **Date Type:** Maturity Date is the only option **Days:** Enter the number of days within which the bond maturity date should be for substitution. These days are business days, using the security holiday calendar.
Concentration	Substitute positions when a concentrations limit is breached.

Rule	Description
	Reusable: Select if the substituted position can be re-used for the allocation concentration rule type. **Usage (%):** Usage per cent of the concentration limit Cash concentration limit breaches are considered when allocating collateral using the Allocation-Rule solver with the Concentration rule set. Cash collateral substitution is automatically created.
Coupon	Substitute position if a coupon payment is to occur in the next 'x' days. **Position Type:** ACTUAL or THEORETICAL **Reusable:** If this is selected, the optimizer re-injects collateral that has been called into another allocation. If it is unselected, re-injection is not possible. **Date Type:** Coupon Date or Record Date **Days:** If a coupon payment is to occur under the designated number of days, the security is not used by the optimizer as a substitution. These days are business days, using the security holiday calendar.
Cover Short	Substitute position when a position is short on selected books.

Rule	Description
	Position Type: ACTUAL or THEORETICAL **Reusable:** If this is selected, the optimizer re-injects collateral that has been called into another allocation. If it is unselected, re-injection is not possible. **Position Class:** Position class filter. Select from Internal, External, Client Margin_Call **Short Type Position:** Any position defined in the Inventory Position such as Actual, Not Settled, Theoretical, Expected, Forecast, etc... **Date Type:** Available, Booking, Settle or Trade Date **Books:** Select books considered for this substitution rule. **Movements:** Any balance of movement type defined in the Inventory Position.
Dividend	Substitute position if a dividend payment is to occur in the next 'x' days. **Reusable:** If this is selected, the optimizer re-injects collateral that has been called into another allocation. If it is unselected, re-injection is not possible. **Position Type:** ACTUAL or THEORETICAL **Date Type:** Date type description, Coupon Date or Record Date **Days:** If a dividend payment is to occur under the designated number of days, the security is not used by the optimizer. These days are business days, using the security holiday calendar.
Eligibility	Substitute position if a security is no longer eligible.

Rule	Description
	Reusable: If this is selected, the optimizer re-injects collateral that has been called. If it is unselected, re-injection is not possible.
Eligibility - Exclusion	Substitute position if a security is part of the temporary exclusion configuration. Reusable: If this is selected, the optimizer re-injects collateral that has been called into another allocation. If it is unselected, re-injection is not possible. Position Type: ACTUAL or THEORETICAL Config Name: Any configuration defined in the Eligibility Exclusion Configuration window. To access this window, in the Collateral Configuration Optimization window, select **Util > Eligibility Exclusion**.

Rule	Description
Static Data Filter	Substitute position if a security belongs to a designated static data filter. **Reusable:** If this is selected, the optimizer re-injects collateral that has been called into another allocation. If it is unselected, re-injection is not possible. **Position Type:** THEORETICAL or ACTUAL **Filter:** Select any defined static data filter **Start date:** Substitute positions if a security matches a static data filter after the start date. The start date is compared against the value date of the margin call entry. **End date:** Substitute positions if a security matches a static data filter before the end date. The end date is compared against the value date of the margin call entry.

4.5.2 Substitution Context

You may select to optimize only contracts that are paying margin on that day by selecting *Pay Margin*. By selecting *Pay/Receive Margin*, contracts that have no call or are receiving margin will be optimized as well as contracts that are paying margin.
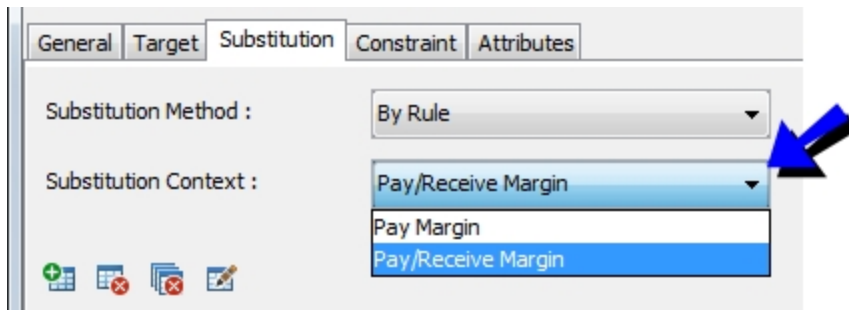
4.6 Constraints

This panel allows you to define whether the optimizer should respect certain constraints when calculating the optimal solution.

» Constraints may be global. Global means that the constraint applies globally to all contracts that are optimized. For example, respecting the dividends is a global constraint, but concentration is a contract specific constraint. Whether a constraint is global or not is pre-determined. This is not a selectable field.

» The selection of Constraints varies depending on the Optimization Type that is chosen.

» Master contract level constraints are considered when optimizing at Exposure Group level.

(i) **[NOTE: There is one constraint available for the *AllocationDistribution* Optimization Type. This constraint is described in the Buy Side Fund Distribution documentation]**
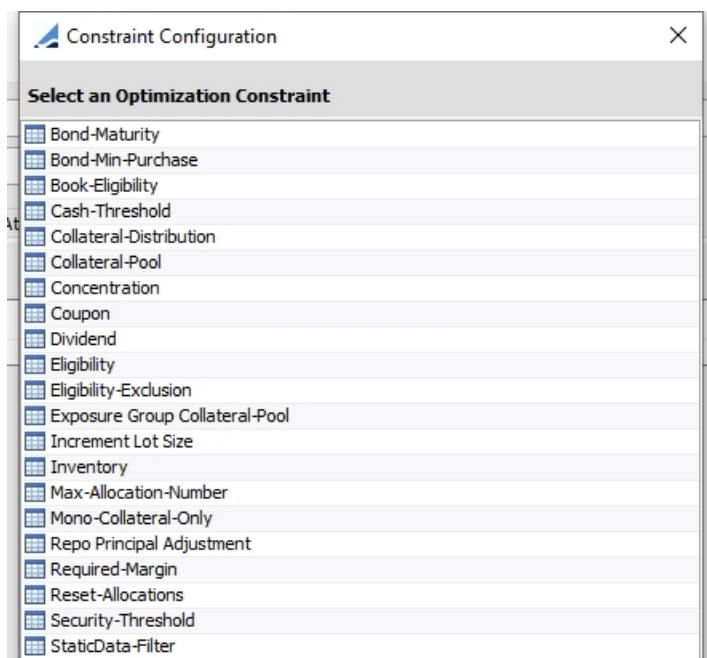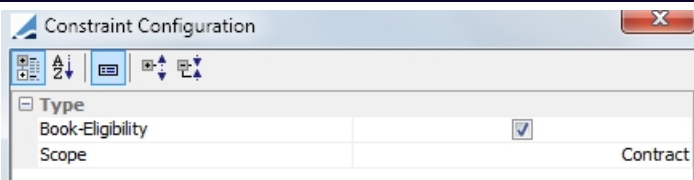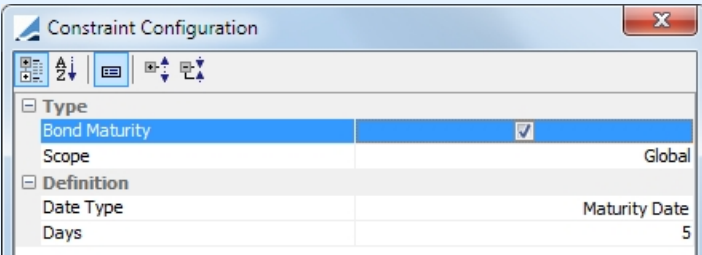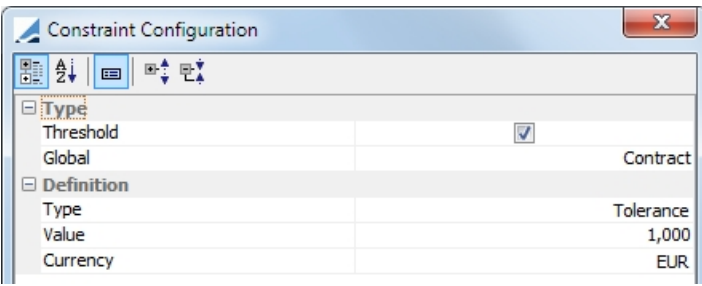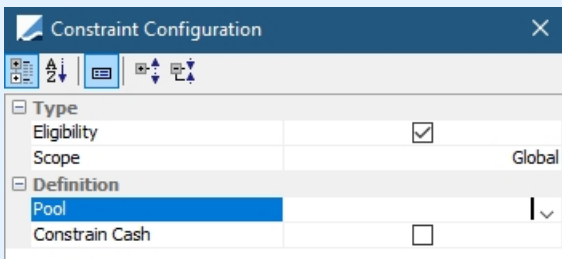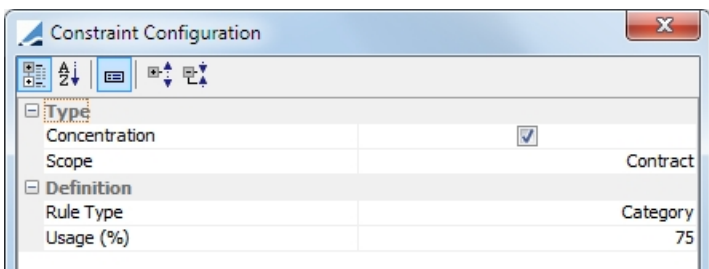
Constraint options for Bilateral Optimization
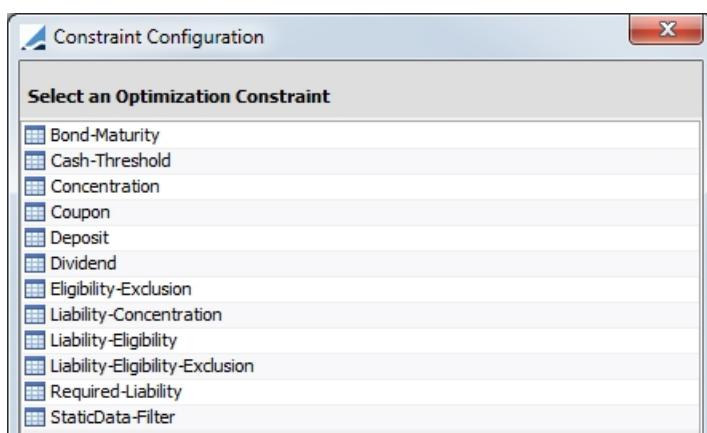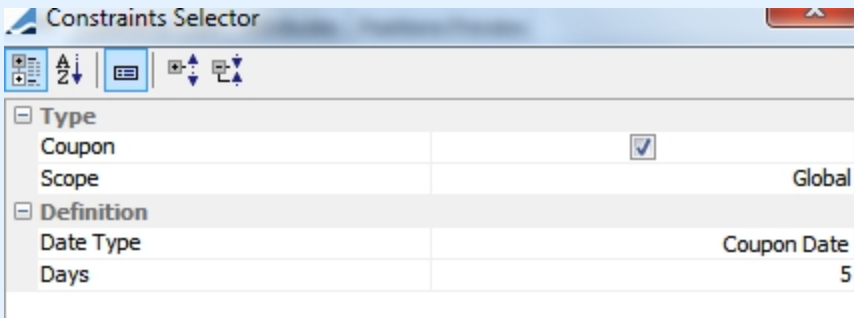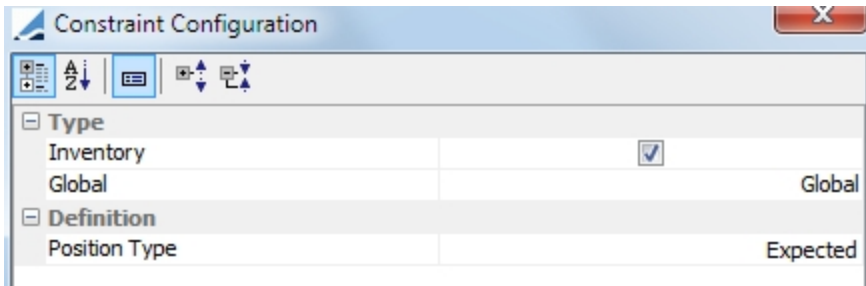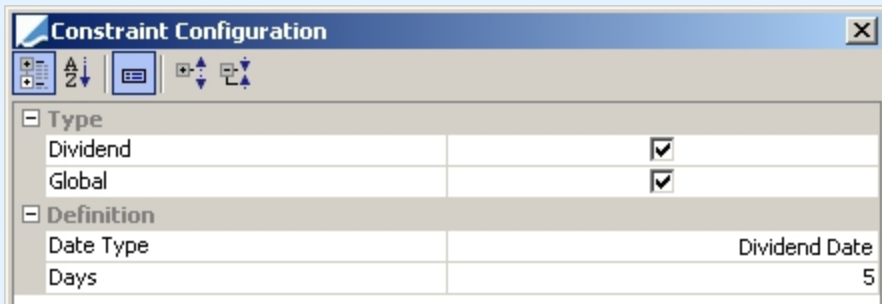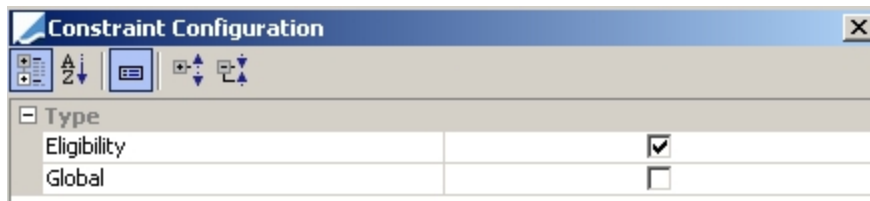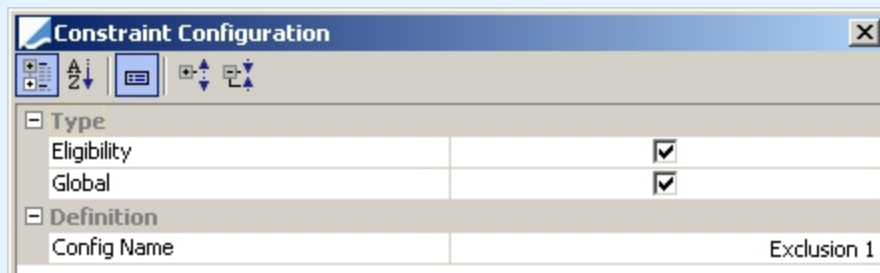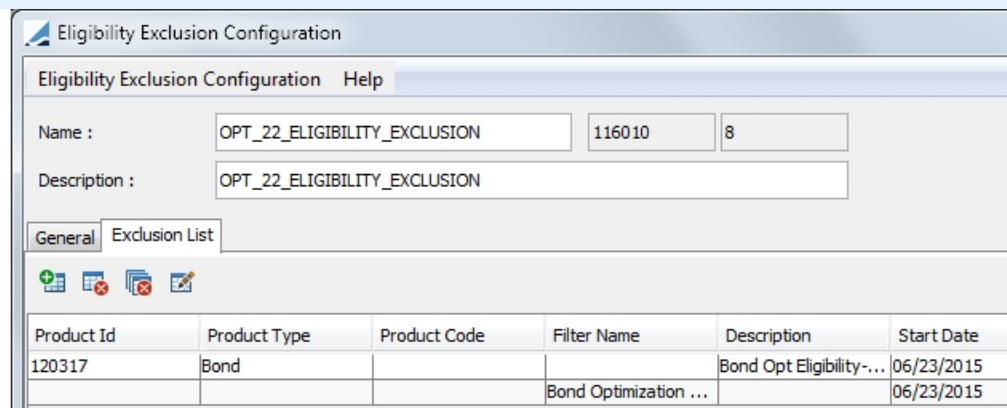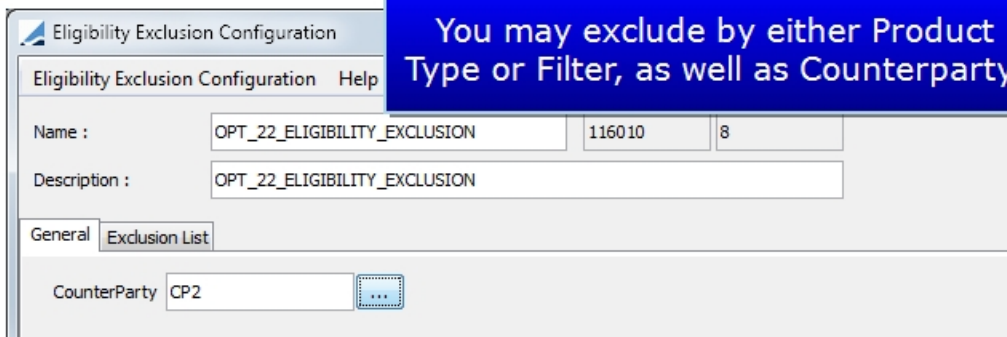
Constraint options for Cover Distribution Optimization
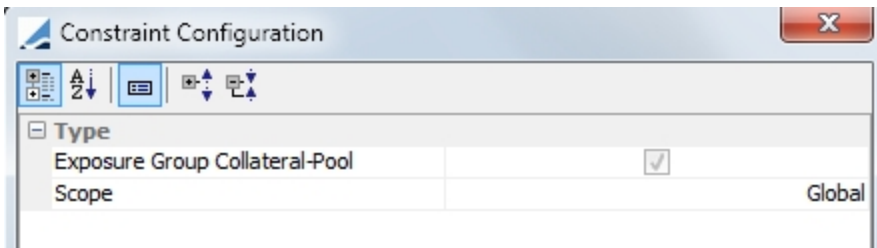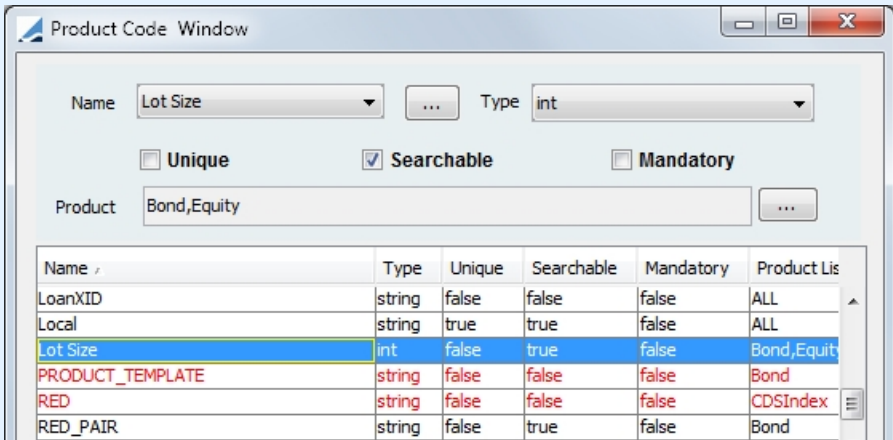
Constraint	Description
Book-Eligibility	This constraint respects the eligible books on the contract. With this constraint, allocations are generated by book.
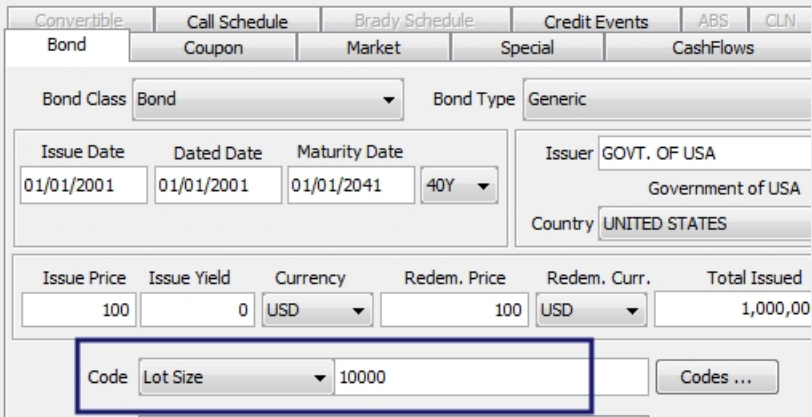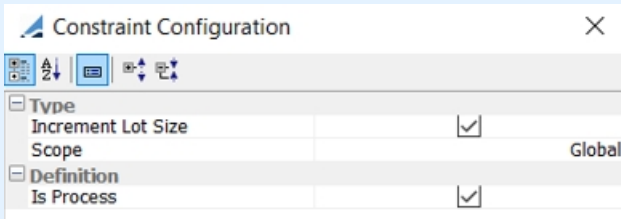
Constraint	Description
	 This is a contract specific constraint, which is indicated by the entry in the Scope field.
Bond-Maturity	Using this constraint, you may exclude a security if a bond maturity date is occurring in the next *n* days. **Scope:** This is a Global constraint which means it applies to any contract. **Date Type:** Maturity Date is the only option **Days:** Enter the number of days for the exclusion. These days are business days, using the security holiday calendar.
Cash Threshold	To minimize the number of trades suggested by the optimizer, you may define a cash threshold. Because cash is the adjustment variable, any trade below the cash threshold will no be created and will result in a remaining margin. For example, if there is a cash threshold of 1,000 EUR and the optimizer found an optimal solution with a cash trade of 750 EUR, as it is less than 1,000 EUR, no cash trade will be created and there will be a remaining margin of 750 EUR. **Type:** • Never - The optimizer will never suggest cash in its optimal solution • Percentage - Percentage of the Global Required Margin under which no cash trade should be created
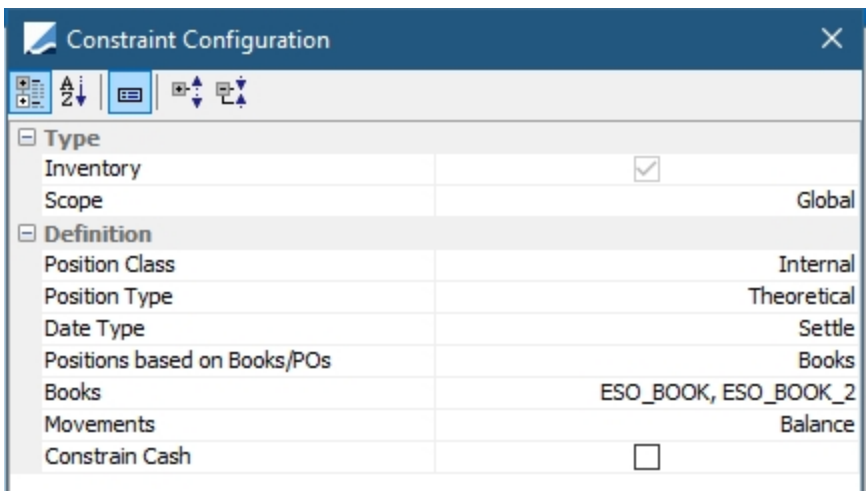
Constraint	Description
	• Tolerance - Refers to the tolerance defined in the margin call contract
	• Value - Value under which no cash trade should be created
	Value: Value of the threshold
	Currency: Currency of the threshold
Collateral-Pool	Allocate securities that are in the specified Collateral Pool. During the optimization process, the collateral positions will be generated based on the sources listed in this definition.
Concentration	Securities allocated only if they fit the selected concentration rules. **Scope:** This constraint is defined at the contract level **Rule Type:** Select concentration rule type ISSUE, ISSUER and /or CATEGORY **Usage (%):** • Determines whether the optimizer should respect the concentration rules as they are defined • Or, if the optimizer can allocate more than what is defined in the concentration rule. For example, if the Usage(%) is set to 110%, the optimizer is able to allocate 10% over what is defined in the concentration rule. • Or, if the optimizer should allocate less than what is defined in the concentration rule. For example, if the Usage (%) is set to 90%, the optimizer will only be able to allocate up to 90% of what is defined in the concentration rules.
Coupon	Excludes a security if a coupon payment is to occur in the following x number of days.
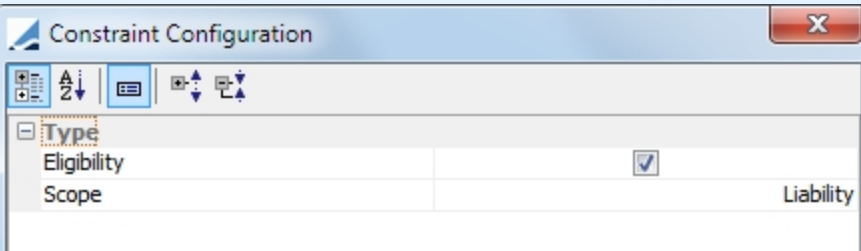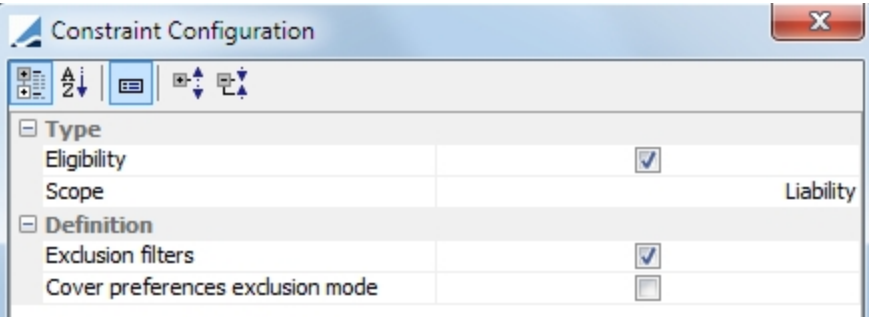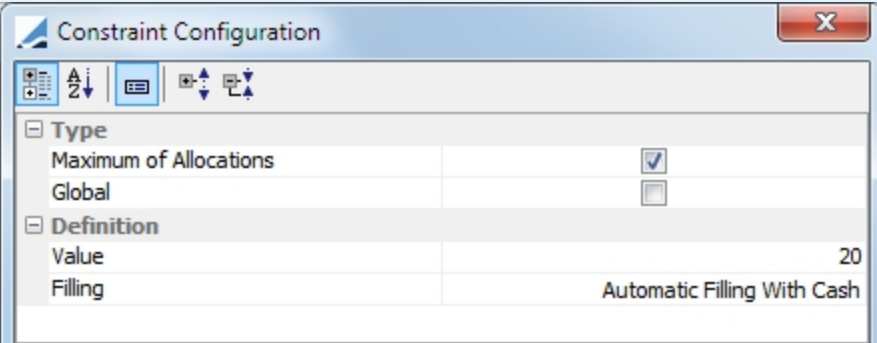
Constraint	Description
	Date Type: Coupon Date or Record Date **Days:** If a coupon payment is to occur under the designated number of days, the security is not used by the optimizer. These days are business days, using the security holiday calendar.
Deposit	Indicates that you want to use a deposit account as a collateral pool. (Cover Distribution only) ⓘ **Mandatory constraint for cover distribution** **Position Type:** Expected should be used. This is the deposit positions based on the settle date. A deposit is not counted towards the deposit amount until the deposit is settled in the account.
Dividend	Excludes a security if a dividend payment is to occur in the following x number of days. **Date Type:** Dividend Date or Record Date **Days:** If a dividend payment is to occur under the designated number of days, the security is not used by the optimizer. These days are business days, using the security holiday calendar.
Eligibility	Allocate only securities that are eligible per the contract definition. (Allocation only)
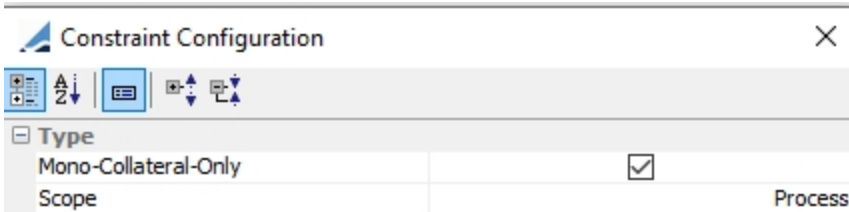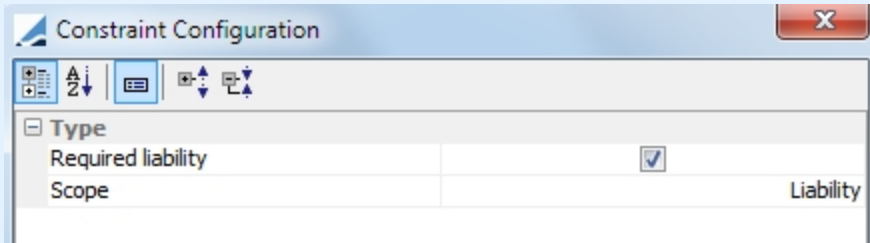
Constraint	Description
Eligibility Exclusion	Allocate securities only if they are not part of the temporary exclusion configuration. **Config Name:** Any configuration defined in the Eligibility Exclusion Configuration window. To access this window, in the Collateral Configuration Optimization window, select **Util > Eligibility Exclusion**.
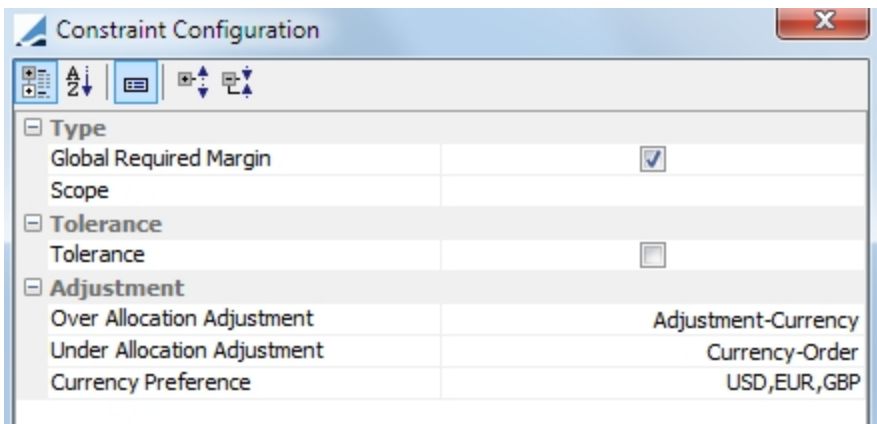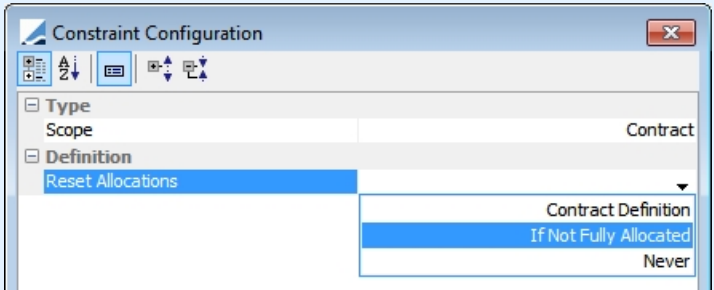
Constraint	Description
Exposure Group Collateral-Pool	Allocate inventory from the underlying Collateral Pools. ![Constraint Configuration window showing Type: Exposure Group Collateral-Pool checked, Scope Global]
Increment Lot Size	Used to designate and respect nominal lot size in the Optimizer. To use this constraint, define a product code to be used in the *Collateral.IncrementLotSize* domain value. Name: Collateral.IncrementLotSize Value: Lot Size Comment: Then, define the product code in the Product Code window to be available in Bond and Equity product definition windows. ![Product Code Window showing Name: Lot Size, Type: int, Searchable checked, Product: Bond,Equity with table listing LoanXID, Local, Lot Size, PRODUCT_TEMPLATE, RED, RED_PAIR] Designate the increment value in the product definition window. For example, setting it to 1000 means that allocations of the security must be in nominal quantities of 10,000.
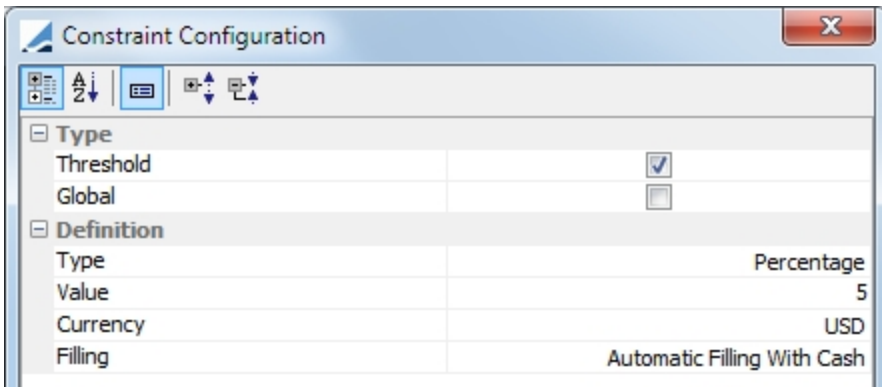
Constraint	Description
	Finally, select the constraint on the optimizer. When Is Process is checked, the lot size is applied during the allocation process to the collateral candidates: - If solver type is "Under Collateralized", round down the nominal and notify the optimization remaining Mrg. - If solver type is "Over Collateralized" and a round up is not leading to short position or a concentration limit, then round up and notify the optimization remaining Mrg. - If solver type is "Over Collateralized" and a round up is leading to short position or a concentration limit, then round down and notify the optimization remaining Mrg. If Is Process is not checked, the lot size is applied the end of the process and may result in under allocation of collateral.
Inventory	Allocate securities that are available on the specified inventory position on the value date defined in the collateral manager (Allocation only)
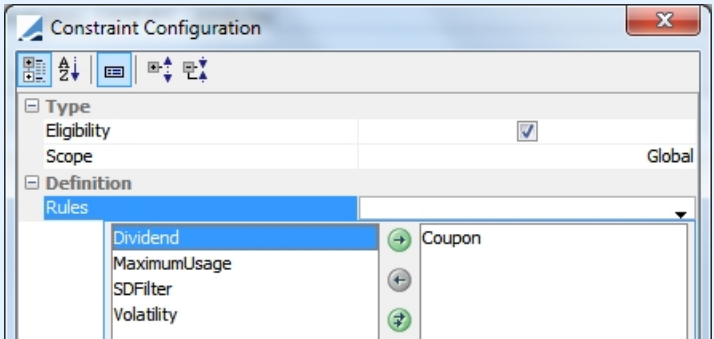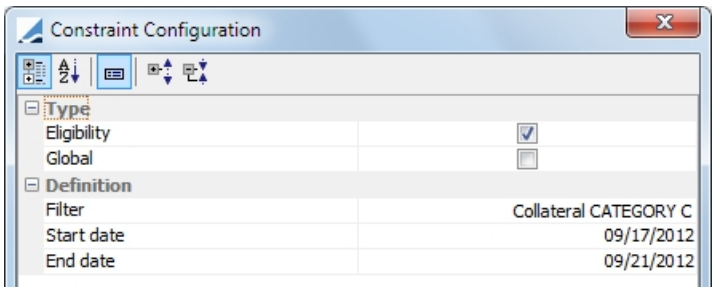
Constraint	Description
	Position Class: Internal, External, Client or Margin_Call **Position Type:** Any position type defined in the Inventory Position such as, Actual, Not Settled, Theoretical, Expected, Forecast, etc... **Date Type:** Available, Booking, Settle or Trade Date **Positions based on Books/POs:** If *Books* is chosen, the Books field is visible. The positions are loaded based on the values selected in the field. If *Processing Org* is chosen, the Processing Org field is visible. The positions are loaded based on the selected PO's associated books. **Client:** Available when Position Type is *Client*. The list of available clients to choose from in the Client field is populated from legal entities with the role of "Client" and/or "Counterpaty". **Account:** Available when Position Type is *Client*. The list of available Accounts depends on the Client selected. The list contains all accounts with the legal entity of the chosen Client. **Books:** Select books considered for this constraint rule. **Movements:** Any balance or movement type defined in the Inventory Position. Multiple movements may be chosen. If multiple movements are defined, they will be part of the loading criteria when the solver is building the collateral pool. The selected movements must not overlap each other as there is no check in place to prevent such a setup. **Constrain Cash:** Select to include cash as a constraint.
Liability-Eligibility	Indicates that you must match the eligibility that you define at the clearing service level. (Cover Distribution only)

Constraint	Description
Liability-Eligibility-Exclusion	Indicates that Eligibility Exclusions established in the contract are to be used. (Cover Distribution only)

Selecting the *Exclusion filters* check box, means that the specific exclusions defined on the lower part of the Eligibility Exclusions panel will be respected.

Selecting the *Cover preferences exclusion mode* checkbox, means that the choice made in the "Exclude Assets not defined as Cover Preferences" flag on the Eligibility Exclusions panel will be respected.

Selecting both checkboxes respects both at the same time.

 |
| Max Allocation Number | Limits the number of allocations per contract to the value specified in the constraint. (Allocation only)

Global: This is a global constraint

Value: Maximum number of allocations permitted

Filling: Filling method, Automatic Filling With Cash or No Filling |

Constraint	Description
	NOTE: With the Simplex solver, this constraint is a post-processing constraint. As a result, if the number of allocations suggested by the solver is above the maximum allowed, the solver replaces these additional allocations with cash. If the contract does not allow for a cash margin, the contract will not be fully allocated and this will result in the contract having a remaining margin.
Mono-Collateral-Only	For a given exposure, this constraint filters out any collateral asset with an available value lower than the exposure amount. This ensures that exposures will either be covered, if possible, by a single collateral asset or remain uncovered. (Used for Allocation Rule Solver) This constraint is applied on an exposure by exposure basis an depends on each exposure amount.
Required-Liability	The allocation amount must be equal to the liability (Cover Distribution only) ⓘ **Mandatory constraint for cover distribution**
Required Margin	ⓘ **Mandatory constraint** Allocated amount must be equal to the Global Required Margin (Allocation only)

Constraint	Description

Tolerance: Select if the optimizer can use the tolerance as defined in the margin call contract

Over Allocation Adjustment: Specify how to adjust when there is an over allocation

Under Allocation Adjustment: Specify how to adjust when there is an under allocation

Options for Over Allocation Adjustment and Under Allocation Adjustment are:

  – *Adjustment-Currency*: adjust with the auto adjustment currency which is defined in the margin call contract.

  – *Base-Currency*: Adjust with the base currency defined in the margin call contract

  – *Currency-Order*: Adjust using the currency preference which is the preferred eligible currency

  – *None* – No adjustment is done, and there will be either remaining or excess collateral. (This setting is not recommended.)

Currency Preference: Define the currency preferences for the remaining allocation when Currency-Order is selected.

NOTE: The remaining amount is not able to be adjusted with a security. It may only be adjusted with cash. |
| Reset Allocations | Affects contracts that accept SECURITY only (because CASH is considered to be unlimited). This constraint can be set at the contract level.

 |

Constraint	Description
	Contract Definition: The optimizer refers to what has been defined on each contract **If Not Fully Allocated:** The optimizer resets allocations (does not suggest any allocations) if the contract is not fully allocated due to insufficient inventory (ie. there is an remaining margin) **Never:** The optimizer will be allowed to do partial allocations of contracts NOTE: If there is remaining margin on a SECURITY only contract due to ROUNDING and not due to insufficient inventory, the allocations will not be reset.
Security-Threshold	Unlike the cash-threshold, the security-threshold does not lead to a remaining margin, since the security is not an adjustment variable. (Allocation only) If the optimizer suggests an allocation with a security for an amount under the security threshold, the corresponding trade will not be suggested and the optimizer will move to find another security. The security threshold can modify the typology of the allocation but will not create a remaining margin. **Type:** • Percentage - percentage of the Global Required Margin under which the security trade should be created. • Value - value under which the security trade should be created **Value:** Value of either the percentage or value in the Type field **Currency:** Currency for the constraint **Filling:** Filling method, Automatic Filling With Cash or No Filling
Source	Allocate securities based on collateral source. This rule can only be used if the optimization uses a collateral pool constraint.

Constraint	Description
Static Data Filter	Allocate securities only if they do not match the static data filter selected. **Filter:** Select any static data filter available. **Start Date:** Excludes collateral that matches a Static Data Filter after the Start Date. The start date is compared against the value date of the margin call entry. **End Date:** Excludes collateral that matches a Static Data Filter before the End Date. The end date is compared against the value date of the margin call entry.

NOTE: The Attributes tab is currently not used.

4.7 Optimization Process

The optimization process can be run manually from various points in Calypso.

» Optimization is based on the Remaining Margin.

Remaining Margin = Global Required Margin – Booked Allocation Margin – Pending Allocation Margin where

Booked Allocation Margin = Daily Cash + Security Margin and

Pending Allocation Margin = Cash + Security Margin

» The Remaining Margin will be 0 if there is a margin call and the Global Required Margin if there is no call.

» To designate and respect nominal lot size in the Optimizer, use the Increment Lot Size Constraint.

4.7.1 Manual Optimization

In the Collateral Manager, click the Optimize button.
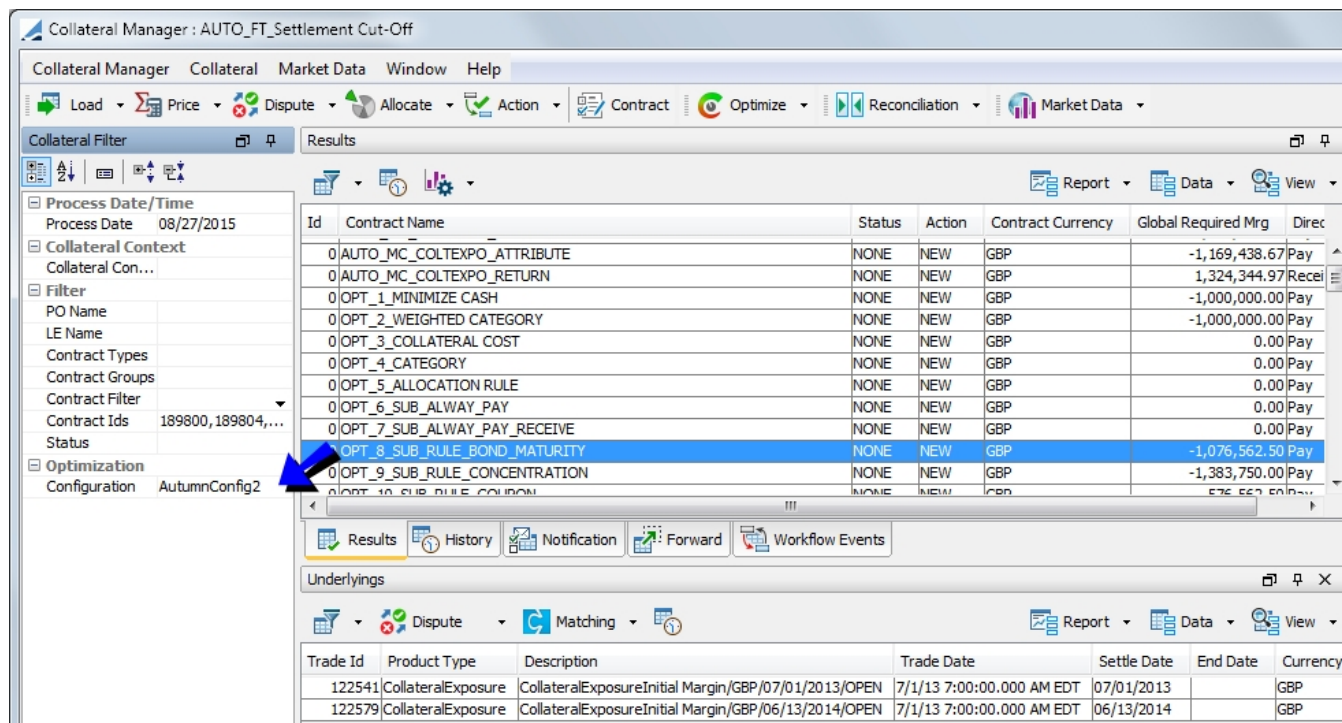
To optimize in this manner, you must set the Optimizer that you want to use in the Margin Call Filter section of the window. Once this is set, you can run the optimization through the **Optimize** button.

You can choose to optimize only the contracts selected (Optimize Selected) or all of the contracts loaded (Optimize All). By default, the optimization is run only on the contracts selected. From this button, you are also able to select Configuration, which will open the Collateral Optimization Configuration window.

4.7.2 Optimization from Collateral Allocation Window

To display the Collateral Allocation window, click the **Allocate** button, or select **Margin Call > Allocate** from the menu.

Select the optimizer that you would like to use from the drop-down box and then click **Optimize** . If the optimizer is run from this window, it is run at the contract level.

For contracts utilizing Collateral Pools, the Collateral Pool panel allows you to sort and display positions based on the pools.

Positive, Negative and null Exposure Group positions can be filtered for display.
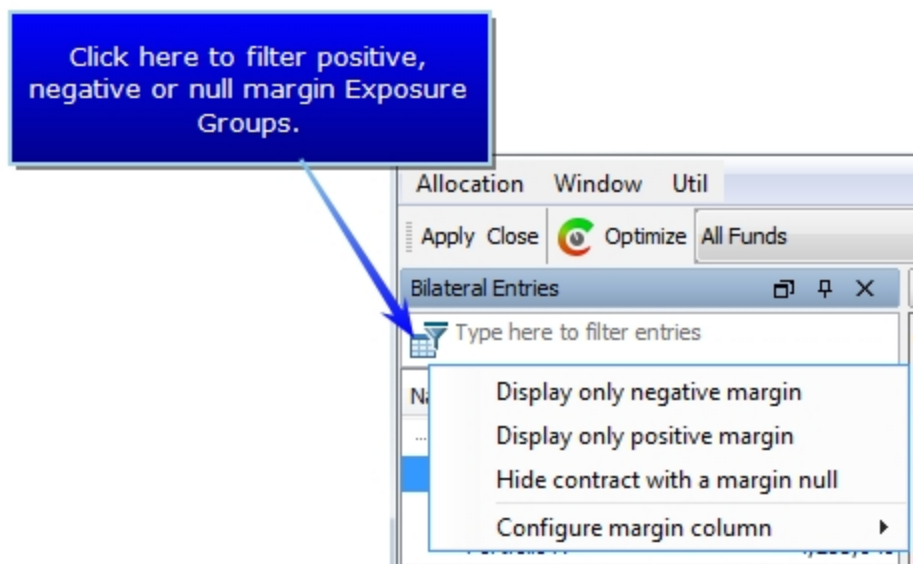
It is possible to hide the Filter using a menu option available in the **Window > Show View** menu. This view is also part of what is saved when a Template is created.

> ⓘ **[NOTE: The Collateral Allocation search depends on product types added to the**
> ***ProductSelectorTypes.Repo* and *bondType* domains. If all of the expected bonds are not displaying in the**
> **search, make sure that the appropriate bond type is in each of these domains]**

4.7.3 Optimization via Scheduled Task

You may run the optimization as part of an End of Day process using a scheduled task. For bilateral collateral management, see COLLATERAL_MANAGEMENT Scheduled Task. For cover distribution, see COVER_DISTRIBUTION Scheduled Task.

4.7.4 Optimization via Engine Server

You can elect to run the Optimizer in the Engine Server by setting the following environment properties:

UseCollateralOptimizationService = True to enable the feature - There is a "Optimization Events" tab on the Collateral Manager where you can see the status of the optimization. When it completes, you will get a popup saying optimization completed.

Collateral Context	Collateral Exposure Context Name	Optimization Configuration	Collateral Ids	ProcessDate	Optimization Id	Status
default	Default	APL-5464	[254800]	19/12/2023	a8b26289-3710-4d54-913c-327c525d928b	Completed
default	Default	APL-5464	[254800]	19/12/2023	12cd1936-162b-4528-b69c-eb4ccb0f0348	
default	Default	APL-5464	[254800]	19/12/2023	659ea23c-9299-4579-9b5a-04a3a9c2bb35	Completed

AutoSaveServerSideOptimization = True to save the optimization results to the database by automatically applying the action associated with "Allocate" (in Collateral Context > Workflow panel) to the margin call entry when the optimizer completes.

4.8 Lock Process

It is possible to lock a collateral position suggested by the optimizer. If you are not satisfied with the suggested allocation, you can add new collateral and input the value, or change the value of one of the collateral.

The optimizer will not consider the previously locked allocations as used Inventory. These allocations are excluded from the Optimization process.

Initial Optimization Run

Adding a manual allocation and locking the column:

After the optimizer is rerun, the solution is now:

4.9 Optimization Analysis

In order to understand or analyze an optimization without actually performing an allocation, the Optimization Analysis functionality is available. Using the Optimization Analysis, you are able to load, save update and delete an optimization. Optimization Analysis can be run from Collateral Manager via the Optimize button or from the COLLATERAL_MANAGEMENT scheduled task using the Optimization attribute.

4.9.1 Running an Optimization Analysis
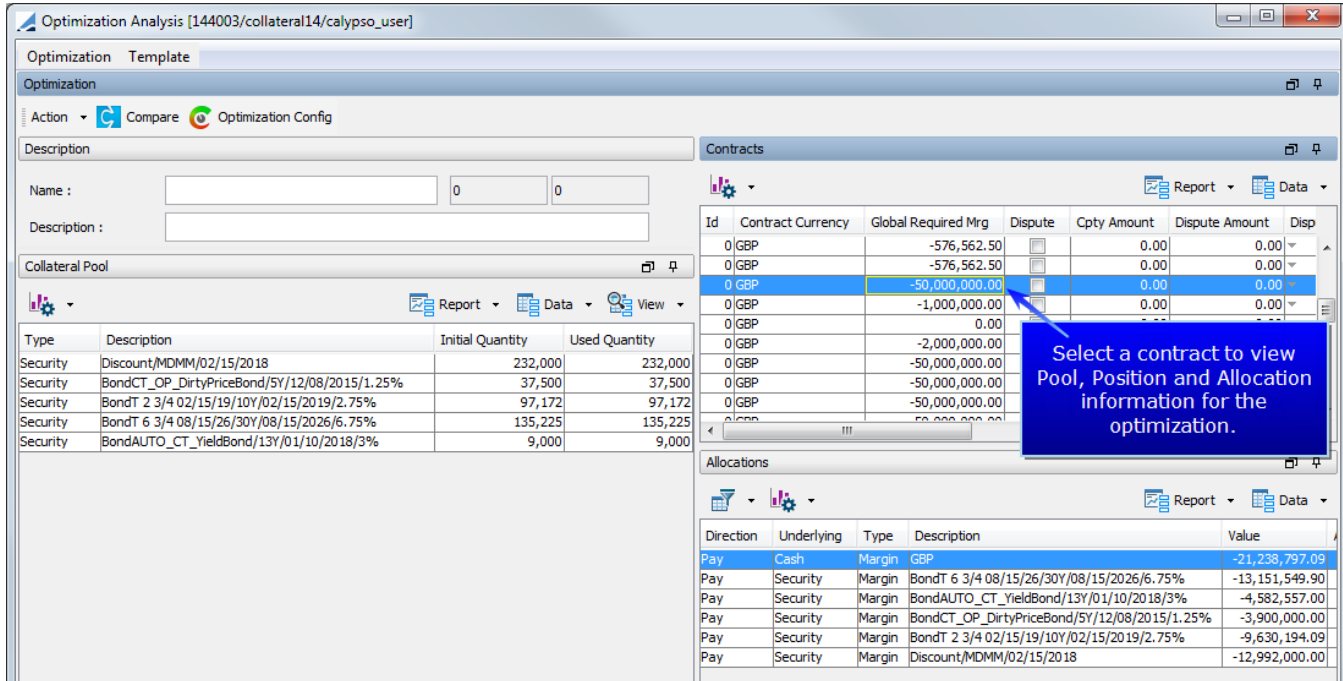
To run an Optimization Analysis, Select **Optimize Selected** or **Optimize All** from the Optimize drop-down button.
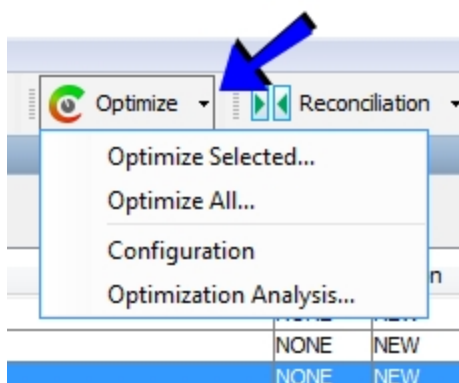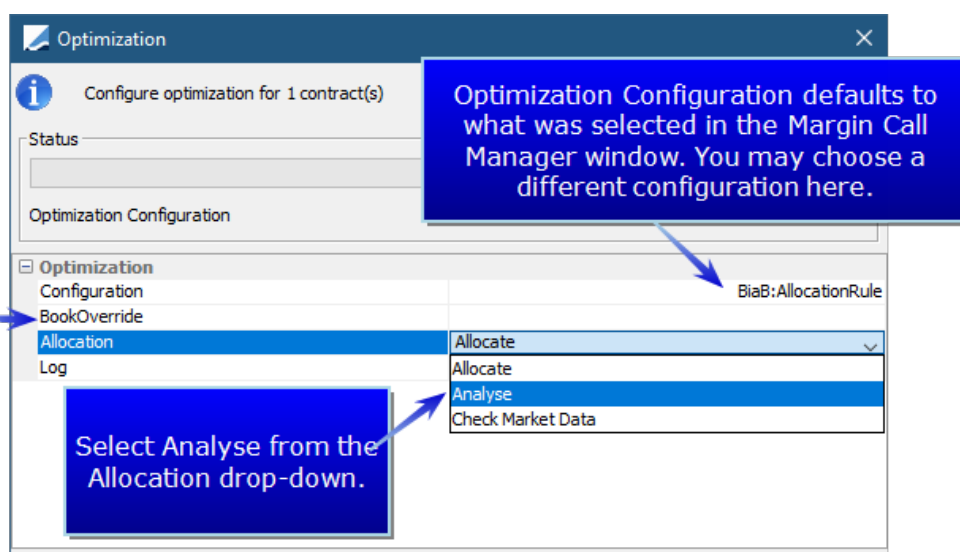
After the optimization is completed, the Optimization Analysis window is displayed.

The Contracts section contains regrouped information on the contracts, which allows for navigation between them.

The five panels in the windows are:

- **Description:** This area contains the name, Id, version and description of the optimization after it has been saved.
- **Contracts:** These area the contracts contained in the optimization. Select a contract to display details in other areas of the window.
- **Allocations:** Allocation information for the selected contract entry
- **Positions:** Position information (allocations from previous days) for the selected contract
- **Collateral Pool:** This area displays the collateral pool for each contract entry. This pool contains the list of each security accepted by the contract with the initial quantity and the quantity used by the optimizer to make allocations

4.9.2 Saving and Loading an Optimization

» You may save an optimization by selecting Save from the Action button drop-down.
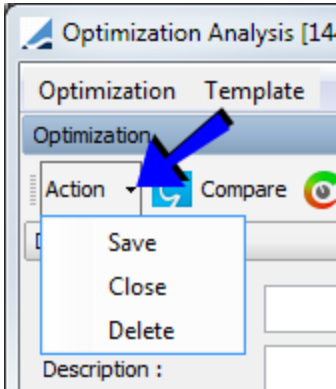
This action only saves the active optimization. If you wish to save all of the optimizations that are open, select **Optimization > Save All**.
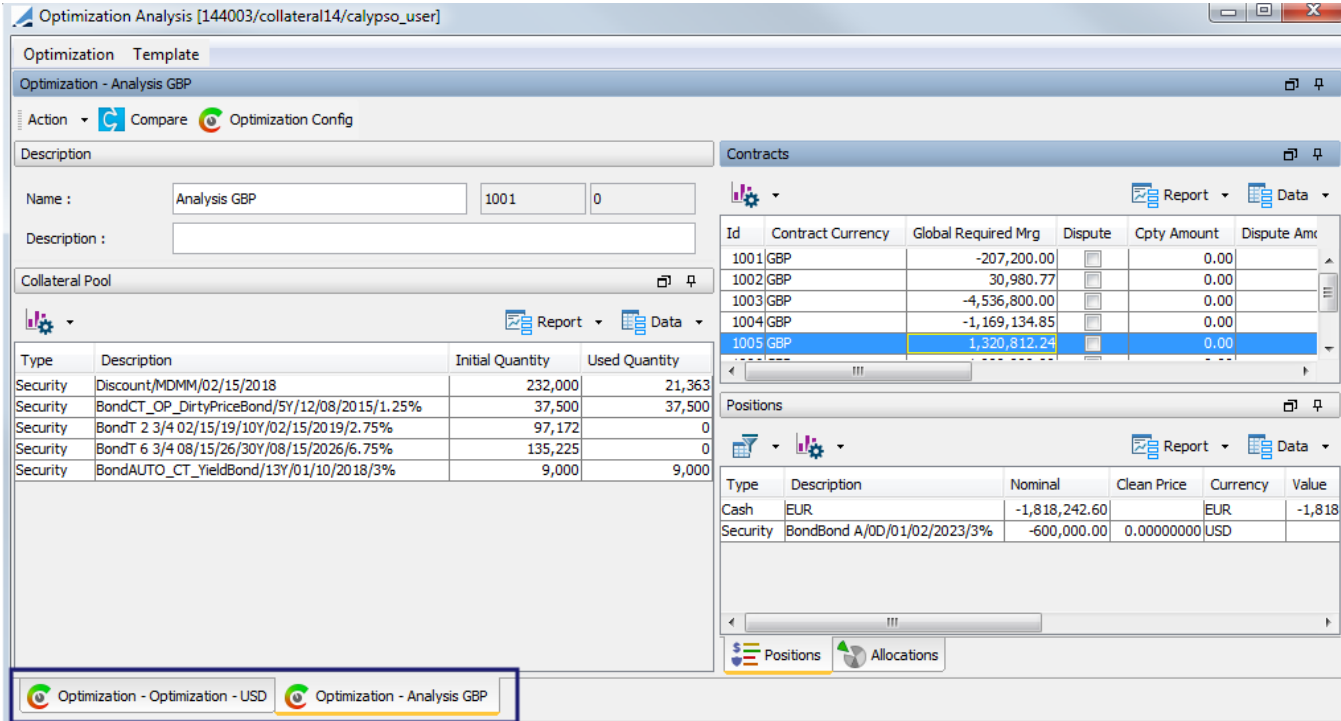
Action > Delete deletes the selected optimization, while **Action > Close** closes the selected optimization.

» To load a saved optimization, select Load from the Optimization menu.
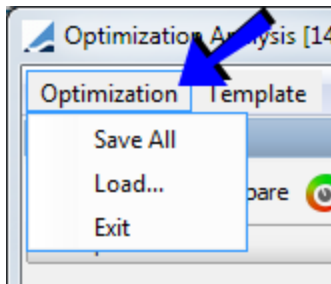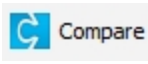
» From the Collateral Manager window, choose **Optimize > Optimization Analysis** to display the Optimization Analysis window without executing an optimization if you wish to load an already saved optimization.

» You may save, load and delete templates as well through the **Template** menu option. A template saves the way the window is displayed, such as the report templates and the layout of the window.
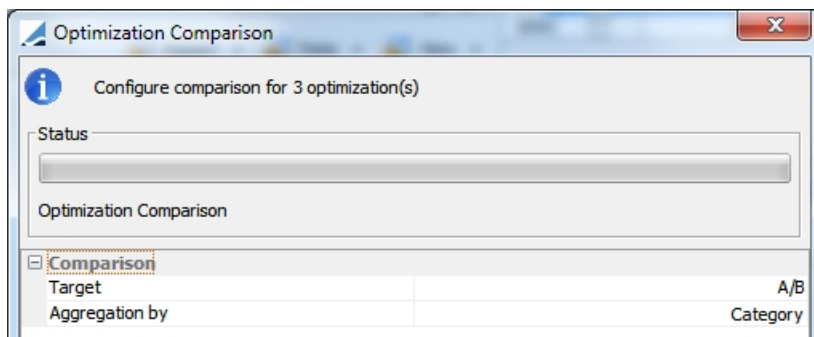
If several optimizations are open at the same time, they are displayed in different tabs in the window.

4.9.3 Optimization Comparison

The Collateral optimization framework provides multiple solver implementations (Default, Allocation-Rule, Simplex) with different target/goal definitions. Optimizations cannot be compared without a common measure of comparison. For example, the Simplex solver requires a weighted per asset category but the default solver uses a sorted list category. To achieve the comparison, a "comparison target" is defined, which needs to be defined as a weighted category.

To run a comparison on all of the open optimizations, click the button. A comparison configuration window is displayed containing two options, Target and Aggregation by.

- **Target:** Choose the weighted target configuration which will be used as a reference to make the comparison

- **Aggregation by:** This allows you to define the optimization category by which the securities will be aggregated. By default, categories aggregate by static data filter names.

After the comparison is complete, the comparison will be displayed in the bottom part of the window.
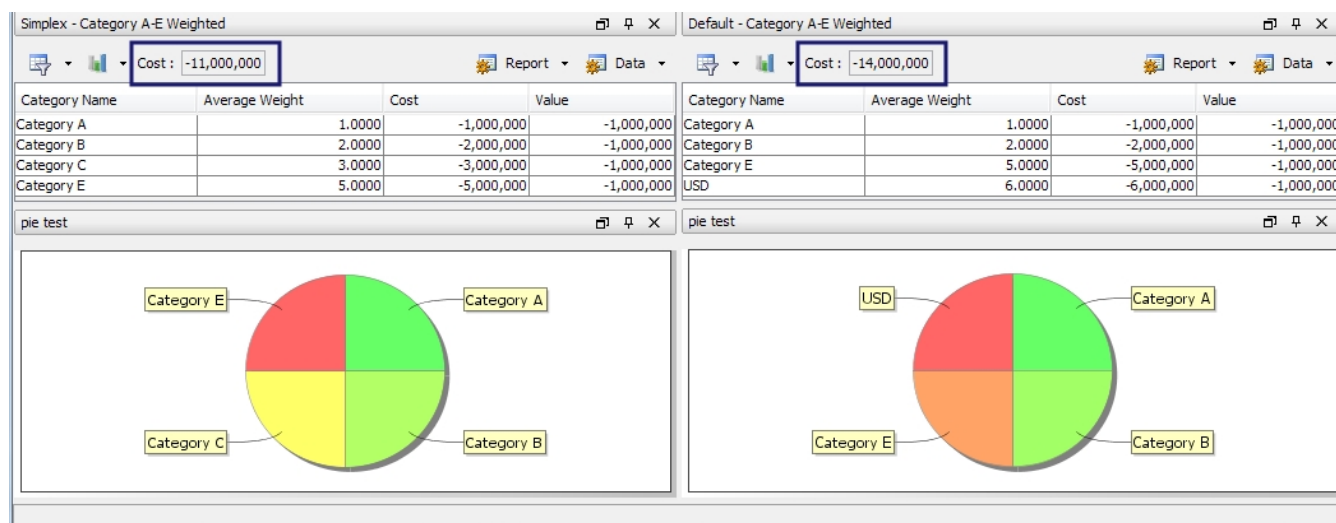
On the top of the report is a present cost, which represents the total cost of the optimization. This cost gives a quick comparison of the optimizations in the same base optimization target defined during the comparison setup. In this example, you can see that the cost of the Simplex - Category A-E Weighted optimization is less than the cost of the Default - Category A-E Weighted optimization. This comparison area also provides the options of displaying the

allocations in the optimizations visually via charts and graphs. Click and select Create. From this menu, you may select several different charts. After the chart is created, select Add from the chart menu to add it to the Optimization Analysis window.
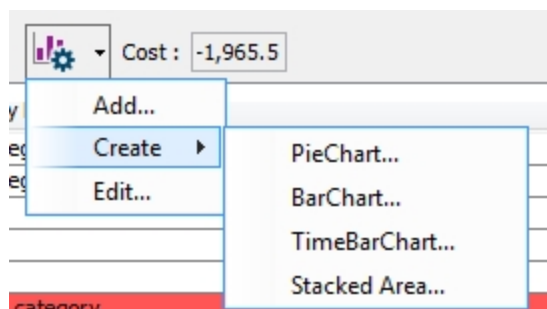
4.9.4 Creating an Optimization Analysis Custom Attribute

Sometimes, the number of categories used in the comparison may be too high to obtain a good high-level view. To obtain a better view, an upper-aggregation level may be defined as an Optimization Category custom attribute.

Custom attributes are defined under the domain value *OptimizationCategory*.
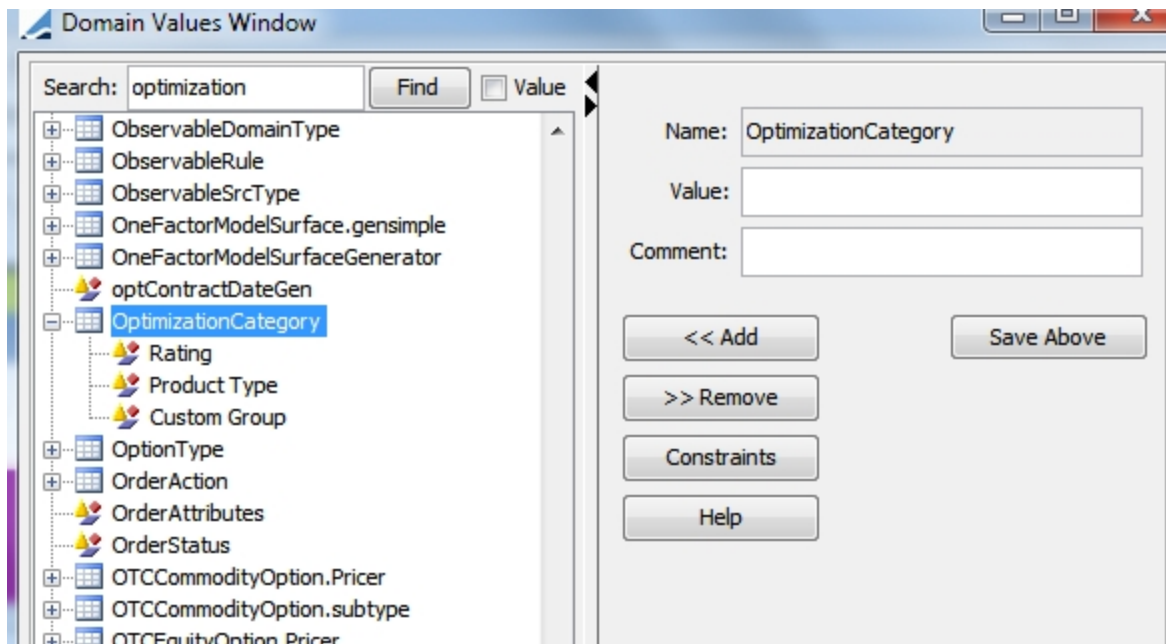
Once a custom field is defined in the domain value, it will be automatically added to the Target Configuration window.

You are also able to add the attributes directly through the Target Configuration window by clicking the .
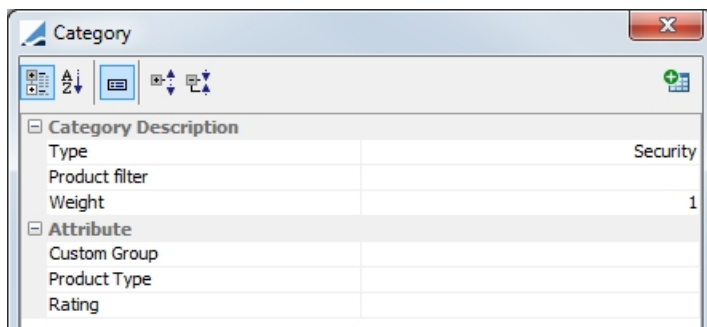
The target type should be Weighted Category. Below is an example of a completed target configuration using the custom attributes.

Target Configuration   Help

Name :	Analysis-Category	107035	8

Description :	Analysis-Category Configuration

Definition

Target Type :   Category

Categories

Type	Name	Custom Group	Product Type	Rating
Security	SDF_EL66	Agency Bond		BBB
Security	SDF_EL67	Agency Bond		BBB
Security	SDF_EL68	Agency Bond		BBB
Security	SDF_EL69	Agency Bond		A
Security	SDF_EL70	Agency Bond		A
Security	SDF_EL71	Agency Bond		A
Security	SDF_EL72	Agency Bond		A
Security	SDF_EL73	Agency Bond		A

Now, using this configuration, in the Optimization Comparison, you could choose to aggregate by Rating in the Aggregation by field to display comparison that is easier to interpret.

OptimizationTest – Analysis-Weighted-Category

Cost : -26,739,953,825,905.4   Report ▾ Data ▾

Category Name	Cost ▽
CCC	-1,047,809,310,950.64
DDD	-1,570,912,129,502.33
B	-1,577,082,749,759.25
CC	-1,644,090,693,083.28
A	-1,704,505,902,146.14
BBB	-2,165,916,051,893.76
BB	-3,159,066,631,490.85
AAA	-4,406,887,641,298.82
C	-4,641,460,854,458.18
AA	-4,822,221,861,322.11

OptiWheited – Analysis-Weighted-Category

Cost : -3,885,432,229,749.57   Report ▾

Category Name	Cost ↗
DDD	-3,875,268,706,270.77
C	-10,163,523,478.7947
A	0
AA	0
AAA	0
B	0
BB	0
BBB	0
CC	0
CCC	0

5. ECMS - European Collateral Management System

The European Central Bank (ECB) has created a single European Collateral Management System (ECMS) to manage the assets used as collateral for Eurosystem credit operations for all of the Eruozone. Calypso supports the following ECMS requirements:

- Ability to identify ECMS margin call contracts
- Management of Mobilisation (adding collateral) and Demobilisation (removing collateral)
- Provided an Available Credit Line calculation, including maximum credit line, with specific trade attributes

You can use ECMS as a central bank or as a central bank member.

5.1 Central Bank Functions

As a central bank, you can compute, aggregate and notify members of their credit line using the ECMS engine or using the COLLATERAL_CREDIT_LINE_CALCULATOR scheduled task.

5.1.1 ECMS Engine

The ECMS engine is configured automatically when Execute SQL is run. It subscribes to PSEventCreditLineCalc, PSEventMarginCallEntry and PSEventTransfer.

The engine allows a central bank to compute the aggregated credit line of its members and publish an event per member for message / notification purposes based on mobilisation transfer events.

Engine Parameter

By default, back dated transfers are not processed by the ECMS engine.

You can set engine parameter ALLOW_BACKDATED_PROCESSING = true to process back dated transfers in a test environment.

ⓘ **[NOTE: Setting ALLOW_BACKDATED_PROCESSING = true in a production environment is not supported]**

Domain Values

There are two domain values required for the ECMS Engine.

Domain "ECMSEngineEventType"

Configured values should be CONFIRMED_SEC_DELIVERY and CONFIRMED_SEC_RECEIPT
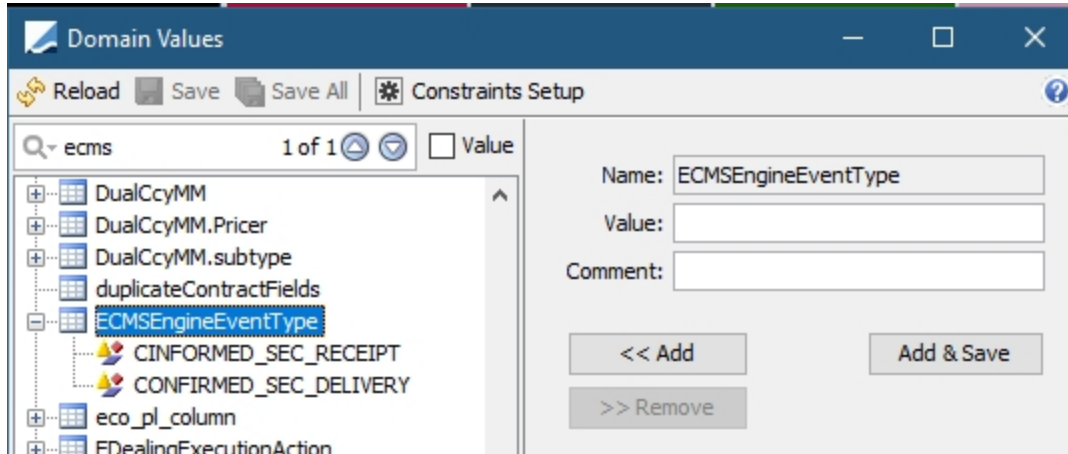
Domain "tradeKeyword"

The value CREDIT_LINE_CALC_DELTA should be added to the tradeKeyword domain.
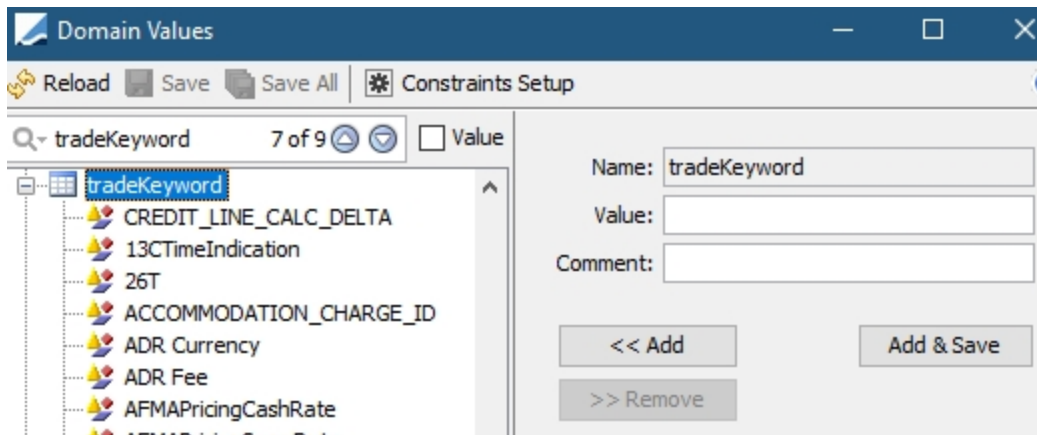
5.1.2 Scheduled Task COLLATERAL_CREDIT_LINE_CALCULATOR

Execute the COLLATERAL_CREDIT_LINE_CALCULATOR scheduled task to generate the camt.998 messages.

This scheduled task allows a central bank to compute the aggregated credit line of its members and to publish CollateralCreditLineCalc events that allow generating camt.998 messages. Events are published only if all of the margin call entries for a given member are Fully Priced and if the FX rate is present in the system.

Setup Requirements

Domain "eventType"

Value = CollateralCreditLineCalc

This type of event is generated by the scheduled task COLLATERAL_CREDIT_LINE_CALCULATOR.

The message engine needs to subscribe to PSEventCreditLineCalc events in order to generate camt.998 messages.

Domain "messageType"

Value = CollateralCreditLine

Domain "MX.Templates"

Value = camt.998.001.T2

Domain "MX.T2"

Value = SAA.ReceiverCLM

Comment = <DN receiver full name>

Value = ReceiverDNCLM

Comment = <DN receiver>

▶ Please refer to Calypo MX Payment Messages for complete details on the domain "MX.T2".

Domain "MappingOutgoingWithContact"

Value = CollateralCreditLine

Comment = <contact type to be used for populating SWIFT BIC of counterparty account owner (tag AcctOwnr)>

Message Setup

Margin Call Contract

Additional Info - CREDIT_LINE_CALC = True

The scheduled task only processes margin call contracts where CREDIT_LINE_CALC = True.

CollateralCreditLine Message Workflow

Orig Status	Action	Resulting Status	Create Task	Use STP	Same User	Rules
VERIFIED	TO_SEND	TO_BE_SENT	Always	True	True	
VERIFIED	MAN_TO_SEND	TO_BE_SENT	Always	False	True	
PENDING	CANCEL	CANCELED	On Failure	False	True	
VERIFIED	AMEND	PENDING	On Failure	False	True	
PENDING	ACCEPT	VERIFIED	On Failure	True	True	CheckContact
NONE	NEW	PENDING	On Failure	False	True	
TO_BE_SENT	SEND	SENT	Always	False	True	
VERIFIED	CANCEL	CANCELED	On Failure	False	True	
SENT	CANCEL	CANCELED	On Failure	False	True	
SENT	RCT_STATUS_RJCT	NACKED	Always	False	True	
SENT	RCT_STATUS_ACPT	ACKED	On Failure	False	True	
PENDING	FIX	PENDING	On Failure	False	True	ApplyDefaultContact
SENT	UPDATE	SENT	Always	False	True	
NACKED	CANCEL	CANCELED	On Failure	False	True	
NACKED	TO_RESEND	TO_BE_SENT	Always	False	True	
TO_BE_SENT	CANCEL	CANCELED	On Failure	False	True	

Scheduled Task

The attributes for the scheduled task are:

- *Template* - (optional) - Collateral Manager report template used to define the scope of the margin call contracts, and per extension, the members that will be processed by the scheduled task.

- *Quote Offset* - (optional) - Set to 0, the system uses the closing FX quote as of the scheduled task value date. Set to -1, the system uses the closing FX quote as of the previous business day (scheduled task value date -1).

- Enforce Event Generation - true or false - If set to false, an event is generated for the current member only if there is no entry in the database table collateral_credit_line for the member for that day and there is a Credit Limit value change since the previous run of the scheduled task. If set to true (default), an event is generated for all members without any check.

Upon execution, CollateralCreditLineCalc events are generated. They are processed by the Message engine to generate camt.998 messages.

5.2 Central Bank Member Functions

As a central bank member, you can manage your ECMS contracts.

5.2.1 Contract Setup

In the **Details > ECMS Details** panel, the Enable ECMS field must be selected and a Maximum Credit Line should be designated.

In the **Details > Details** panel, the Position Type should be set to EXPECTED and Position Date should be set to POSITION_DATE_PROCESS.

5.2.2 Mobilisation & Demobilisation

Mobilisation in the ECMS context is the process of adding a new collateral asset in the collateral counterparty account or increasing the collateral position of an existing asset.

Demobilisation is the process of removing a collateral asset from the collateral counterparty account or reducing the collateral position of an existing asset.

Demobilisation needs to be initiated by the counterparty and can be completed only if there is sufficient remaining collateral asset in value to cover the current outstanding credit line.

In case of mobilisation, the collateral position is updated in the counterparty collateral account only when asset has settled. In case of demobilisation, the collateral position is updated in the counterparty collateral account on the settlement date even if is not effectively settled.

Counterparties are responsible for ensuring that the mobilised assets are compliant with the ECB eligible asset list. However, if a mobilised asset is ineligible or become ineligible then the collateral value of this asset will be 0.

Cash mobilisation is allowed only at last resort in case of a margin call and no other eligible collateral is available. Once additional assets are provided and the sufficiency is resolved, ECMS will automatically demobilise the cash collateral.

Mobilisation/Demobilisation should be chosen as a Processing Type in the Collateral Manager Filter.
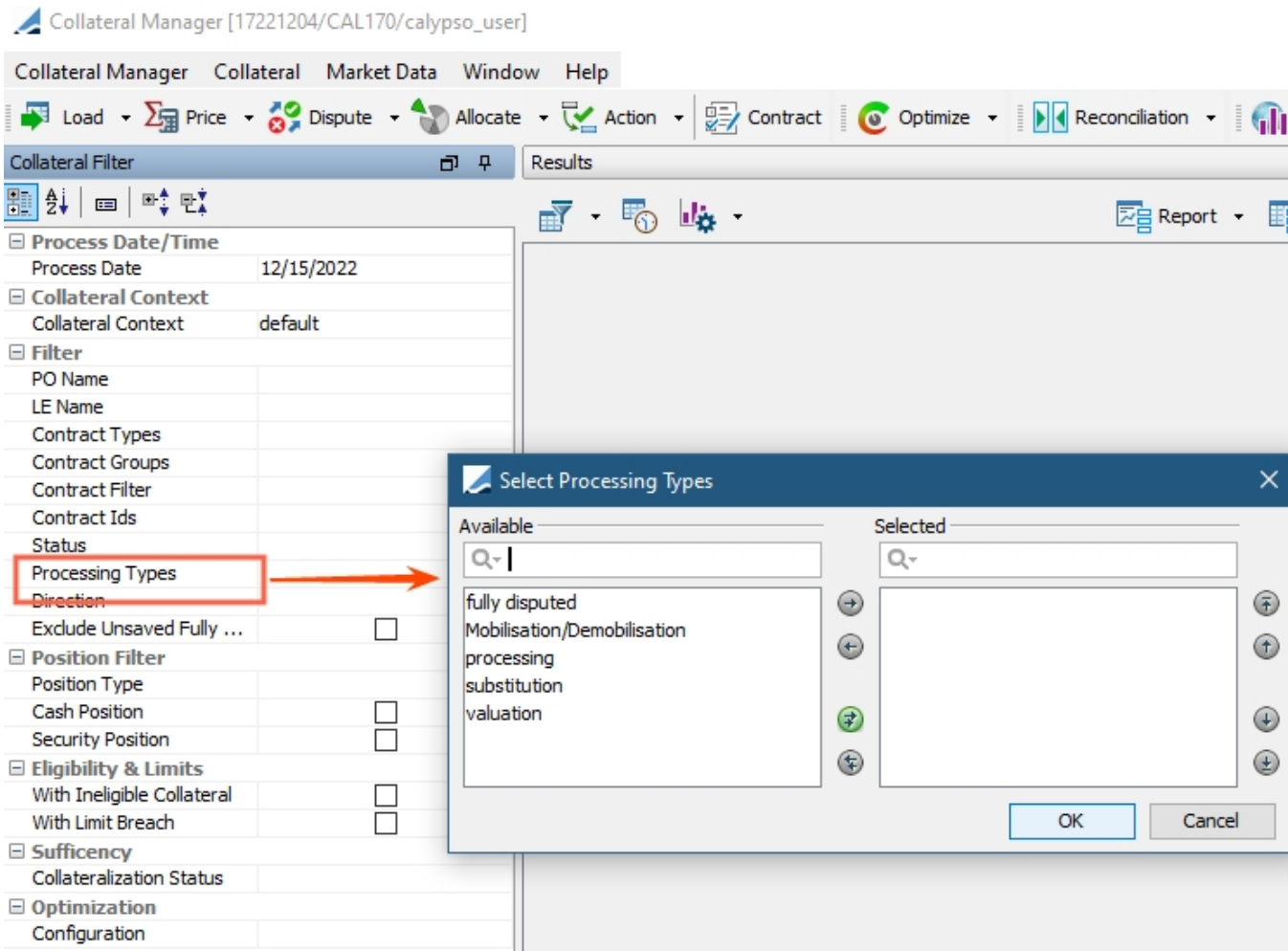
5.2.3 Credit Line Calculation

Credit Line is calculated as the difference between the collateral value of all assets that are available and eligible as per the ECB eligible asset list and the value of the transactions open with the NCB.

Whenever this credit line becomes negative (under collateralization), ECMS issues a margin call to the counterparty which needs to bring additional eligible collateral or to reduce its credit line. If the counterparty doesn't resolve the insufficiency by itself the NCB is allowed to directly debit the cash counterparty account.

It's possible within ECMS to setup a Maximum Credit Line. This can be done either by the counterparty or the NCB. If a Maximum Credit Line has been set, then any collateral over the Maximum Credit Line in value will not be considered in the Credit Line calculation.

The Maximum Credit Line value is displayed at the margin call entry level in the Result panel of Collateral Manager and in the standalone Margin Call Entry Report.

For credit line calculation purposes, four fields are used:

• *Net Balance* (renamed as *Credit Position*) returns the exposure amount against the central bank.

• *Total Previous Margin* (renamed as *Collateral Position*) returns the valuation of the collateral available in the pool account. It returns the sum of the Contract Values available in the Netted Position. Note that if an asset is ineligible its contract value can be computed as 0 based on a setup on the margin call contract (standard functionality).

• *Maximum Credit Line* returns the current Maximum Credit Line, if set on the contract.

• *Global Required Margin* (renamed as *Available Credit Line*)

For ECMS contract, the following formula is used to compute the Global Required Margin:

If "Maximum Credit Line" is not equal to 0, Global Required Margin = Constituted Margin = Margin Required – (-1) * Min (ABS(Total Previous Margin), ABS(Maximum Credit Line))

If "Maximum Credit Line" is equal to 0 (or null), Global Required Margin = Constituted Margin = Margin Required –Total Previous Margin (Standard calculation)

5.2.4 Workflow

A separate workflow is available for Mobilisation/Demobilisation entry types.
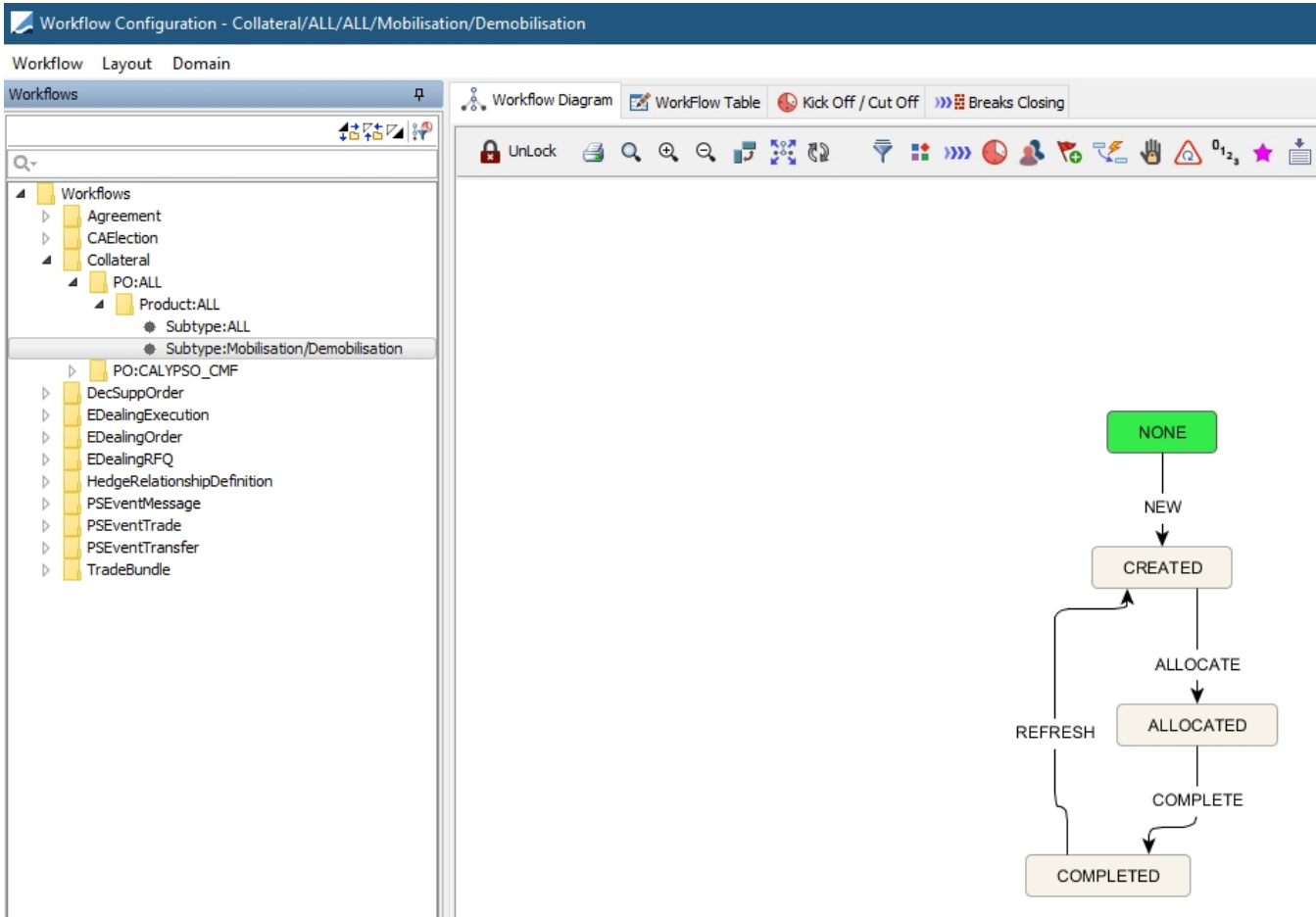
5.2.5 Allocation Process

When the Mobilisation or Demobilisation allocations are booked using the *Execute* collateral workflow rule, a margin call trade is crated like any other type of allocation. The allocation type is propagated to the margin call trade in the Trade Attributes.

Mobilisation of Collateral

When initiating a Mobilisation of collateral, an allocation is created in the Allocation window from either the security browser or the quick entry field.

Allocation fields default as follows:

• *Direction* defaults to *Pay* (payment from PO to the Central Bank)

• *Type* defaults to *Mobilisation*

• Other fields default like regular allocations including valuation fields and eligibility

Demobilisation of Collateral

When initiating a Demobilisation of collateral, an allocation is created in the Allocation window from the Netted Position panel, allocation fields default as follows:

• *Direction* defaults to *Receive* (collateral return from the central bank to the PO)

• *Type* must be defaulted to *Demobilisation*

• Other fields default like regular allocations including valuation and eligibility

6. Margin Call Contract - Data Uploader

Creating a Margin Call Contract

A margin call contract with mandatory fields can be created in Data Uploader using the "NEW" action.

Amending a Margin Call Contract with mandatory field validation

A margin call contract can be amended with mandatory field validation using the "AMEND" action.

For example, DTUP is used to amend onlyThreshold & MTA on MCC using AMEND –

Before:

After:

Amending Margin Call Contract without mandatory fields validation

"AMEND_FIELD" has been added to Data Uploader which will allow amending only the required attributes of the Margin Call Contract in bulk without any validation of mandatory fields. Users can upload the file either with the Margin Call Contract name or with the ID.

For example, DTUP is used to amend onlyThreshold & MTA on MCC using AMEND -

Before:

After:

Margin Call Window - Version - 11

Margin Call Config   Util   Help

Edit   Browse

Name :   Vinit Test Agreement MCC Workflow 8   406983   11   Subtype :   Master   Templates ...

Description :   Parent :

Parties | Details | Dates & Times | Exposure Groups | Initial Margin | Independent Amount | Eligibility | Concentration & Limits | Optimization | Configurations | Ratings | Additional Info | Documents

Show Haircut   Show Haircut

Threshold		
Type	NEVER	
Amount	0	
Base Currency		
Percentage Basis		
Percentage	0	
Rating		
Value Basis	Net Value	
Threshold Application		
Minimum Transfer Amount		
Type	NEVER	
Amount	0	
Base Currency		

Threshold		
Type	NEVER	
Amount	0	
Base Currency		
Percentage Basis		
Percentage	0	
Rating		
Value Basis	Net Value	
Threshold Application		
Minimum Transfer Amount		
Type	NEVER	
Amount	0	
Base Currency		

(Name)
(Description)

(Name)
(Description)

Additional Legal Entities

Additional Legal Entities

Margin Call Window - Version - 3

Margin Call Config   Util   Help

Edit   Browse

Name :   Vinit Test Agreement MCC Workflow 9   410982   3   Subtype :   Master   Templates ...

Description :   Parent :

Parties | Details | Dates & Times | Exposure Groups | Initial Margin | Independent Amount | Eligibility | Concentration & Limits | Optimization | Configurations | Ratings | Additional Info | Documents

Show Haircut   Show Haircut

Threshold		
Type	PERCENT	
Amount	0	
Base Currency		
Percentage Basis	NOMINAL	
Percentage	4	
Rating		
Value Basis	Net Value	
Threshold Application		
Minimum Transfer Amount		
Type	PERCENT	
Amount	0	
Base Currency		

Threshold		
Type	PERCENT	
Amount	0	
Base Currency		
Percentage Basis	MARGIN_CALL	
Percentage	3	
Rating		
Value Basis	Net Value	
Threshold Application		
Minimum Transfer Amount		
Type	PERCENT	
Amount	0	
Base Currency		
Percentage Basis	NOMINAL	

(Name)
(Description)

(Name)
(Description)

Deleting a Margin Call Contract

A margin call contract can be deleted via Data Uploader using the "DELETE" action.