



# Clearing Member Setup Guide

## Version 3.17.0

Core Calypso Version 14 Suite

March 2018 — Edition 25

This document describes the setup of Calypso in order to process clearing activity for clearing members on their behalf or on behalf of their clients.

▶ Please refer to the *Calypso Clearing Member User Guide* for sample usage scenarios.

[NOTE: The Calypso License to use this Calypso Integration Module does not include a license for any third-party data services to which this module can interface. Clients are responsible for contracting with the appropriate third-party data service(s) prior to using this Calypso Integration Module]

| Revision date        | Comments   |
|----------------------|--|
| <b>July 2013</b>     | First edition for version 3.0.2 of Clearing module.              |
| <b>October 2013</b>  | Second edition – Updates for version 3.1.0 of Clearing module.   |
| <b>November 2013</b> | Third edition – Updates for version 3.2.0 of Clearing module.    |
| <b>January 2014</b>  | Fourth edition – Updates for version 3.3.0 of Clearing module.   |
| <b>January 2014</b>  | Fifth edition - Fixed CCP-facing VM contract configuration.      |
| <b>February 2014</b> | Sixth edition – Updates for version 3.3.1 of Clearing module.    |
| <b>February 2014</b> | Seventh edition – Updates for version 3.3.2 of Clearing module.  |
| <b>March 2014</b>    | Eighth edition - Updates for version 3.3.3 of Clearing module.   |
| <b>April 2014</b>    | Ninth edition - Updates for version 3.4.0 of Clearing module.    |
| <b>June 2014</b>     | Tenth edition - Updates for version 3.5.0 of Clearing module.    |
| <b>August 2014</b>   | Eleventh edition – Updates for version 3.5.1 of Clearing module. |
| <b>October 2014</b>  | Edition 12 – Updates for version 3.6.1 of Clearing module.       |
| <b>February 2015</b> | Edition 13 – Updates for version 3.7.2 of Clearing module.       |
| <b>February 2015</b> | Edition 14 – Updates for version 3.8.0 of Clearing module.       |
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| <b>December 2016</b> | Edition 22 – Updates for version 3.14.2 of Clearing module – Added CCP legal entity attribute "UseAlternateSettleDateMethod".                |
| <b>July 2017</b>     | Edition 23 – Updates for version 3.16.0 of Clearing module.  |
| <b>October 2017</b>  | Edition 24 – Added Collateral Sweeping.  |
| <b>March 2018</b>    | Edition 25 – Updates for version 3.17.0 of Clearing module.  |

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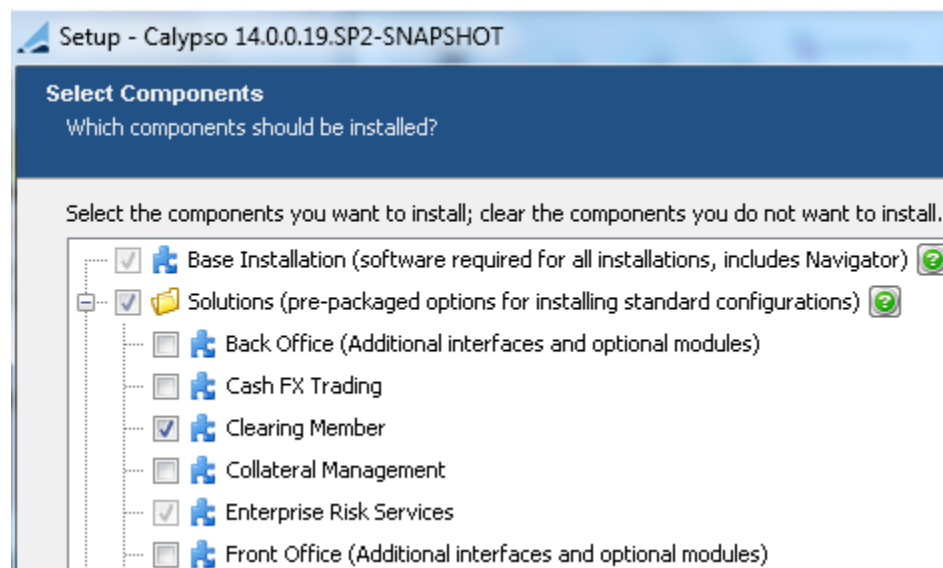
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## Section 1. Installation

The components of the Clearing Member module are installed as part of the Calypso Installer when you select the "Clearing Member" solution:



- **Exchange Feed** – Direct connection with the CCP through IBM MQ Series to transmit / receive trades and messages.
- **Data Uploader** – Upload of trades and messages received by the Exchange Feed into Calypso.
- **ERS Limits (optional)** – Limits are checked once the trades are in Calypso.
- **CMF OTC Clearing** – Back office processing – Once the trades are validated/rejected in Calypso, a consent/reject message is sent to the CCP so that the trades can be cleared – Import of initial margins, variation margins, market data, fees, etc. – Generation of client statements.
- **Collateral** – Allocation of margin calls (initial margins and variation margins).

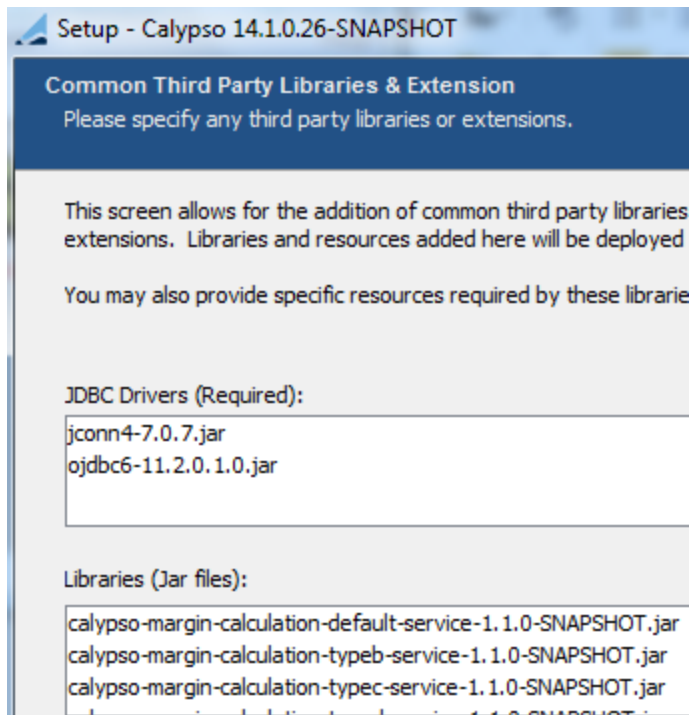
### Margin Calculators in version 14.1+

In the "Common Third Party Libraries & Extension" window, add the Margin Calculator JARs. There is a JAR for each type of report: DEFAULT, TYPEB, TYPEC, TYPED, TYPEE, TYPEH, and TYPEJ:

- calypso-margin-calculation-default-service-x.x.x-SNAPSHOT.jar - EUREX CreditClear
- calypso-margin-calculation-typeb-service-x.x.x-SNAPSHOT.jar - SGX
- calypso-margin-calculation-typec-service-x.x.x-SNAPSHOT.jar - TSE
- calypso-margin-calculation-typed-service-x.x.x-SNAPSHOT.jar - CME Swap (HistSim and OTCMargin reports)
- calypso-margin-calculation-typee-service-x.x.x-SNAPSHOT.jar - COMDER
- calypso-margin-calculation-typeh-service-x.x.x-SNAPSHOT.jar - LCH
- calypso-margin-calculation-typej-service-x.x.x-SNAPSHOT.jar - EUREX IM

Please contact Calypso Product Support for obtaining these JARS.





➤ Please refer to the *Calypso Installation Guide* for details on the Calypso Installer.

If you are installing a CUP (Calypso Upgrade Package) instead, the instructions are also in the Calypso Installation Guide.

### Database Upgrade

When you run Execute SQL as part of your installation, the data files will be already loaded. You just need to check the following checkboxes:

- exchange\_feed\_cme
- exchange\_feed
- exchange\_feed\_lch
- collateral
- collateral-workflow
- gateway
- ERS checkboxes (optional) – MarginCalculatorDomainValues, limitinstall, limitsinstall, marketriskinstall

➤ Please refer to **Calypso Collateral Management release notes for upgrade information, if any.**

## Section 2. Overview

Calypso's OTC derivatives clearing member solution combines Calypso's Back Office, Connectivity, Collateral and ERS Limits functionality to offer a complete solution for entities offering OTC clearing services to their internal trading desks as well as to external clients. The primary activities that the clearing member will be relying on Calypso for are:

- The use of connectivity and STP workflow to automatically accept or reject trades submitted for clearing by their customers,
- Management of cash and collateral related to the clearing activities, and
- Generating client statements for their customers to summarize the day's activity.

In order to support these activities, Calypso provides interfaces to Central Counterparties (CCPs) to allow the creation of trades to start them on their process to becoming a cleared trade in the client's account. These trades will flow into the system in real-time throughout the day. At the end of the day the CCPs will summarize all of the information about the trades, risk and positions related to each account managed by that clearing member, and Calypso provides the facility to run schedule tasks which import and process that information. The processing results in the generation of Calypso trade objects which will facilitate the settlement of cashflows and the management of Initial Margin Requirements.

The Collateral Management module will then take over to manage any Margin Calls resulting from the day's activity for each account. This includes not only cashflows related to the cleared trades, but payments made to or from each clearing account as part of routine business.

The end of day (EOD) processing will also save pricing marks for each trade based on the CCP's valuation, and will generate market data, such as curves and quotes, which can be used to value the positions using Calypso's native pricers. Again, all of this information is sourced from the EOD reports provided to the clearing member by the CCP.

As a last step, Calypso will aggregate all of the information stored in the system from the activity of each account, and generate a client statement which will be sent to the account holders as a record of their activity.

### 2.1 CCP and Service Coverage

Calypso's OTC derivatives clearing member solution includes "out-of-the-box" support for connectivity and integration with the following central counterparties:

- LCH SwapClear and SwapClear US integration:
  - Trade connectivity via SwapClear interface
  - Creation of mirrored trades enriched with keywords and fees
  - Import of EOD Reports for Market Data and Processing
  - Initial Margin calculation
- CME Clearing House and CME Clearing Europe integration:
  - Trade connectivity via MQ
  - Creation of mirrored trades enriched with keywords and fees
  - Import of EOD Reports for Market Data and Processing
  - Initial Margin calculation
- Processing of EOD Report in CDML format (Clearing Data Markup Language) for any CCP.

**[NOTE: Calypso does not provide exchange translators to the CDML format out-of-the-box]**

The concept provides a specification for the content and format of two file types, Trade Valuation and Initial Margin, into which the EOD Reports published by each CCP can be converted based on the business logic of their reports. This translation can be executed by a customer built translator, or any alternate method that our users want to employ.

Calypso's coverage for the services offered by the CCPs above is:

- LCH SwapClear and SwapClear US:  
All eligible products.

- Interest Rate Swaps: Vanilla, Basis, OIS, Zero Coupon, Variable Notional
  - FRAs
- CME Clearing House:
  - All eligible IRS products.
    - Interest Rate Swaps: Vanilla, OIS, Zero Coupon, Single currency basis swaps
    - FRAs
  - FX NDFs
- CME Clearing Europe:
  - All eligible IRS products.
    - Interest Rate Swaps: Vanilla
    - FRAs

Similar levels of support for other CCPs and services will be added as they become operational.

## 2.2 Intraday Processing

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The trades are imported in real-time from the CCP. For each trade captured on the affirmation platform, two mirrored trades are created in Calypso:

- One to reflect the clearing member position at the CCP
- One to reflect the client / house position at the clearing member

The trades navigate the Calypso workflow based on their clearing status (cleared, rejected, request), using straight-through processing and exceptions monitoring. Once the trades are cleared, they update the accounts positions. Intraday commissions and periodic fees are computed on the trades.

The system allows generating intraday margin call trades as margin calls are made by LCH.

The system also supports CCP limit checks for pre-clearing.

## 2.3 EOD Processing

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The key aspects of the EOD processing are as follows:

- Monitoring of house and client accounts
- Import and processing of CCP EOD files
- Management of settlement activity flowing from this processing
- Generation of Market Data based on EOD files
- Storage of trade level valuations based on Marks in EOD files
- Collateral Management process
- Regulatory reporting: Client Statements, CFTC Minimum Net Capital Requirement report, Sequestration Fund Requirement report, Collateral Value report (LSOC regulation)

At EOD, a number of files are imported from the CCP to update the client / house positions with the cashflows that are to be passed from the CCP to the clearing member, and ultimately to the Client or House entity. These cashflows include the PAI, Coupons, Fees, and Variation Margin.

Initial margin (IM) requirements are imported from EOD files into the system and stored as pricer measures on Collateral Exposure trades, based on Margin Call Contracts configurations. There is one Collateral Exposure trade per Margin Call Contract and currency. Through the Collateral Management process, Calypso generates Margin Call trades to transfer cash or collateral securities into and out of the client's accounts in order to maintain sufficient collateralization of their cleared positions. They are reported on the client statement, and based on the client's request, the margin calls can then be settled, paid in a different currency, or substituted to collateral securities.

Variation margins (VM) are represented by the cash positions of the cash client / house accounts. Margin calls to the variation margin requirements are computed through the Collateral Management process in cash, and occur when there is a negative balance in the client's cash account.

## Clearing Member Positions at the CCP

For house activity, there is one Margin Call Contract per CCP and product type that handles IM between the clearing member and the CCP.

For client activity, there is one Margin Call Contract per CCP and product type that handles IM between the clearing member and the CCP.

The initial margins can be stored in the base currency of the Margin Call Contract, or in the native currency. Margin calls are computed in the corresponding currency, and can be substituted to collateral securities.

There is no variation margin requirement between the clearing member and the CCP.

## Client Positions at the Clearing Member

### *Initial Margin*

There is one IM Margin Call Contract per Client, CCP and product type.

The initial margins can be stored in the base currency of the Margin Call Contract, or in the native currency. Margin calls are computed in the corresponding currency, and can be substituted to collateral securities.

### *Variation Margin*

The system supports storing variation margins in multiple currencies, or in a single currency, based on the client's choice.

- Multi-currency scenario – There is one VM Margin Call Contract per Client and per currency (regardless of CCP and product type).

In this case, there is one variation margin per currency, and the margin calls are computed per currency.

- Single-currency scenario – There is one VM Margin Call Contract per Client.

In this case, all variation margins are converted to the base currency of the Margin Call Contract. There is one variation margin in base currency, and the margin calls are computed in base currency.

The various scenarios, and their impact of the Collateral Management process and the client statement, are described in the *Calypso Clearing Member User Guide*.

## 2.4 Account Definition

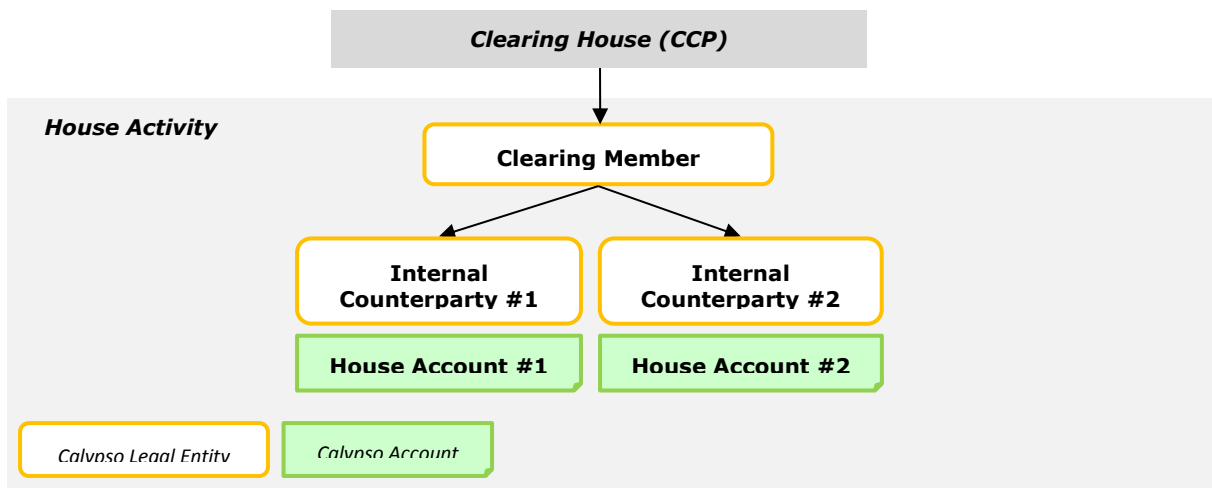
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The clearing member module supports the following types of accounts:

- House accounts for clearing member house activity
- Individual segregated client accounts (ISA) for individual client activity
- Omnibus segregated client accounts (OSA) for clients that provide clearing activity for their own individual clients

### House Accounts

House accounts are created to monitor the clearing member's trading activity, and differ from client accounts primarily in the way that they are treated by the CCP and Regulators.



Each house account is represented by an internal counterparty, which is a legal entity of the trading group within the same corporate structure, and a set of Calypso accounts.

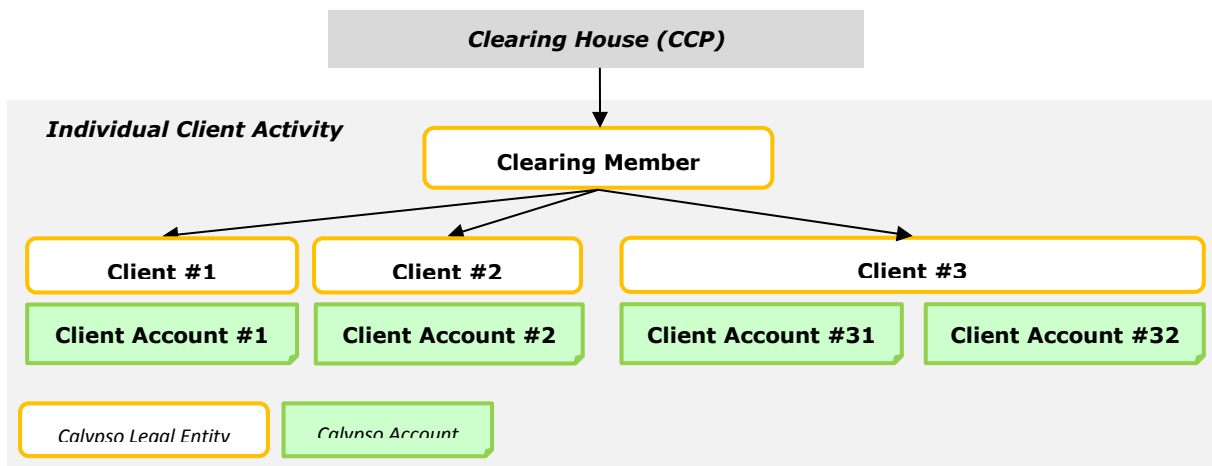
Trades are entered at the Internal Counterparty level, in the House book.

VM, PAI, Coupons, Upfront Payments, etc. are calculated by the CCP at trade level - They are reported and accounted in Calypso at the House Account level.

IM is calculated at the Internal Counterparty level.

- IM is settled between the CCP and the Clearing Member at the Clearing Member level across all house accounts
- IM is settled between the Clearing Member and the Internal Counterparty at the Internal Counterparty level

## Individual Client Accounts



Each client account is represented by an external counterparty, and a set of Calypso accounts. An individual client may have multiple unique accounts. Each account is managed independently at the CCP.

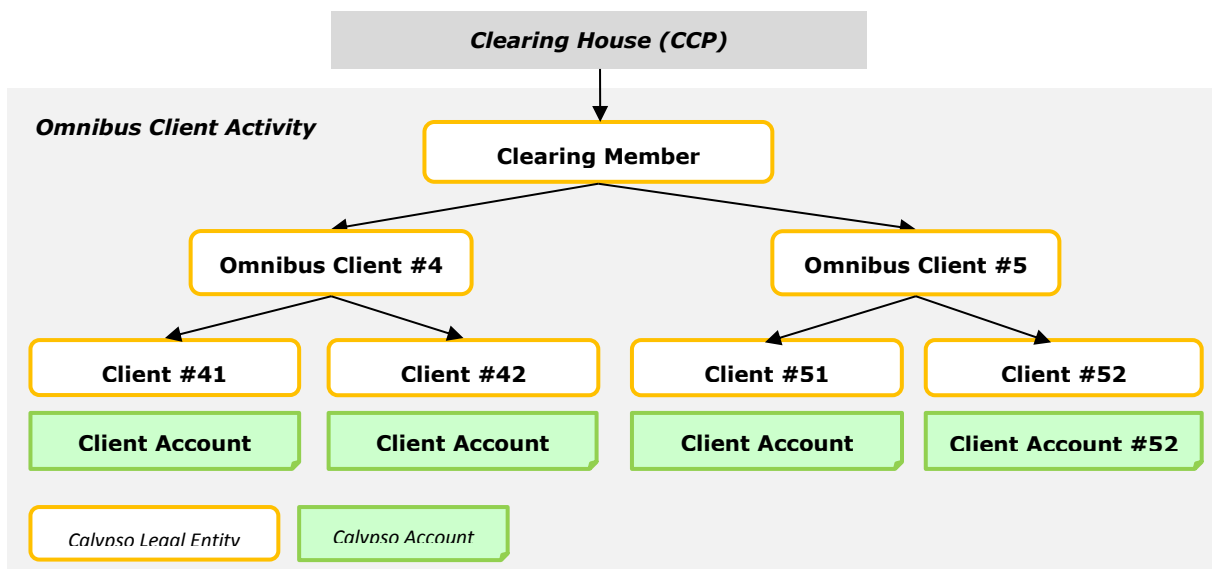
Trades are entered at the Client level, in the Client book.

VM, PAI, Coupons, Upfront Payments, etc. are calculated by the CCP at trade level - They are reported and accounted in Calypso at the Client Account level.

IM is calculated at the Client level.

- IM is settled between the CCP and the Clearing Member at the Clearing Member level across all client accounts
- IM is settled between the Clearing Member and the Client at the Client level

## Omnibus Client Accounts



The omnibus client provides clearing activity for its own individual clients.

Each omnibus client is represented by an external counterparty. Each individual client is represented by an external counterparty, which parent is the omnibus client, and a set of Calypso accounts.

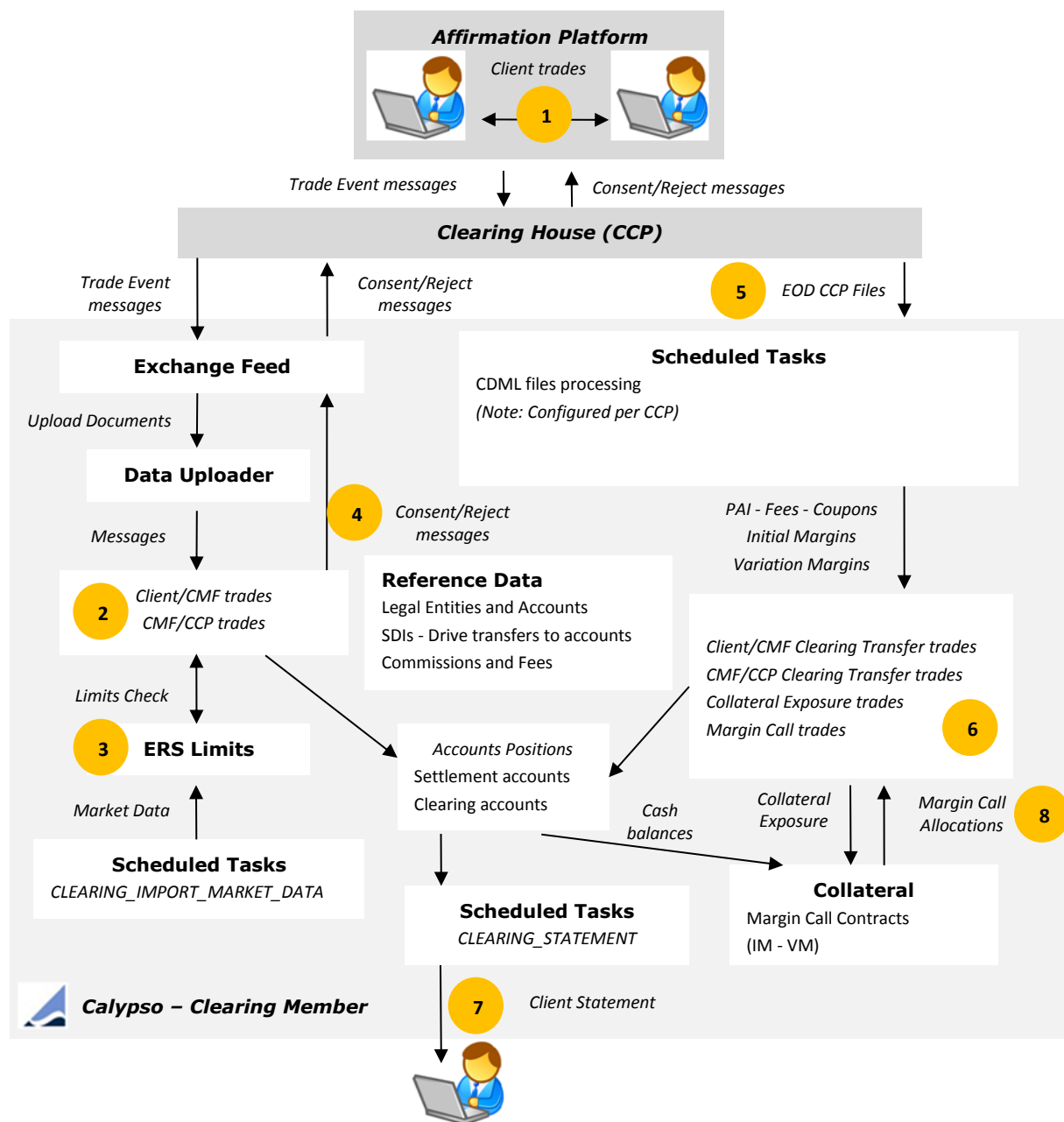
Trades are entered at the Client level, in the Client book.

VM, PAI, Coupons, Upfront Payments, etc. are calculated by the CCP at trade level - They are reported and accounted in Calypso at the Client Account level.

IM is calculated at the Omnibus Client level.

- IM is settled between the CCP and the Clearing Member at the Clearing Member level
- IM is settled between the Clearing Member and the Omnibus Client at the Omnibus Client level

## 2.5 Clearing Solution Flow



### Steps Details

|   |   |
|---|---|
| 1 | <p>Client trades are captured in the Affirmation Platform and routed to Calypso through the CCP and Calypso Exchange Feed using Trade Event messages.</p> <p>The Calypso Exchange Feed transforms the messages into Upload Documents, and triggers the Calypso Data Uploader.</p> |
| 2 | <p>The Calypso Data Uploader creates mirrored trades in Calypso to reflect the clearing member position at the CCP, and the client position at the clearing member.</p>   |

|   |  |
|---|--|
| 3 | Limits are checked on the trades using ERS Limits.   |
| 4 | <p>Once the trades are validated/rejected in Calypso, a consent/reject message is sent to the CCP so that the trades can be cleared, or rejected back to the executing broker.</p> <p>Once the trades are cleared, they update the accounts positions.</p> <p>Intraday commissions are computed on the trades. Periodic fees, rebates, and maintenance fees are invoiced to the clients.</p>   |
| 5 | <b>EOD</b> – The CCP files are imported into Calypso using scheduled tasks.  |
| 6 | <p>The scheduled tasks perform the following:</p> <ul style="list-style-type: none"> <li>CDML files processing - You first need to store the files into the system using the scheduled task <code>CLEARING_TRANSLATE_TO_CDML</code>. Then you can process the files using the scheduled task <code>CLEARING_PROCESS_FROM_CDML</code>.<br/>The scheduled task <code>CLEARING_PROCESS_FROM_CDML</code> consumes the imported <code>tradeValuationReport</code> and <code>initialMarginRreport</code> CDML reports.</li> <li>A set of scheduled tasks allow importing market data: <ul style="list-style-type: none"> <li><code>CLEARING_IMPORT_MARKET_DATA</code></li> <li><code>CLEARING_IMPORT_SCENARIO_SHIFTS</code></li> </ul> </li> <li><code>COLLATERAL_MANAGEMENT</code> computes cash margin calls on initial margins and variation margins.</li> <li><code>ERS_ANALYSIS</code> kicks off the calculation and storage of the limits usage and availability.</li> </ul> |
| 7 | Generation of the client statements using the scheduled task <code>CLEARING_STATEMENT</code> .   |
| 8 | <p>Once the client receives the client statement, the client decides how to meet the margin calls computed by the <code>COLLATERAL_MANAGEMENT</code> scheduled task: in cash, securities, or both.</p> <p>The margin calls are modified accordingly using the Collateral Manager, and are settled as applicable.</p>   |



## Section 3. Before you Begin

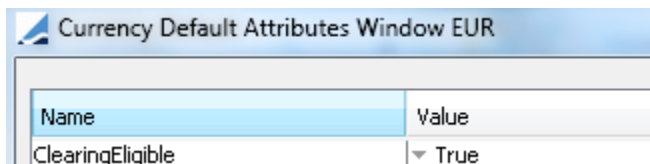
Before you begin, you need to define the following reference data.

### 3.1 Eligible Currencies

If you want to generate the Sequestered Report by currency, you need to define the eligible currencies for clearing.

The eligible currencies are defined using **Configuration > Definitions > Currency Defaults** from the Calypso Navigator.

Click **Attributes**, and set the attribute ClearingEligible = True.



### 3.2 Pricing Environments

You need to create the following pricing environments, pricer configurations, quotes sets, and pricing parameter sets.

| Pricing Env           | FROMDB | CME_IM            | CME_VM  | LCH_IM            | LCH_VM  |
|-----------------------|--------|-------------------|---------|-------------------|---------|
| Pricer Config         | FROMDB | CME_IM            | CME_VM  | LCH_IM            | LCH_VM  |
| Quote Set             | FROMDB | CME_IMReplication | default | LCH_IMReplication | default |
| Pricing Parameter Set | FROMDB | CME               | CME     | LCH               | LCH     |

The pricing environment FROMDB is used for back office activities, and CME\_IM, CME\_VM, LCH\_IM, LCH\_VM are used for ERS activities.

All pricing parameter sets listed above should have:

- USE\_MARKS = true
- ADJUST\_FX\_RATE = false
- Pricing Parameter Set FROMDB: ZD\_PRICING = false

Pricer configurations CME\_IM, CME\_VM, LCH\_IM, LCH\_VM:

- Swap product = PricerSwap
- FRA product = PricerFRA

[NOTE: The quote sets CME\_IMReplication and LCH\_IMReplication must be defined in the Data Mapping window for InterfaceName = CME/QuoteSet or LCH/QuoteSet, and Interface Value = IMReplication – See [Market Data](#) for details]

Pricer configuration FROMDB:

- Swap product = PricerFromDB
- FRA product = PricerFromDB

- FXNDF product = PricerClearingFromMarks (same as PricerFromDB, but it always uses the settlement ccy of a trade for loading marks).
- ClearingTransfer product = PricerFromDB
- CollateralExposure product = PricerCollateralExposure
- MarginCall = PricerFromDB

The pricing environment names in this documentation are only suggestions. Please feel free to assign names according to your business needs.

## 3.3 Data Uploader Setup

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### 3.3.1 MQ Series Setup

The Data Uploader reads and processes messages from IBM MQ Series via the Import Message engine, and transmits messages sent by the Sender engine.

Message information going through the MQ Series queues are plain-text, XML-formatted strings.

#### Step 1 - Install IBM MQ Series

In addition to installing MQ series, you need to obtain the following JARs from IBM.

- com.ibm.mq.commonservices\_7.0.1.3.jar
- com.ibm.mq.jar
- com.ibm.mqjms.jar
- com.ibm.mq.pcf.jar
- dhbcore.jar
- com.ibm.mq.headers.jar
- com.ibm.mq.jmqi.jar
- com.ibm.mq.jms.Nojndi.jar
- connector.jar
- fscontext.jar

Add those JARs to your CLASSPATH.

#### Step 2 – Create the MQ Series Queues

Launch MQ Explorer and create the following objects - Note that you will need each of these object names in later steps:

- Queue Manager
- Input Queue
- Output Queue

#### Step 3 – Generate the Bindings File

The bindings file is used as the PROVIDER\_URL to connect to the middleware.

Modify "<calypso\_home>/client/bin/uploaderMQSeries.bat". Change the **highlighted** text to match the object names you have created in Step 2. Change the CLASSPATH to the appropriate path as needed.

**QM\_Name** == Your Queue Manager

**InputQueueName** == Your Input Queue

**OutputQueueName** == Your Output Queue

```
echo del qcf(QueueConnectionFactory) > uploadermqsetup.scp
echo del q(OutputQueueName) >> uploadermqsetup.scp
echo del q(InputQueueName) >> uploadermqsetup.scp
echo def qcf(QueueConnectionFactory) qmgr(QM_Name) >> uploadermqsetup.scp
echo def q(OutputQueueName) qu(OutputQueueName) qmgr(QM_Name) tc(JMS)>>
uploadermqsetup.scp
echo def q(InputQueueName) qu(InputQueueName) qmgr(QM_Name) tc(JMS)>>
uploadermqsetup.scp
echo end >> uploadermqsetup.scp

set
CLASSPATH="C:\tools\IBM\MQS\java\lib\com.ibm.mq.jar;C:\tools\IBM\MQS\java\lib\com.ibm.mqjms.jar"
```

Run "<calypso home>/client/bin/uploaderMQSeries.bat" to generate the bindings file.

## Step 4 – Set the PROVIDER\_URL

Rename "<calypso home>/client/resources/UploaderJMSAdmin.config.sample" to "<calypso home>/client/resources/UploaderJMSAdmin.config", and update the PROVIDER\_URL property as necessary for your implementation.

- PROVIDER\_URL=file:///C:/tools/IBM/MQS/binding - The path to the bindings file you have generated in Step 3.

[NOTE: Resource files need to be copied to <calypso home>/custom-extensions/custom-projects/custom-shared-lib/src/calypso/resources. *You may need to create this folder if it does not already exist.* You will then need to deploy the files to your applications servers]

➤ Please refer to the *Calypso Installation Guide* for details on deploying resource files.

### 3.3.2 Incoming Messages Setup

The Data Uploader creates GATEWAYMSG incoming messages into Calypso, and creates the trades.

By default, the system sets the message sender to CLIENT and the message RECEIVER to CALYPSO. If these entities do not exist as Legal Entities, the system will create them.

You can change those values as needed in the file "<calypso home>/client/resources/gatewayservice.properties".

Rename "<calypso home>/client/resources/gatewayservice.properties.sample" to "<calypso home>/client/resources/gatewayservice.properties" and modify as needed.

```
GatewayServiceClientName=CLIENT
GatewayServiceHostName=CALYPSO
```

[NOTE: Resource files need to be copied to <calypso home>/custom-extensions/custom-projects/custom-shared-lib/src/calypso/resources. *You may need to create this folder if it does not already exist.* You will then need to deploy the files to your applications servers]

➤ Please refer to the *Calypso Installation Guide* for details on deploying resource files.

### Message Workflow

You need to define a message workflow to handle these messages.

- EventClass: PSEventMessage
- Subtype: GATEWAYMSG
- Product: ALL

| Orig Status   | Action    | Resulting Status | Different User           | Use STP                             | Priority | Log                      | Subtype    | Product Type | Rules              |
|---------------|-----------|------------------|--------------------------|-------------------------------------|----------|--------------------------|------------|--------------|--------------------|
| NONE          | NEW       | PENDING_VALID    | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 0        | <input type="checkbox"/> | GATEWAYMSG | ALL          |                    |
| PENDING_TRADE | CANCEL    | CANCELED         | <input type="checkbox"/> | <input type="checkbox"/>            | 0        | <input type="checkbox"/> | GATEWAYMSG | ALL          | CancelCleanUp      |
| PENDING_TRADE | LOAD      | COMPLETED        | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 0        | <input type="checkbox"/> | GATEWAYMSG | ALL          | CheckLink,Loader   |
| PENDING_TRADE | REPROCESS | PENDING_TRADE    | <input type="checkbox"/> | <input type="checkbox"/>            | 0        | <input type="checkbox"/> | GATEWAYMSG | ALL          | ReMap              |
| PENDING_VALID | CANCEL    | CANCELED         | <input type="checkbox"/> | <input type="checkbox"/>            | 0        | <input type="checkbox"/> | GATEWAYMSG | ALL          | CancelCleanUp      |
| PENDING_VALID | REPROCESS | PENDING_VALID    | <input type="checkbox"/> | <input type="checkbox"/>            | 0        | <input type="checkbox"/> | GATEWAYMSG | ALL          | ReMap              |
| PENDING_VALID | VALIDATE  | PENDING_TRADE    | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 0        | <input type="checkbox"/> | GATEWAYMSG | ALL          | CheckLink,Validate |

[NOTE: Any status code change to this workflow needs to be recorded in the file “[calypso home>/client/resources/gatewaysevice.properties”]

```
# Gives list of BO Messages states that are used to link pending messages
# These messages are blocked messages due to some validation error.
BOMessageIncompleteStates=PENDING_VALID,PENDING_TRADE,BACKLOAD
```

[NOTE: Resource files need to be copied to <calypso home>/custom-extensions/custom-projects/custom-shared-lib/src/calypso/resources. *You may need to create this folder if it does not already exist.* You will then need to deploy the files to your applications servers]

➤ Please refer to the *Calypso Installation Guide* for details on deploying resource files.

## 3.3.3 Trade Workflows

Note that the trade workflows are set per processing organization.

The PO is the clearing member. For example, PO = CGM LLC.

### ALL Product Types

Product Type = ALL

| Orig Status     | Action     | Resulting Status | Use STP | Rules / Filter   | Create Task |
|-----------------|------------|------------------|---------|--|-------------|
| CLEARED         | AMEND      | VERIFIED         | true    | <b>Rule</b> AutomaticFees<br><b>Filter</b> CCPStatus-NOT-ALLEGED               | true        |
| CLEARED         | UPDATE     | CLEARED          | false   | <b>Rule</b> AutomaticFees  | true        |
| CLEARED         | TERMINATE  | TERMINATED       | false   | <b>Rule</b> AutomaticFees,UpdateTermination                                    | false       |
| CLEARED         | ENRICH     | VERIFIED         | false   | <b>Rule</b> AutomaticFees,CheckSDI<br><b>Filter</b> Cleared_On_OR_Before_Today | true        |
| CONSENT GRANTED | UPDATE     | CONSENT GRANTED  | false   |  | true        |
| CONSENT GRANTED | ACCEPT     | CREDIT_CONSENTED | false   |  | true        |
| CONSENT GRANTED | REFUSE     | REJECTED         | false   |  | true        |
| CONSENT GRANTED | STP-ACCEPT | CREDIT_CONSENTED | true    |  | true        |

| Orig Status      | Action        | Resulting Status | Use STP | Rules / Filter  | Create Task |
|------------------|---------------|------------------|---------|---|-------------|
| CONSENT REJECTED | REFUSE        | REJECTED         | false   |   | true        |
| CONSENT REJECTED | REJECT        | REJECTED         | false   |   | true        |
| CONSENT REJECTED | UPDATE        | CONSENT REJECTED | false   |   | false       |
| CREDIT_CONSENTED | TERMINATE     | TERMINATED       | false   | <b>Rule</b> UpdateTermination   | false       |
| CREDIT_CONSENTED | UPDATE        | CREDIT_CONSENTED | false   |   | false       |
| CREDIT_CONSENTED | AMEND         | CREDIT_CONSENTED | false   |   | false       |
| CREDIT_CONSENTED | REFUSE        | REJECTED         | false   | <b>Filter</b> CCPStatus-NOT-CLEARED   | false       |
| CREDIT_CONSENTED | ACK           | CLEARED          | true    | <b>Filter</b> CCPStatus-CLEARED   | true        |
| CREDIT_CONSENTED | CLEAR         | CLEARED          | false   | <b>Rule</b> AutomaticFees   | true        |
| LIMIT_CHECK      | ACCEPT        | REQUIRES_CONSENT | false   |   | false       |
| LIMIT_CHECK      | UNDO          | PENDING          | false   |   | false       |
| LIMIT_CHECK      | CHECK_LIMIT   | REQUIRES_CONSENT | true    | <b>Filter</b> Limit-WhatIfCheckErrorN   | true        |
| LIMIT_CHECK      | CANCEL        | CANCELED         | false   |   | false       |
| LIMIT_FAILED     | REJECT        | CONSENT REJECTED | false   |   | true        |
| LIMIT_FAILED     | UPDATE        | LIMIT_FAILED     | false   |   | false       |
| LIMIT_FAILED     | AMEND         | LIMIT_FAILED     | false   |   | true        |
| LIMIT_FAILED     | RECHECK_LIMIT | PENDING          | false   |   | true        |
| LIMIT_FAILED     | ACCEPT        | CONSENT GRANTED  | false   |   | true        |
| LIMIT_FAILED     | REFUSE        | REJECTED         | false   |   | false       |
| NONE             | NEW           | CLEARED          | false   | <b>Rule</b> AutomaticFees,ClearingLimitPortfolio<br><b>Filter</b> CCPStatus-NOT-ALLEGED | false       |
| NONE             | NEW           | PENDING          | false   | <b>Rule</b> AutomaticFees,ClearingLimitPortfolio<br><b>Filter</b> CCPStatus-ALLEGED     | false       |
| PENDING          | AMEND         | VERIFIED         | false   | <b>Rule</b> CheckWhatIfLimits   | true        |
| PENDING          | ACCEPT        | CONSENT GRANTED  | true    |   | false       |
| PENDING          | WHATIF        | LIMIT_CHECK      | false   | <b>Rule</b> CheckWhatIfLimits   | true        |
| REJECTED         | UPDATE        | REJECTED         | false   |   | false       |
| REQUIRES_CONSENT | REJECT        | CONSENT REJECTED | false   |   | true        |
| REQUIRES_CONSENT | STP-REJECT    | LIMIT_FAILED     | true    | <b>Filter</b> Limit-WhatIFCheckPassN  | true        |
| REQUIRES_CONSENT | REJECT        | LIMIT_FAILED     | false   | <b>Filter</b> Limit-IsViolated  | true        |
| REQUIRES_CONSENT | UPDATE        | REQUIRES_CONSENT | false   |   | true        |
| REQUIRES_CONSENT | STP-ACCEPT    | CONSENT GRANTED  | true    | <b>Filter</b> Limit-WhatIfCheckPass   | true        |
| REQUIRES_CONSENT | ACCEPT        | CONSENT GRANTED  | false   |   | false       |
| REQUIRES_CONSENT | REFUSE        | REJECTED         | false   |   | true        |

| Orig Status | Action    | Resulting Status | Use STP | Rules / Filter                              | Create Task |
|-------------|-----------|------------------|---------|---|-------------|
| TERMINATED  | AMEND     | TERMINATED       | false   | <b>Rule</b> AutomaticFees                   | false       |
| TERMINATED  | UPDATE    | TERMINATED       | false   |   | false       |
| VERIFIED    | CANCEL    | CANCELED         | false   |   | false       |
| VERIFIED    | TERMINATE | TERMINATED       | false   | <b>Rule</b> AutomaticFees,UpdateTermination | true        |
| VERIFIED    | MATURE    | MATURED          | false   |   | false       |
| VERIFIED    | UPDATE    | VERIFIED         | false   |   | true        |
| VERIFIED    | AMEND     | VERIFIED         | false   | <b>Rule</b> AutomaticFees                   | false       |
| VERIFIED    | ACCEPT    | CONSENT GRANTED  | false   |   | true        |
| VERIFIED    | REJECT    | REJECTED         | false   |   | true        |

[NOTE: The transitions CREDIT\_CONSENTED – ACK – CLEARED and LIMIT\_CHECK – CHECK\_LIMIT - REQUIRES\_CONSENT must have “Generate Intermediate Event” checked to force the generation of a trade event so that the messages can be generated]

#### Filter CCPStatus-ALLEGED

**Static Data Filter Window [130007SP2/CLEARING\_29/] (User: slee)**

Name: CCPStatus-ALLEGED    Attributes...    Simulate

Comment:    Pending

Groups: ANY    ...

| Attribute      | Criteria |     | Filter Value(s) |
|----------------|----------|-----|-----------------|
| KEYWORD.Status | IN       | Add | ALLEGED         |

#### Filter CCPStatus-NOT-ALLEGED

**Static Data Filter Window [130007SP2/CLEARING\_29/] (User: slee)**

Name: CCPStatus-NOT-ALLEGED    Attributes...    Simulate

Comment:    Pending M

Groups: ANY    ...

| Attribute             | Criteria |     | Filter Value(s)   |
|-----------------------|----------|-----|-------------------|
| IN Static Data Filter | NOT_IN   | Add | CCPStatus-ALLEGED |

**Filter Cleared\_On\_OR\_Before\_Today**

**Static Data Filter Window [130007SP2/CLEARING\_29/] (User: slee)**

Name:  Attributes... Simulate...

Comment:

Groups:  ...

Pending M...

| Attribute    | Criteria      |       | Filter Value(s) |
|--------------|---------------|-------|-----------------|
| Cleared Date | ▼ TENOR_RANGE | Range | From -50Y to 0D |

**Filter CCPStatus-CLEARED**

**Static Data Filter Window [130007SP2/CLEARING\_29/] (User: slee)**

Name:  Attributes... Simulate...

Comment:

Groups:  ...

Pending M...

| Attribute      | Criteria |     | Filter Value(s) |
|----------------|----------|-----|-----------------|
| KEYWORD.Status | ▼ IN     | Add | AMENDED,CLEARED |

**Filter CCPStatus-NOT-CLEARED**

**Static Data Filter Window [130007SP2/CLEARING\_29/] (User: slee)**

Name:  Attributes... Simulate...

Comment:

Groups:  ...

Pending M...

| Attribute             | Criteria |     | Filter Value(s)   |
|-----------------------|----------|-----|-------------------|
| IN Static Data Filter | ▼ NOT_IN | Add | CCPStatus-CLEARED |

**Filter Limit-WhatIfCheckErrorY**

**Static Data Filter Window [130007SP2/CLEARING\_29/] (User: slee)**

Name:  Attributes... Simulate...

Comment:

Groups:  ...

Pending Mod...

| Attribute                        | Criteria |     | Filter Value(s) |
|----------------------------------|----------|-----|-----------------|
| KEYWORD.LIMIT_WHATIF_CHECK_ERROR | ▼ IN     | Add | Y               |

**Filter Limit-WhatIfCheckErrorN**

**Static Data Filter Window [130007SP2/CLEARING\_29/] (User: slee)**

Name:

Comment:

Groups:

| Attribute             | Criteria |     | Filter Value(s)         |
|-----------------------|----------|-----|-------------------------|
| IN Static Data Filter | ▼ NOT_IN | Add | Limit-WhatIfCheckErrorY |

**Filter Limit-WhatIfCheckPass**

**Static Data Filter Window [130007SP2/CLEARING\_29/] (User: slee)**

Name:

Comment:

Groups:

| Attribute                       | Criteria |     | Filter Value(s) |
|---------------------------------|----------|-----|-----------------|
| KEYWORD.LIMIT_WHATIF_CHECK_PASS | ▼ IN     | Add | Y               |

**Filter Limit-WhatIfCheckPassN**

**Static Data Filter Window [130007SP2/CLEARING\_29/] (User: slee)**

Name:

Comment:

Groups:

| Attribute                        | Criteria |     | Filter Value(s) |
|----------------------------------|----------|-----|-----------------|
| KEYWORD.LIMIT_WHATIF_CHECK_ERROR | ▼ NOT_IN | Add | Y               |
| KEYWORD.LIMIT_WHATIF_CHECK_PASS  | ▼ IN     | Add | N               |

**Filter Limit-IsViolated**

**Static Data Filter Window [130007SP2/CLEARING\_29/] (User: slee)**

Name:

Comment:

Groups:

| Attribute                  | Criteria |     | Filter Value(s) |
|----------------------------|----------|-----|-----------------|
| KEYWORD.LIMIT_IN_VIOLATION | ▼ IN     | Add | Y               |



## Clearing Transfer

| Orig Status | Action    | Resulting Status | STP   | Product Type     | Rules    |
|-------------|-----------|------------------|-------|------------------|----------|
| CANCELED    | AMEND     | CANCELED         | false | ClearingTransfer |          |
| NONE        | NEW       | PENDING          | false | ClearingTransfer |          |
| PENDING     | AUTHORIZE | VERIFIED         | true  | ClearingTransfer | CheckSDI |
| PENDING     | CANCEL    | CANCELED         | false | ClearingTransfer |          |
| VERIFIED    | AMEND     | VERIFIED         | false | ClearingTransfer |          |
| VERIFIED    | CANCEL    | CANCELED         | false | ClearingTransfer |          |

## Collateral Exposure

| Orig Status | Action | Resulting Status | Use STP | Product Type       | Rules | Create Task |
|-------------|--------|------------------|---------|--------------------|-------|-------------|
| NONE        | NEW    | VERIFIED         | false   | CollateralExposure |       | false       |
| VERIFIED    | CANCEL | CANCELED         | false   | CollateralExposure |       | false       |
| VERIFIED    | AMEND  | VERIFIED         | false   | CollateralExposure |       | false       |

## Interest Bearing

| Orig Status | Action | Resulting Status | Use STP | Product Type    | Rules | Create Task | Gen Int. Event |
|-------------|--------|------------------|---------|-----------------|-------|-------------|----------------|
| CLEARED     | AMEND  | VERIFIED         | false   | InterestBearing |       | false       | true           |
| NONE        | NEW    | VERIFIED         | true    | InterestBearing |       | false       | true           |
| VERIFIED    | AMEND  | VERIFIED         | false   | InterestBearing |       | false       | true           |
| VERIFIED    | CANCEL | CANCELED         | false   | InterestBearing |       | false       | true           |

## Margin Call

| Orig Status | Action    | Resulting Status | Use STP | Product Type | Rules                            | Create Task |
|-------------|-----------|------------------|---------|--------------|----------------------------------|-------------|
| NONE        | NEW       | PENDING          | false   | MarginCall   | UpdateClearingMarginCallKeywords | true        |
| PENDING     | AUTHORIZE | VERIFIED         | true    | MarginCall   | CheckSDI                         | true        |
| VERIFIED    | AMEND     | VERIFIED         | false   | MarginCall   |                                  | true        |
| VERIFIED    | CANCEL    | CANCELED         | false   | MarginCall   |                                  | true        |

The rule UpdateClearingMarginCallKeywords allows propagating the fields defined in the domain "Clearing.MCC.propagateFields", from the margin call contract additional info to the margin call trades.

If the domain "Clearing.MCC.propagateFields" is empty, the fields CCP, CCP\_ORIGIN\_CODE, MARGIN\_TYPE and PRODUCT\_TYPE are propagated by default.

### 3.3.4 Calypso Engines

The Import Message engine and Sender engine use "`<calypso home>/client/resources/calypso_uploader_config.properties`" to connect to the input and output queues of MQ Series.

You should run these engines after the full clearing member setup is completed (legal entities, message configuration, etc.).

**Version 14.0+**

Make sure that the following engines are configured in "<calypso home>/deploy/EngineStartupConfig.properties":

```
engines.startup=TransferEngine,MessageEngine,InventoryEngine,AccountingEngine,LiquidationEngine,PositionEngine,TaskEngine,LifeCycleEngine,UploaderImportMessageEngine,UploaderSenderEngine

#UploaderImportMessage Engine
UploaderImportMessageEngine.class=com.calypso.tk.engine.UploadImportMessageEngine
UploaderImportMessageEngine.name=UploaderImportMessageEngine
UploaderImportMessageEngine.param.count=1
UploaderImportMessageEngine.param.1=config
UploaderImportMessageEngine.param.value.1=Uploader

# Uploader Sender Engine
UploaderSenderEngine.class=com.calypso.engine.advice.SenderEngine
UploaderSenderEngine.name=UploaderSenderEngine
UploaderSenderEngine.param.count=1
UploaderSenderEngine.param.1=config
UploaderSenderEngine.param.value.1=Uploader
```

You can then start the Import Message engine and Sender engine as part of the Engine server using "<calypso home>/startEngineserver.bat" on Windows platforms, or "<calypso home>/startEngineserver.sh" on \*nix platforms.


### Version 14.1+

The Import Message engine and the Sender engine are configured in the Engine Manager of Web Admin: event subscription and engine parameters.

You may need to add these engine if they are not available for configuration:

- For the Import Message engine, create a new engine called UploaderImportMessageEngine, with class name `com.calypso.tk.engine.UploadImportMessageEngine`  
Engine parameter `config=Uploader`
- For the Sender engine, create a new engine called UploaderSenderEngine, with class name `com.calypso.engine.advice.SenderEngine`

The Import Message engine and the Sender engine can be started from the Engine Manager in Web Admin.

 Please refer to Calypso Web Admin documentation for complete details.

The Import Message engine is now listening to messages from the MQ input queue.

The Sender engine is now sending messages to the MQ output queue.

If you want to run another Import Message engine with "-config LCH\_1" for example, you would need to:

- Create the following classes:  
LCH\_1Message.java  
LCH\_1MessageHandler.java  
LCH\_1IEAdapter.java  
LCH\_1IEAdapterConfig.java  
Contact Calypso Support for sample classes.
- Create a file `LCH_1bridge_config.properties` with the appropriate MQ connection information.  
\*If\* the details in `LCHbridgeservice.properties` cannot be used for this second queue, you need to create `LCH_1bridgeservice.properties`.

Then you need to add an entry for the LCH\_1 Import Message engine to "<calypso home>/deploy/EngineStartupConfig.properties" as described above.

Please note that the queue **\*must\*** have the LCH (or CME) prefix for this process to work.

### 3.3.5 Task Station Configuration

You can view EX\_GATEWAY exceptions in the Task Station for exceptions related to the integration of GATEWAYMSG messages.

You can also view GATEWAYMSG messages using <status code>\_GATEWAYMSG.

## 3.4 Exchange Feed Setup

### 3.4.1 Property Files

The Exchange Feed module requires the configuration of the following property files:

- <calypso home>/client/resources/CMEbridgeservice.properties and <calypso home>/client/resources/LCHbridgeservice.properties
- <calypso home>/client/resources/ErrorCodeBundleExchangeFeed.properties
- <calypso home>/client/resources/Core.DataServer.serviceconfig.xml
- <calypso home>/client/resources/CMEbridge\_config.properties and <calypso home>/client/resources/LCHbridge\_config.properties

[NOTE: Resource files need to be copied to <calypso home>/custom-extensions/custom-projects/custom-shared-lib/src/calypso/resources. You may need to create this folder if it does not already exist. You will then need to deploy the files to your applications servers]

➤ Please refer to the *Calypso Installation Guide* for details on deploying resource files.

### “CMEbridgeservice.properties” and “LCHbridgeservice.properties”

You need to set the following properties:

- bridge.counterparty.attribute.identifier - Counterparty attribute that stores the counterparty.
- bridge.book.attribute.identifier - Book attribute that stores the book.
- BridgeMessageDefaultSender - Default message sender = CME or LCH
- BridgeMessageDefaultReceiver - Default message receiver (clearing member PO)
- <MESSAGE\_TYPE>\_<PRODUCT>\_BRIDGE\_XSLT - To override default product specific XSLT invoked within TransformBridgeMessageRule (optional)
- <MESSAGE\_TYPE>\_<PRODUCT>\_BRIDGE\_XSLT\_CLASS - To override default product XSLT java class used for transformation invoked within TransformBridgeMessageRule (optional)
- file.bridge.log.directory - Directory for all original messages for logging purpose.
- ThreadPoolSize - Number of threads
- ValidatorFiles - Set of XSLT files which are used to validate if the incoming message can be handled by the engine.

Sample “CMEbridgeservice.properties”

```
REQUESTCONSENT_SWAP_BRIDGE_XSLT=
```

```
CLEARINGCONFIRMED_SWAP_BRIDGE_XSLT=
REQUESTCONSENT_SWAP_BRIDGE_XSLT_CLASS=
CLEARINGCONFIRMED_SWAP_BRIDGE_XSLT_CLASS=
bridge.counterparty.attribute.identifier=CME_CPTY
bridge.book.attribute.identifier=CME_ACCOUNT
file.bridge.log.directory=/mnt/presales/logs/clearing/cme
BridgeMessageDefaultSender=CME
BridgeMessageDefaultReceiver=CGM LLC
ThreadPoolSize=5
ValidatorFiles=exchange_feed_cme_clearing_confirmed_check_fpml5.0.xslt,exchange_feed_c
me_request_consent_check_fpml5.0.xslt,exchange_feed_cme_clearing_refused_check_fpml5.0
.xslt
```

## “ErrorCodeBundleExchangeFeed.properties”

This file is used to define Exchange Feed module specific exception IDs and message content mapping.

Please note that this is an extension of “ErrorCodeBundle.properties”. The system requires both property files.

This file contains the following information:

```
#Exchange Feed Msg override datauploader
EF_10014=Channel is not running
EF_10015=Cannot parse file
EF_10016=Cannot read file
EF_10017=Cannot find gateway message with linked ID
EF_10018=Invalid trade id in gateway message
EF_10019=Cannot find trade
EF_10020=Missing values from clearing status
EF_10021=More than 1 trade found for external reference
EF_10022=No Previous BridgeMessage Found
EF_10023=Trade Not Found
EF_10024=Invalid Interest Compounding Method
EF_10025=Invalid Interest Compounding Frequency
EF_10026=No preferred FX Rate definition found
EF_10027=Trade Source not found in Trade Keyword
EF_10028=Domain value not found
EF_10029=No Trade found with Correlation ID provided
#Error Types
EF_23000=MQ Exception
EF_21002=Miss Data for Transform

#Exchange Feed Error Msg
EF_50001=Invalid FPML Message
EF_50002=Folder Not Exist
EF_50003=ExchangeFeedBridgeEngine is not registered
EF_50004=Missing FeedConfigType in message
EF_50005=Message Handling failure

#Exchange Feed Field
EF_00001=External Reference
```

## “Core.DataServer.serviceconfig.xml”

Add the following lines to register the RMI Server in the Data Server:

```
<bean id="baseDataUploadServer" class="com.calypso.tk.service.DataUploadServerImpl">
</bean>
<bean id="rmiBaseDataUploadServer" parent="rmiServiceExporter">
  <property name="service" ref="baseDataUploadServer" />
  <meta key="serviceInterface" value="com.calypso.tk.service.RemoteDataUpload" />
</bean>
```

```
</bean>
```

## “CMEbridge\_config.properties” and “LCHbridge\_config.properties”

These files are required by MQ Series as a channel for incoming and outgoing messages.

The Import Message engine reads the data from the file to establish connection to the MQ to retrieve/send data from/to the queue.

- `jms.modetypeclass` - Factory class in the JNDI service provider
- `jms.url` - JNDI directory where the MQ binding files reside
- `jms.queue.connectionFactory` - JMS Connection factory name is set under the MQ server setup
- `jms.channels` - MQ channel to be monitored
- `monitor.frequency` - Monitoring intervals
- `input.queue.name` - JMS Queue name is bound to the MQ queue for incoming messages from
- `output.queue.name` - JMS Queue name is bound to the MQ queue for outgoing messages

### Sample “CMEbridge\_config.properties”

```
# JMS properties file
#
jms.modetypeclass=com.sun.jndi.fscontext.RefFSContextFactory
jms.url=file:/c:/calypso/software/JNDI-Directory
jms.queue.connectionFactory=CME_MATCHING.CF
#indicate that messages will be sent to a JMS WebSphere MQ client
jms.sender.queue.targetClient=MQJMS_CLIENT_NONJMS_MQ
jms.receiver.queue.targetClient=MQJMS_CLIENT_NONJMS_MQ
jms.channels=TO.CALYPSO, CME.TO.CALYPSO2
# monitor for the queue channel listed above, in terms of second
monitor.frequency = 60

input.queue.name=JQUEUE.CME.CALYPSO
JQUEUE.CME.CALYPSO.queue.ackType=auto
JQUEUE.CME.CALYPSO.queue.persist=false
JQUEUE.CME.CALYPSO.queue.transacted=false

output.queue.name=JQUEUE.CALYPSO.CME
JQUEUE.CALYPSO.CME.queue.ackType=auto
JQUEUE.CALYPSO.CME.queue.persist=false
JQUEUE.CALYPSO.CME.queue.transacted=false
```

### Sample “LCHbridge\_config.properties”

```
# JMS properties file
#
jms.modetypeclass=com.sun.jndi.fscontext.RefFSContextFactory
jms.url=file:/c:/calypso/software/JNDI-Directory
jms.queue.connectionFactory=LCH_MATCHING.CF
monitor.frequency = 60

input.queue.name=JQUEUE.LCH.CALYPSO
JQUEUE.LCH.CALYPSO.queue.ackType=auto
JQUEUE.LCH.CALYPSO.queue.persist=false
JQUEUE.LCH.CALYPSO.queue.transacted=false

output.queue.name=JQUEUE.CALYPSO.LCH
JQUEUE.CALYPSO.LCH.queue.ackType=auto
```

```
JQUEUE.CALYPSO.LCH.queue.persist=false
JQUEUE.CALYPSO.LCH.queue.transacted=false
```

### 3.4.2 Exchange Feed Bridge Engine Registration

#### Version 14.0+

Add ExchangeFeedBridgeEngine to the Engine configuration using **Configuration > System > Engine Config** from the Calypso Navigator.

Configure ExchangeFeedBridgeEngine to subscribe to PSEventMessage using **Configuration > System > Event** from the Calypso Navigator.

Add the event filter BridgeMessageEventFilter to ExchangeFeedBridgeEngine.

This event filter takes the selection criteria from the static data filter "BridgeMessageEventFilter". It should be defined as:

**Static Data Filter Window [140022SP2/CLEARING\_ETD/calypso\_user]**

Name: BridgeMessageEventFilter    Attributes...    Simula

Comment: SD filter for BridgeImportMessageEngine    Pending

Groups: WF\_Message    ...

| Attribute      | Criteria | Add | Filter Value(s)                          |
|----------------|----------|-----|--|
| Message Action | IN       | Add | AMEND,NEW,REDO,REPROCESS,TRANSFORM,MATCH |
| Message Status | IN       | Add | TRANSFORMED,COMPLETED                    |
| Message Type   | IN       | Add | BRIDGEMSG                                |

#### Version 14.1+

The ExchangeFeedBridge engine is configured in the Engine Manager of Web Admin: event subscription and engine parameters.

You may need to add this engine if it is not available for configuration: Create a new engine called ExchangeFeedBridgeEngine, with class name com.calypso.tk.engine.ExchangeFeedBridgeEngine.

### 3.4.3 Incoming Messages Setup

The Exchange Feed processes CONSENT messages and BRIDGEMSG messages. It transforms BRIDGEMSG messages into Calypso Upload Document objects through the TransformBridge rule. The Exchange Feed Bridge engine generates the GATEWAYMSG messages that trigger the Data Uploader to create trades in Calypso based on the Calypso Upload Document objects.

#### BRIDGEMSG Message Workflow

This workflow can be imported using the file "<calypso home>/client/resources/workflow/BRIDGEMSG.wf".

If you are clearing with LCH, this workflow should be imported using the file "<calypso home>/client/resources/BRIDGEMSG\_FOR\_CVR.wf" instead. It adds the transition highlighted below for managing incoming collateralAllocation messages.

| Orig Status | Action | Resulting Status | STP   | Rules      | Comments |
|-------------|--------|------------------|-------|------------|----------|
| COMPLETED   | REDO   | PENDING          | false | RedoBridge |          |
| COMPLETED   | AMEND  | COMPLETED        | false |            |          |

| Orig Status | Action    | Resulting Status | STP   | Rules  | Comments                               |
|-------------|-----------|------------------|-------|--|--|
| NONE        | NEW       | PENDING          | false |  |  |
| PENDING     | TRANSFORM | TRANSFORMED      | true  | TransformBridge  | Swap_BRIDGE_XSLT=<br>SWAP_DEFAULT.xslt |
| PENDING     | LOAD      | COMPLETED        | false | TransformBridge  | Swap_BRIDGE_XSLT=<br>SWAP_DEFAULT.xslt |
| PENDING     | CANCEL    | CANCELED         | false |  |  |
| PENDING     | MATCH     | COMPLETED        | true  | MatchCollateralAllocationResponse<br>Filter: isLCHCVRMessage |  |
| TRANSFORMED | REDO      | PENDING          | false | RedoBridge   |  |
| TRANSFORMED | LOAD      | COMPLETED        | false | MergeTradeId   |  |
| TRANSFORMED | CANCEL    | CANCELED         | false |  |  |

Static data filter "isLCHCVRMessage":

Static Data Filter Window [140022SP2/LAPTOP\_REL14/calypso\_user]

Name: isLCHCVRMessage

Comment: Accepts LCHCVR messages only

Groups: ANY

| Attribute               | Criteria | Filter Value(s) |
|-------------------------|----------|-----------------|
| MSG_ATTRIBUTE.Connector | IN       | LCHCVR          |

## CONSENT Message Workflow

This workflow can be imported using the file "<calypso home>/client/resources/workflow/CONSENT.wf".

| Orig Status | Action    | Resulting Status | STP   | Message Type | Rules        |
|-------------|-----------|------------------|-------|--------------|--------------|
| NONE        | NEW       | PENDING          | false | CONSENT      |              |
| PENDING     | AUTHORIZE | TO_BE_SENT       | true  | CONSENT      | CheckContact |
| TO_BE_SENT  | SEND      | SENT             | true  | CONSENT      |              |

### 3.4.4 Task Station Configuration

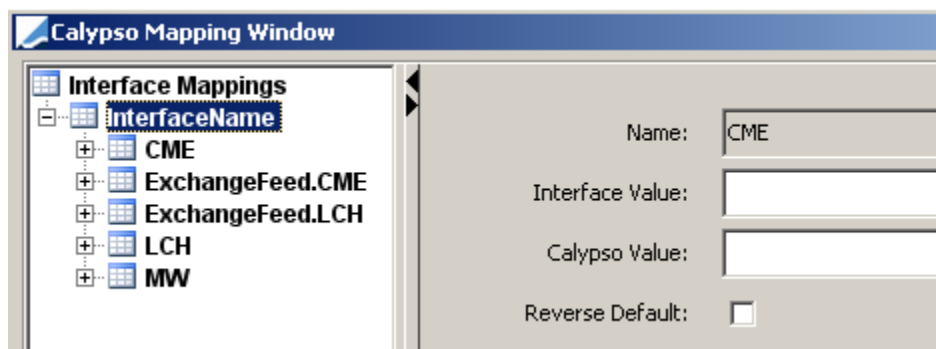
You can view EX\_BRIDGE exceptions in the Task Station for exceptions related to the integration of BRIDGE messages.

You can also view BRIDGEMSG messages using <status code>\_BRIDGEMSG.

### 3.4.5 Data Mapping

Add the Calypso Mapping Window to the Calypso menu (menu action `mapping.CalypsoMappingWindow`), so that you can define mapping values between the CCPs and Calypso.

Mapping values are provided out-of-the-box, and need to be reviewed / validated for the interface names "CME", "ExchangeFeed.CME", "ExchangeFeed.LCH", and "LCH".



To audit changes to the Data Mapping, add CalypsoMapping to the domain "classAuditMode".

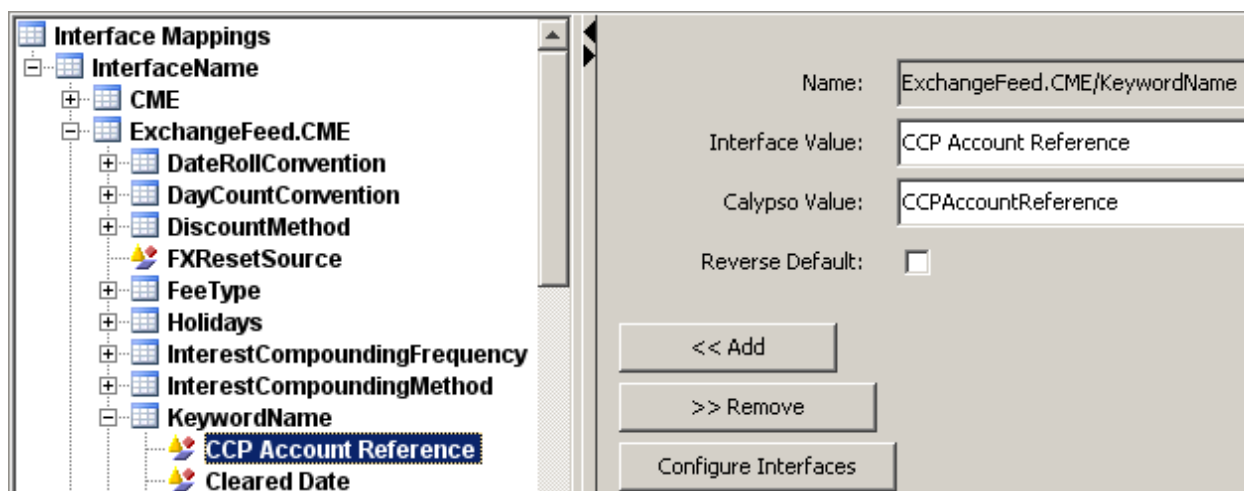
#### Important Note:

Make sure that the overnight reference indices defined in Calypso (EONIA, FEDFUNDS, etc.) have the reference index attribute `IndexCalculator = OISNew`.

## Trade Keywords

A set of trade keywords allow standardizing the Clearing solution.

It is possible to map a keyword name/value to another one by setting the mapping through the Calypso Mapping Window.



### Clearing Keywords

| Trade Keywords      | Description  |
|---------------------|--|
| CCP                 | Clearing house: CME, LCH, etc.<br>Short name of the clearing house legal entity.   |
| CCPAccountReference | Clearing house account name - SDI selection is based on this trade keyword, which value must match the "ExternalName" of the Calypso client/house account. |



| Trade Keywords                     | Description   |
|------------------------------------|---|
| CCPBlockTradeID                    | Block trade ID.   |
| CCPClearedDate                     | Date that the trade is processed by the clearing house.   |
| CCPFirmReference                   | Clearing Member Firm identifier.  |
| CCPMessageTimestamp                | Message timestamp.  |
| CCPOriginCode                      | Set to either HOUSE or CLIENT to reflect house activity or client activity.                                 |
| CCPTradeID                         | Trade ID assigned by the clearing house. It is also set on the trade's External Reference.                  |
| ClearingConfirmedCorrelationID     | LCH trade confirmation number.  |
| ClearingConfirmedIncomingMessageID | LCH message confirmation number.  |
| ClearingConfirmedSentBy            | LCH confirmation sender reference.  |
| ClearingConfirmedSentTo            | LCH confirmation receiver reference.  |
| client_trade_id                    | Trade ID provided by the client.  |
| CMFAccountReference                | Set by the system when a trade is created: ID of the Calypso clearing account.                              |
| IS_CLIENT                          | Set to "false" for HOUSE trades and clearing member mirror trades.<br>Set to true for client mirror trades. |
| LIMIT_WHATIF_CHECK_PASS            | Y if the limits check passed, or N otherwise.   |
| LIMIT_WHATIF_LIMIT_MAX             | Limit amount.   |
| LIMIT_WHATIF_PORTFOLIO             | ERS Limits portfolio.   |
| LIMIT_WHATIF_RISK_USAGE            | Trade amount contributing to the limit check.   |
| PlatformTradeID                    | Trade ID assigned by the platform where the trade is captured (Markitwire for example).                     |
| Status                             | Trade status at the clearing house.   |
| TradeSource                        | Platform where the trade is captured (Markitwire for example).  |
| USUPrefix                          | Unique swap identifier - CFTC namespace.  |
| USIValue                           | Unique swap identifier – trade ID.  |

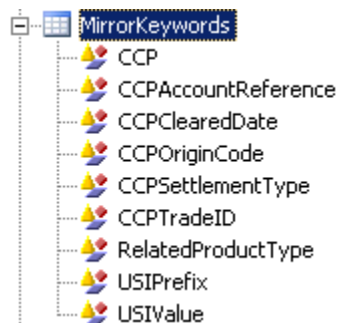
## Mirror Keywords

The following trade keywords need to be propagated on the mirror trades.

They need to be added to the domain "MirrorKeywords": CCP, CCPAccountReference, CCPClearedDate, CCPOriginCode, CCPSettlementType, CCPTradeID, LIMIT\_WHATIF\_CHECK\_ERROR, LIMIT\_WHATIF\_CHECK\_ERROR\_MSG, LIMIT\_WHATIF\_CHECK\_PASS, LIMIT\_WHATIF\_LIMIT\_MAX,

LIMIT\_WHATIF\_PORTFOLIO, LIMIT\_WHATIF\_RISK\_USAGE, PlatformTradeID, RelatedProductType, Status, USIPrefix, USIValue.

Examples:



## Trade Templates

Trade templates are required to populate missing information from the incoming messages.

You can create trade templates from the Trade windows using "Save As Template" from the product specific menu.

In the Calypso Mapping Window, you can set the trade template for a given product type.

Select the InterfaceName "ExchangeFeed.CME" and add a TradeTemplate:

- Interface Value = product type (Example "InterestRateSwap")
- Calypso Value = trade template (Example "USD3L1")

|                  |                                |
|------------------|--------------------------------|
| Name:            | ExchangeFeed.CME/TradeTemplate |
| Interface Value: | InterestRateSwap               |
| Calypso Value:   | USD3L1                         |

Repeat for more product types as needed, and for the InterfaceName "ExchangeFeed.LCH" as needed.

|                  |                                |
|------------------|--------------------------------|
| Name:            | ExchangeFeed.LCH/TradeTemplate |
| Interface Value: | InterestRateSwap               |
| Calypso Value:   | USD3L1                         |

## 3.5 Clearing Member Setup

The following files are available under "`<calypso home>/client/resources/config/`":

- `clearingconnection.properties.sample`
- `clearing.properties.sample`
- `clearing.reportPaths.properties.sample`
- `CustomClearingReports.xml.sample`
- `clearingServiceCodes.properties.sample`

These files are optional – They are used to override out-of-the-box properties, see below for usage.

[NOTE: Resource files need to be copied to <calypso home>/custom-extensions/custom-projects/custom-shared-lib/src/calypso/resources. *You may need to create this folder if it does not already exist.* You will then need to deploy the files to your applications servers]

➤ Please refer to the *Calypso Installation Guide* for details on deploying resource files.

## “clearingconnection.properties”

Rename “clearingconnection.properties.sample” to “clearingconnection.properties”, and modify as needed.

This file contains connection information to the CCP.

```
# Key format is
#
# <CCP short name>.<Firm ID (PO LE attribute)>.<key>
#
# URI format must include protocol, host and port (where applicable)
#
# For public key SFTP authentication, keyPassphrase is optional. Key
# path can be an absolute filesystem path, or a resource path within
# the classpath. Filesystem paths take precedence

CME.4Q0.URI=sftp://sftpng.cmegroup.com:22
CME.4Q0.user=<user>
CME.4Q0.password=<password>

LCH.CC1.URI=sftp://195.246.228.9:6020
LCH.CC1.user=<user>
LCH.CC1.key=<path to CC1 key>

LCH.CC2.URI=sftp://195.246.228.9:6020
LCH.CC2.user=<user>
LCH.CC2.key=<path to CC2 key>
LCH.CC2.keyPassphrase=<CC2 key passphrase>
```

### Firm Id

They are stored in the attributes of the clearing member processing org: “<CCP><Clearing Service>FirmId”, for example “CMEIRDFirmId”.

If no such legal entity attribute is found, the system will look for the legal entity attribute “<CCP>FirmId”, for example “CMEFirmId”.

In this example, the CMEFirmId is “4Q0” – This is a test environment for Calypso – You need to replace it with your own firm ID.

In this example, the LCHFirmId for LCH US is CC1, and the LCHFirmId for LCH UK is CC2 – There are test environments for Calypso – You need to replace them with your own environments.

### URI

Then set the values for the parameters URI.

In this example, “sftp://sftpng.cmegroup.com:22” is a test environment for Calypso – You need to replace it with your own environment.

The following types of URI are currently supported: HTTP/S, SFTP, FTPS, FTP and local file system.

Examples of local file system:

```
CME.4Q0.URI=file:///C:/CLEARING/Data/CME
LCH.CC1.URI=file:///C://CLEARING//Data//LCH
```

**User / Password or User / Key**

Then set the values for the parameters user/password, or user/key/keyPassphrase.

If you set both user/password, and user/key/keyPassphrase for a given URI, user/key/keyPassphrase will be used for authentication.

keyPassphrase is optional – It is only needed if the key is protected.

**“clearing.properties”**

This file is used to override default properties as needed.

If you want to override the default properties, rename “clearing.properties.sample” to “clearing.properties”.

**clearing.import.folder**

The default import folder is “<user home>\Calypso\clearing\” on the server where the Scheduler engine is running, and for the user running the Scheduler engine.

If you want to override the default import folder, rename “clearing.properties.sample” to “clearing.properties” and set the import folder “clearing.import.folder”.

```
#
# Clearing configuration properties
#

# Import data base folder. If not defined, it will
# default to $calypso_user_home/clearing, where $calypso_user_home
# is the running user's Calypso home (-userhome arg)
#
#clearing.import.folder=/home/clearing/Calypso/clearing
clearing.import.folder=X:\\shared\\Calypso\\clearing
```

**clearing.custom.packages**

You can set custom packages as needed using the property clearing.custom.packages.

Example:

```
clearing.custom.packages=pkg1,pkg2,...,pkgN
```

where pkgN is the custom packages to add, for example:

```
clearing.custom.packages=com.customer.package1,com.customer.package2
```

If the property clearing.custom.packages does not contain the package “com.calypso.clearing”, it will be added at the end of the list.

If the property clearing.custom.packages contains the package “com.calypso.clearing”, its order in the list will be respected.

**clearing.import.lchFirmIdPathSuffix**

By default, when clearing members access their LCH environment, the “LCH<Clearing Service>FirmId” is used to identify the path to the CCP files. If such attribute is not present, it is the attribute “LCHFirmId”.

If the clearing members want to access their test environment at LCH instead, the path to the CCP files is identified by the “LCH<Clearing Service>FirmId” / “LCHFirmID” with the suffix “(mbr)”.

This property allows setting the suffix to access the test environment.

Example:

```
clearing.import.lchFirmIdPathSuffix=(mbr)
```

***clearing.import.lch.swapClearFolderSuffix***

By default, the CCP files are stored in the SwapClear folder but LCH could setup another folder for testing purposes.

The other folder can be accessed using the folder suffix defined in this property.

The folder will become "Swap Clear <folder suffix>".

Example:

```
clearing.import.lch.swapClearFolderSuffix=\ Member Test Refresh
```

The folder /<mnemonic>/SwapClear/ will be transformed to /<mnemonic>/SwapClear Member Test Refresh/.

***clearing.import.cme.UATNRSuffix***

If defined, the value of this property will be added in front of all CSV and XML file extensions.

Example:

```
clearing.import.cme.UATNRSuffix=.nr
```

The suffix will be added as follows: "/cme/ftp/PUB/IRS/IRSDFR\_LIBOR1M\_\${date}.nr.csv".

**"clearing.reportPaths.properties"**

This file is used to override report paths. It contains the default report paths for reference. You can override as needed.

If you want to override the default report paths, rename "clearing.reportPaths.properties.sample" to "clearing.reportPaths.properties".

```
#
# Report paths overrides
#
# Paths defined in this properties file will override those loaded from the
# OOTB configuration and CustomClearingReports.xml. Only paths can be
# overridden here, no other report attribute will be modified. Refer to
# Clearing documentation for more information.
#
# The following syntaxes are accepted
#
# <reportBeanName>=<new report path>
# <CCP>.<reportName>=<new report path>
#
# where
#
# reportBeanName : report bean name, with bean as in Spring bean. See
#                  CustomClearingReports.xml for more info
#
```

Example:

```
CME.CMEPAAQuote = /cme/ftp/PUB/IRS/cme.paa.rate.{date}.csv
```

The following placeholders are supported:

- `${date}`: Valuation date. Formatting depends on CCP.
- `${firmId}`: Firm ID, as defined in the legal entity attributes "<CCP><Clearing Service>FirmId" or "<CCP>FirmId" if not present.
- `${lchDynamicDateFolder}`: Only for LCH. It is based on the value of the legal entity attribute "LCHRemoteFolderStructure":
  - If it is set to "Dynamic", then `${lchDynamicDateFolder}` is the formatted valuation date, plus a final forward slash (/). Only for LCH and for Dynamic folders, as defined in the legal entity attribute "LCHRemoteFolderStructure".
  - If it is set to "Static" then `${lchDynamicDateFolder}` is an empty string.

You can also use this file to handle individual Zip files: You need to override the report path by adding one of the following suffixes:

- zip
- gz

Example:

```
LCH.HistoricIndexRates = /Public(mbr)/SwapClear/Trade/${date}_REP00003 - Historic
Index Rates_1.TXT.zip
```

Additional capability – The following syntax is also supported:

```
${key=value?expandedValue}
```

For example:

```
${firmId=CC2?.zip}
```

meaning:

- If firmId is CC2, then the ".zip" suffix is added.
- If not, nothing is added.

Example:

```
LCH.CashSettlementReport =
/${firmId}/SwapClear/${lchDynamicDateFolder}${date}_REP00016c - OTC Portfolio Cash
Settlement (Client)_1.TXT${firmId=CC2?.zip}
```

## “CustomClearingReports.xml”

This file is used to override default reports and market data.

If you want to override the default reports and market data, rename "CustomClearingReports.xml.sample" to "CustomClearingReports.xml".

[NOTE: The report configuration is done using Spring]

**Adding a new report:** For example, we need to add a new CME DFR curve, IRSDFRCurve\_AONIA. The way to do it is to add the following XML to the file "CustomClearingReports.xml":

```
<bean id="IRSDFRCurve_AONIA"
class="com.calypso.tk.clearing.external.report.CMEReport">
  <property name="name" value="IRSDFRCurve_AONIA" />
  <property name="CCP" value="CME" />
  <property name="displayName" value="IRS DFR Curve - AONIA" />
</bean>
```

```

<property name="type" value="MARKET_DATA" />
<property name="path" value="/cme/ftp/PUB/IRS/IRSDFR_AONIA_${date}.nr.csv" />
<property name="XSLResourcePath" value="stylesheet/cme/CME_DFR.xslt" />
<property name="defaultFormat" value="CSV" />
<property name="attributes">
  <map>
    <entry key="marketDataType">
      <util:constant static-
field="com.calypso.tk.clearing.external.report.MarketDataType.CURVES" />
    </entry>
  </map>
</property>
<property name="plugins">
  <list>
    <ref bean="cmeCurveProcessorPlugin" />
  </list>
</property>
</bean>

```

Description of each property:

- **name** (mandatory) : Name of the report. Along with the CCP, it fully identifies a report.
- **CCP** (mandatory).
- **displayName** (optional) : Will default to the name.
- **type** (mandatory) : We currently support 2 types of reports:
  - *EOD\_REPORT* : reports used in BO processing (e.g.: margin)
  - *MARKET\_DATA*
- **path** (mandatory) : Remote path of the report. Note the `${date}` placeholder: some variables can be used, always enclosed in `${}`
  - *date* : valuation date
  - *firmId* : e.g. 4Q0 or CC1 in our case. Taken from the PO LE attributes "<CCP><Clearing Service>FirmId" or "<CCP>FirmId" if not present
- **XSLResourcePath** (mandatory): CLASSPATH path of the XSLT style sheet to process the report
- **defaultFormat** (optional) : Raw report format. 3 types currently supported
  - XML
  - CSV (Comma Separated Values) (e.g.: used in CME)
  - TSV (Tab Separated Values) (e.g.: used in LCH)
- **attributes** (optional)
  - **marketDataType**: within market data type we support several subtypes. The marketDataType is important, because, OOB, the report groups that used to be defined in the clearingmarketdata.properties files are now dynamically built by grouping reports that have the same marketDataType. E.g.: all reports with marketDataType=com.calypso.tk.clearing.external.report.MarketDataType.CURVES will form the OOB group "Curves". The supported types are
    - com.calypso.tk.clearing.external.report.MarketDataType.CURVES ("Curves" group)
    - com.calypso.tk.clearing.external.report.MarketDataType.QUOTES ("Quotes" group)
    - com.calypso.tk.clearing.external.report.MarketDataType.RATE\_RESET ("Rate Resets" group)
    - com.calypso.tk.clearing.external.report.MarketDataType.HOLIDAYS ("Holidays" group)
- **plugins** (optional)

**For the specific case of CME DFR curves**, there is an easier way to add a new one: this would be an equivalent definition:

```

<bean name="IRSDFRCurve_AONIA" parent="parentDFRCMEReport">

```

```
<property name="path" value="/cme/ftp/PUB/IRS/IRSDFR_AONIA_${date}.nr.csv" />
</bean>
```

Note the parent=parentDFRCMEReport : that will complete the rest of the configuration.

**Modifying the OOB market data groups:** For example, you do not want to download all the OOB curves, but only 2 of them: IRSDFRCurve\_AONIA and IRSDFRCurve\_TONAR. You can add the following XML to "CustomClearingReports.xml":

```
<bean name="curvesGroupBean"
class="com.calypso.tk.clearing.external.report.ReportInfoGroup">
  <property name="name" value="Curves" />
  <property name="reportNames">
    <set>
      <value>IRSDFRCurve_AONIA</value>
      <value>IRSDFRCurve_TONAR</value>
    </set>
  </property>
</bean>
```

The property name=Curves will make the OOB Curves group to be ignored, and the new one will contain only those 2 reports. Needless to say, the report names must point to existing report: if you add names of unknown reports, they will be ignored.

### “clearingServiceCodes.properties”

This file is used to override default service codes. Service codes are used in the scheduled task CLEARING\_EXPORT\_CVR\_WORKSHEET to determine the file name.

```
#
# Clearing Service Codes
#
# Arbitrary codes that identify Clearing Services. Initially, a clearing service
# would identify a product, or family of products (product type) that are usually
# margined together, although in the future this definition could change
#
# Current supported syntax is
#
#   < CCP short name>.<Product type>=<Service Code>
#
# Uncomment and redefine, if needed
#
#CME.IRD=01
#CME.NDF=02
#LCH.IRD=03
```

## 3.6 Collateral Setup

### 3.6.1 Collateral Workflow

The Collateral workflow provided out-of-the box by the Collateral module must be modified as follows.

All the transitions from NONE to EXECUTED should be STP.

| Orig Status | Action     | Resulting Status | Use STP | Rules   |
|-------------|------------|------------------|---------|---------|
| ALLOCATED   | VALIDATE   | VALIDATED        | true    |         |
| EXECUTED    | AMEND      | EXECUTED         | false   |         |
| EXECUTED    | SUBSTITUTE | EXECUTED         | false   | Execute |



|                 |                |                 |       |              |
|-----------------|----------------|-----------------|-------|--------------|
| EXPOSURE_AGREED | ALLOCATE       | ALLOCATED       | true  |              |
| NONE            | NEW            | PRICING         | true  |              |
| PRICED_NO_CALL  | AGREE_EXPOSURE | EXPOSURE_AGREED | false |              |
| PRICED_PAY      | AGREE_EXPOSURE | EXPOSURE_AGREED | true  | AutoAdjust   |
| PRICED_RECEIVE  | AGREE_EXPOSURE | EXPOSURE_AGREED | true  | AutoAdjust   |
| PRICING         | PRICE          | PRICED_NO_CALL  | true  | CheckNoCall  |
| PRICING         | PRICE          | PRICED_PAY      | true  | CheckPay     |
| PRICING         | PRICE          | PRICED_RECEIVE  | true  | CheckReceive |
| VALIDATED       | EXECUTE        | EXECUTED        | true  | Execute      |

### 3.6.2 Buffer Functionality

The multi-buffer functionality is only enabled if the domain "Collateral.Multiplier" contains the value "Buffer".

## 3.7 ERS Limits Setup

You need to set the following environment properties in the Calypso User Env.

| Environment Property      | Description   | Sample Value                          |
|---------------------------|---|---------------------------------------|
| ERS_RISK_SERVICE_ROOT     | URL of the ERS Risk services – It contains the host name and port number of the ERS Web Services.   | http://localhost:8084/risk-services   |
| ERS_RISK_APP_URL          | URL of the ERS Risk application – It contains the host name and port number of the ERS Web Services.  | http://localhost:8084/risk-services   |
| ERS_LIMIT_POSTDEAL_STATUS | List of Trade status codes for post-deal limit checking.  | VERIFIED,PRICING                      |
| ERS_LIMIT_PREDEAL_STATUS  | List of Trade status codes for pre-deal limit checking.   | NONE,PENDING                          |
| ERS_PRICING_ENV           | ERS pricing environment.<br>[NOTE: Make sure that the user who runs the risk engines has the same timezone as the selected pricing environment] | INTRADAY                              |
| ERS_LIMIT_APP_URL         | URL of the ERS Limits application – It contains the host name and port number of the ERS Web Services.  | http://localhost:8084/limits-services |
| ERS_LIMIT_SERVICE         | Types of limits to be computed: CreditRisk, MarketRisk, or ALL.   | ALL                                   |

## Section 4. Legal Entities and Accounts Setup

### Notes

**Legal entities must be defined to identify the clearing house, the clearing member (processing org), and the clients. They should all have at least one contact.**

**When defining legal entities, accounts, and books, a number of attributes will be set as well. Please remember that attributes and their values are case sensitive.**

### 4.1 Defining Books

The book in Calypso is used to store trades.

When trades are imported into the system, and trades are created as a result of the EOD processes, the books are set according to the following logic. This applies to cleared trades, clearing transfer trades, margin call trades and collateral exposure trades.

You have two options to define books:

- Option 1 - Define books at the clearing account level (CCP facing trades and client / house facing trades are in the same book for a given clearing account)
- Option 2 - Define books at the legal entity level (CCP facing trades and client / house facing trades are in different books for a given clearing account)

Option 1 has priority over Option 2 if both options are configured. In other words, books defined at the legal entity level will be ignored if a book is defined at the clearing account level.

[NOTE: If you choose Option 1, it has to apply to ALL clearing accounts. If you choose Option 2, it has to apply to ALL legal entities – It is not recommended to have a mix of both options]

#### 4.1.1 Option 1 – A Book per Clearing Account

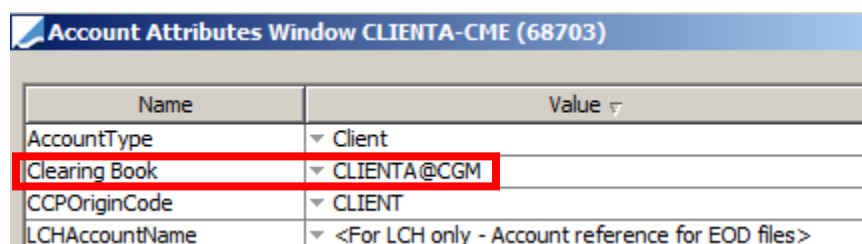
You define a book at the clearing account level.

This book contains for a given clearing account, the CCP facing trades and the client / house facing trades. So basically, this book always has a flat position.

### Sample Clearing Account Book

The clearing account book is set on the account attributes of **BOTH the CCP Facing Clearing Account and the Client Facing Clearing Account.**

[NOTE: This is the same setup, whether the clearing account is a client clearing account or a house clearing account]



| Name           | Value  |
|----------------|--|
| AccountType    | Client   |
| Clearing Book  | CLIENTA@CGM                                      |
| CCPOriginCode  | CLIENT   |
| LCHAccountName | <For LCH only - Account reference for EOD files> |

From the Calypso Navigator, navigate to **Configuration > Books & Bundles > Trading Book** to define books.

Book Window - Version -0 [130007SP2/LAPTOP\_RELEASE/calypso\_user] (User: calypso...)

View Help

Book Id: 68694

Name: CLIENTA@CGM

Activity: CLEARING

Accounting Link: TRADING

Legal Entity: CGM LLC

Location: US/Pacific

End Of Day: 23 Hour 59 Min

Base Ccy: USD

Attributes:

| Name              | Value  |
|-------------------|--------|
| PricingEnv        | FROMDB |
| BookType          |        |
| AccAdjustmentDays |        |
| AccDateRule       |        |
| AccReversalRule   |        |
| BookBundle        |        |
| CAMoneyDiff Book  |        |
| CMF_ID            |        |
| CTC Compounding   |        |
| CTC Consolidator  |        |
| CTC Offset        |        |

It is not required to set any book attribute.

### 4.1.2 Option 2 – A Book per Legal Entity

For the clearing member, you need to have a book to store the trades related to the house activity, and a book to store the trades related to the client activity. When trades are imported, the book will be assigned in the following order of priority:

- The book set at the Clearing House level, if any.
- NOTE:** You can only set the book at the CCP level if you have defined only one clearing member in your system.
- The book set at the clearing member level, if any.
- The book set in the User Defaults.

For the clients, you can have a book per client, or a book across multiple clients. This choice should mostly be driven by P&L reporting requirements, since the P&L is computed at the book level. When trades are imported, the book will be assigned in the following order of priority:

- The book set at the client level, if any.
- The book set in the User Defaults.

### Sample Clearing Member Books

The clearing member books are set on the clearing house OR the clearing member attributes.

| Id   | Processing Org | Legal Entity | Role | Attribute Type            | Attribute Value |
|------|----------------|--------------|------|---------------------------|-----------------|
| 1110 | ALL            | CGM LLC      | ALL  | Minimum Other Requirement | -200            |
| 1109 | ALL            | CGM LLC      | ALL  | Minimum CFTC Requirement  | 5000000.2       |
| 1602 | ALL            | CGM LLC      | ALL  | LCHFirmId                 | CC1             |
| 1107 | ALL            | CGM LLC      | ALL  | House Clearing Book       | CGM-HOUSE       |
| 1108 | ALL            | CGM LLC      | ALL  | Client Clearing Book      | CGM-CLIENT      |
| 1106 | ALL            | CGM LLC      | ALL  | CMF_ID                    | 000             |
| 1601 | ALL            | CGM LLC      | ALL  | CMEFirmId                 | 843             |

#### Clearing Member House Clearing Book

The clearing member House Clearing book holds trades for the clearing member's house trades.

From the Calypso Navigator, navigate to **Configuration > Books & Bundles > Trading Book** to define books.

Book Window - Version -2 [130003SP1/cft-staging-130003sp1/calypso\_user]

View Help

Book Id: 1125

Name: CGM-HOUSE

Activity: CLEARING

Accounting Link: OTC

Legal Entity: CGM LLC

Location: America/Dawson\_Creek

End Of Day: 24 Hour 0 Min

Base Ccy: USD

Holidays: NYC

Comment:

Attributes: ...

| Name        | Value  |
|-------------|--------|
| BookType    | House  |
| Pricing Env | FROMDB |

Set the following book attributes:

- **OPTIONAL** - BookType = House (optional attribute to identify House activity in filters)

#### Clearing Member Client Clearing Book

The clearing member Client Clearing book holds the mirror trades of the clearing member's clients at the clearing house.

From the Calypso Navigator, navigate to **Configuration > Books & Bundles > Trading Book** to define books.

Book Window - Version -2 [130003SP1/cft-staging-130003sp1/calypso\_user]

View Help

Book Id: 1126

Name: CGM-CLIENT

Activity: CLEARING

Accounting Link: OTC

Legal Entity: CGM LLC

Location: America/Dawson\_Creek

End Of Day: 24 Hour 0 Min

Base Ccy: USD

Holidays: NYC

Comment:

Attributes: ...

| Name        | Value  |
|-------------|--------|
| BookType    | Client |
| Pricing Env | FROMDB |

Set the following book attributes:

- **OPTIONAL** - BookType = Client (optional attribute to identify House activity in filters)

## Sample Client Book

A book should be defined for client trades at the clearing member. It can be a dedicated book, or a book shared across multiple clients.

| Id    | Processing Org | Legal Entity | Role | Attribute Type            | Attribute Value |
|-------|----------------|--------------|------|---------------------------|-----------------|
| 63697 | CGM LLC        | CLIENTA      | ALL  | Clearing Book             | CLIENTA@CGM LLC |
| 63698 | CGM LLC        | CLIENTA      | ALL  | ClearingReportingCurrency | USD             |

From the Calypso Navigator, navigate to **Configuration > Books & Bundles > Trading Book** to define books.

It is not required to set any book attribute.

## Sample Internal Counterparty Book

From the Calypso Navigator, navigate to **Configuration > Books & Bundles > Trading Book** to define books.

It is not required to set any book attribute.

- **OPTIONAL** - BookType = House (optional attribute to identify House activity in filters)
- Pricing Env = <Pricing environment name>

## 4.2 Defining the Clearing Houses (CCPs)

A clearing house only requires the definition of a legal entity and its contact information.

From the Calypso Navigator, navigate to **Configuration > Legal Data > Entities** to define legal entities.

Each clearing house must be defined with at least the following roles: "CCP", "Agent" and "CounterParty".

CCP short names must be added to the domain "mccAdditionalField.CCP".

[NOTE: The Client role is also required if you plan to define Variation Margin contracts for CCP facing contracts – Optional – See [Clearing Member Contracts – CCP Facing Contracts](#) for details]

### Trade Classification

You can set the legal entity attribute VMClassification to CTM (Collateralized-To-Market) or STM (Settled-To-Market). The trade keyword VMClassification will default to that value when importing EOD files to generate Clearing Transfer trades. If it is not set, the value will be retrieved from the import files, and if there is no value in the import files, it will default to STM.

Recommended setup per CCP:

- CME: VMClassification legal entity attribute = STM
- LCH: VMClassification legal entity attribute = Not set (it will be retrieved from report 91).
- For the other CCPs, do not set the VMClassification legal entity attribute - It will default to STM.

You can setup an MCC contract for each trade classification using the attribute VM\_CLASSIFICATION, set to CTM or STM.

This applies to both Client and CCP facing Clearing Transfer trades.

### CME

Legal Entity- Version - 7 [140020SP2/LAPTOP\_REL14/calypso\_user]

Utilities Help

Short Name: CME

Full Name: Chicago Mercantile Exchange

Parent: ...

Country: UNITED STATES ...

Inactive As From: ... User: calypso\_user

Entered Date: 10/17/2005 3:38:08 PM

External Ref: ...

Holidays: NYC ...

Status: Enabled

Role(s): Agent, CounterParty, CCP



Disabled Role(s):

Financial (selected), Non Financial

Click **Contact** to define at least one contact.

Click **Attributes** to set the following legal entity attributes:

| Id   | Processing Org | Legal Entity | Role | Attribute Type       | Attribute Value |
|------|----------------|--------------|------|----------------------|-----------------|
| 1002 | ALL            | CME          | ALL  | CME_CPTY             | CME             |
| 1003 | ALL            | CME          | ALL  | Client Clearing Book | CGM-CME-CLIENT  |
| 1004 | ALL            | CME          | ALL  | House Clearing Book  | CGM-CME-HOUSE   |
| 1005 | ALL            | CME          | ALL  | SwapswireParticipant | XCMEU54FXXX     |

- **OPTIONAL** - "Client Clearing Book" = <Book name for the Clearing Member's client trades>  
 See [Defining Books](#) for details – The book can be defined at the Clearing Member or Clearing Account level instead.
- **OPTIONAL** - "House Clearing Book" = <Book name for the Clearing Member's house trades>  
 See [Defining Books](#) for details – The book can be defined at the Clearing Member or Clearing Account level instead.
- "CME\_CPTY" = CME

## LCH

Legal Entity- Version - 0 [140020SP2/LAPTOP\_REL14/calypso\_user]

Utilities Help

Short Name: LCH

Full Name: London Clearing House

Parent: ...

Country: UNITED STATES

Inactive As From: ... User: calypso\_user

Entered Date: 12/18/2013 5:38:59 PM

External Ref: ...

Holidays: ...

Status: Enabled

Role(s): Agent, CounterParty, CCP



Disabled Role(s): ...

☒ Financial ☐ Non Financial

Click **Contact** to define at least one contact.

Click **Attributes** to set the following legal entity attributes:

| Id   | Processing Org | Legal Entity | Role | Attribute Type       | Attribute Value |
|------|----------------|--------------|------|----------------------|-----------------|
| 1007 | ALL            | LCH          | ALL  | SwapswireParticipant | CALYPSOXXX      |
| 1010 | ALL            | LCH          | ALL  | LCH_CPTY             | LCH             |
| 1008 | ALL            | LCH          | ALL  | House Clearing Book  | CGM-HOUSE       |
| 1009 | ALL            | LCH          | ALL  | Client Clearing Book | CGM-CLIENT      |

- **OPTIONAL** - "Client Clearing Book" = <Book name for the Clearing Member's client trades>  
 See [Defining Books](#) for details – The book can be defined at the Clearing Member or Clearing Account level instead.
- **OPTIONAL** - "House Clearing Book" = <Book name for the Clearing Member's house trades>  
 See [Defining Books](#) for details – The book can be defined at the Clearing Member or Clearing Account level instead.
- "LCH\_CPTY" = LCH

## EUREX

**Legal Entity- Version - 5 [143005/CLEARING\_310/calypso\_user]**

Utilities Help

**Short Name** EUREX **Status** Enabled

**Full Name** Eurex **Role(s)** Agent  
CCP  
Clearer  
CounterParty  
MarketPlace

**Parent** ...

**Country** GERMANY ...

**Inactive As From** **User** calypso\_user

**Entered Date** 10/03/2006 12:17:12 AM ☐ Triparty

**External Ref**

**Holidays** XEUR ... ☒ Financial ☐ Non Financial

| Id     | Processing Org | Legal Entity | Role | Attribute Type   | Attribute Value |
|--------|----------------|--------------|------|------------------|-----------------|
| 271696 | ALL            | EUREX        | ALL  | ClearingHouse    | EUREX           |
| 287698 | ALL            | EUREX        | ALL  | EurexParticipant | ANONYMOUS       |

## ICE CLEAR EUROPE

**Legal Entity- Version - 1 [143005/CLEARING\_310/calypso\_user]**

Utilities Help

**Short Name** ICE CLEAR EUROPE **Status** Enabled

**Full Name** ICE CLEAR EUROPE **Role(s)** Agent  
CCP  
Clearer  
CounterParty

**Parent** ...

**Country** UNITED KINGDOM ...

**Inactive As From** **User** max

**Entered Date** 09/05/2013 6:42:58 AM ☐ Triparty

**External Ref**

**Holidays** LON ... ☒ Financial ☐ Non Financial

| Id     | Processing Org | Legal Entity     | Role | Attribute Type       | Attribute Value |
|--------|----------------|------------------|------|----------------------|-----------------|
| 145698 | ALL            | ICE CLEAR EUROPE | ALL  | Client Clearing Book | CALYPUK-C       |
| 145699 | ALL            | ICE CLEAR EUROPE | ALL  | House Clearing Book  | CALYPUK-H       |
| 145700 | ALL            | ICE CLEAR EUROPE | ALL  | ICELinkParticipant   | iceclear        |

Books are optional.

## ICE CLEAR CREDIT



**Legal Entity- Version - 1 [143005/CLEARING\_310/calypso\_user]**

Utilities Help

**Short Name** ICE CLEAR CREDIT **Status** Enabled

**Full Name** ICE CLEAR CREDIT **Role(s)** Agent  
CCP  
CounterParty  
ExtCounterParty  
MarketPlace

**Parent** ...

**Country** UNITED STATES ...

**Inactive As From** ... **User** qliu

**Entered Date** 10/14/2013 1:52:51 PM ☐ Triparty Sub

**External Ref** ...

**Holidays** NYC ... ☒ Financial ☐ Non Financial

| Id     | Processing Org | Legal Entity     | Role | Attribute Type       | Attribute Value |
|--------|----------------|------------------|------|----------------------|-----------------|
| 255197 | ALL            | ICE CLEAR CREDIT | ALL  | ICELinkParticipant   | icetrust        |
| 255198 | ALL            | ICE CLEAR CREDIT | ALL  | Client Clearing Book | CALYPUS-C       |
| 255199 | ALL            | ICE CLEAR CREDIT | ALL  | House Clearing Book  | CALYPUS-H       |

Books are optional.

### 4.3 Defining the Agent Bank

The agent bank for all clearing activity is HARRIS BANK.

It should be defined with the following roles: "Agent" and CounterParty".

From the Calypso Navigator, navigate to **Configuration > Legal Data > Entities** to define legal entities.

**Legal Entity- Version - 1 [130003SP1/cft-staging-130003sp1/calypso\_user]**

Utilities Help

**Short Name** HARRIS BANK **Status** Enabled

**Full Name** Harris Bank **Role(s)** Agent  
CounterParty

**Parent** ...

**Country** UNITED STATES ...

**Inactive As From** ... **User** calypso\_user

**Entered Date** 06/18/2012 9:01:38 PM

**External Ref** ... **Disabled Role(s)**

**Holidays** NYC ... ☒ Financial ☐ Non Financial

Click **Contact** to define at least one contact.

### 4.4 Defining the Clearing Member

#### Clearing Member Setup Requirements

A clearing member requires the following settings:

- A clearing member legal entity
- **OPTIONAL** - A House book to represent CCP-facing house activity.
- **OPTIONAL** - A Client Book to represent CCP-facing client activity.
- A Nostro account for each currency that represents the cash position of the clearing member at the agent.
- A Dummy Client account at the clearing member for payments between the clearing member and the client.

#### 4.4.1 Clearing Member Legal Entity

The clearing member should be defined with at least the following roles: "ProcessingOrg", "Agent", "CounterParty". From the Calypso Navigator, navigate to **Configuration > Legal Data > Entities** to define legal entities.

Click **Contact** to define at least one contact.

Click **Attributes** to set the following legal entity attributes:

| Id    | Processing Org | Legal Entity | Role | Attribute Type             | Attribute Value |
|-------|----------------|--------------|------|----------------------------|-----------------|
| 67684 | ALL            | CGM LLC      | ALL  | CMEFirmId                  | 843             |
| 73681 | ALL            | CGM LLC      | ALL  | CMEProcessingOrgId         | 843             |
| 81681 | ALL            | CGM LLC      | ALL  | Clearing Business Calendar | CCP             |
| 67690 | ALL            | CGM LLC      | ALL  | Client Clearing Book       | CGM-CLIENT      |
| 67689 | ALL            | CGM LLC      | ALL  | House Clearing Book        | CGM-HOUSE       |
| 67683 | ALL            | CGM LLC      | ALL  | LCHFirmId                  | CC1             |
| 74682 | ALL            | CGM LLC      | ALL  | Minimum CFTC Requirement   | 5000000.2       |
| 74683 | ALL            | CGM LLC      | ALL  | Minimum Other Requirement  | -200            |




- **OPTIONAL** - "House Clearing Book" = <Book name for house trades>  
 See [Defining Books](#) for details – The book can be defined at the Clearing House or Clearing Account level instead.
- **OPTIONAL** - "Client Clearing Book" = <Book name for client trades>  
 See [Defining Books](#) for details – The book can be defined at the Clearing House or Clearing Account level instead.
- "<CCP><Clearing Service>FirmId" = <ID given by CCP to identify the clearing member>  
 For example: CMEIRDFirmId, CMENDFFirmId, LCHIRDFirmId - You need one FirmId for each CCP and each clearing service that you use.  
 A clearing service is a combination of the CCPs defined in domain "mccAdditionalField.CCP" and the product types defined in domain "mccAdditionalField.PRODUCT\_TYPE".

If you do not need to specify the FirmId by clearing service, you can use the attribute <CCP>FirmId instead.

For example: CMEFirmId, LCHFirmId.

- **OPTIONAL** – "<CCP>CVRSenderCode" = <ID given by the CCP to identify the Collateral Valuation Report (CVR) sender>

If it is populated, it will be used to identify the CVR sender, otherwise the legal entity attribute "<CCP><Clearing Service>FirmId" or "<CCP>FirmId" will be used.

- "LCHRemoteFolderStructure" = <LCH folder option: Select "Static" or "Dynamic">  
LCH offers two folder options for storing the EOD files: "Static" stores all reports under the SwapClear folder, and "Dynamic" stores the reports per date folder under the SwapClear folder.
- "Minimum CFTC Requirement" - Used for regulatory reporting  
 Refer to the *Calypso Clearing Member User Guide* for information on regulatory reporting.
- "Minimum Other Requirement" - Used for regulatory reporting  
 Refer to the *Calypso Clearing Member User Guide* for information on regulatory reporting.
- **OPTIONAL** – "Clearing Business Calendar" = <Holiday calendar>  
Used to represent the calendar on which the clearing member will run EOD processes, and generate statements for the clients. If any CCP is open, the clearing member will be running EOD processes. If this attribute is not set, the calendar specified in the clearing member definition is used instead.  
 Refer to the *Calypso Clearing Member User Guide* for details.

## 4.4.2 Clearing Member Accounts

### Clearing Member - Nostro Account @ Agent

Cash accounts of the clearing member at the settlement bank (agent) for cash settlement and margin call trades.

You need one nostro account for the House account and another one for Client segregated accounts.

From the Calypso Navigator, navigate to **Configuration > Accounting > Accounts** to define accounts.

Define an automatic SETTLE account with:

- Processing Org = <Clearing member name>
- Legal Entity = <Agent name>
- Role = Agent

Example of House Nostro Account.

Accounts Definition - Authorization mode OFF CALYPUS HOUSE / 141252 - version 2

Account Utilities Reports Process Help

Account Statements Attributes **Interests** Limits Consolidation Translation/Revaluation Browse

Account Name CALYPUS HOUSE

Processing Org CALYPUS Ccy AUTO Id 141252

Type SETTLE ☐ Security ☒ Auto/Template Acc

External Name  Interface Rule Aggregate

Description CALYPUS HOUSE

Legal Entity (F2) BANK OF AMERICA Role Agent

Creation Date 6/14/13 6:17:50 PM ☒ Create by Acc Engine only Properties/Attributes (F4)

Closing Account  Last Closing Date

Parent Account  Parent Id 0

| Order | Attribute | Value                |
|-------|-----------|----------------------|
| 1     | Constant  | CALYPUS HOUSE NOSTRO |
| 2     | Constant  | -                    |
| 3     | XferCcy   |                      |

Example of Client Segregated Nostro Account.

Accounts Definition - Authorization mode OFF CALYPUS SEG-CLIENT / 141251 - version 4

Account Utilities Reports Process Help

Account Statements Attributes **Interests** Limits Consolidation Translation/Revaluation Browse

Account Name CALYPUS SEG-CLIENT

Processing Org CALYPUS Ccy AUTO Id 141251

Type SETTLE ☐ Security ☒ Auto/Template Acc

External Name  Interface Rule Aggregate

Description CALYPUS SEG-CLIENT

Legal Entity (F2) BANK OF AMERICA Role Agent

Creation Date 6/14/13 6:07:38 PM ☐ Create by Acc Engine only Properties/Attributes (F4)

Closing Account  Last Closing Date

Parent Account  Parent Id 0

| Order | Attribute | Value              |
|-------|-----------|--------------------|
| 1     | Constant  | CALYPUS SEG-CLIENT |
| 2     | Constant  | -                  |
| 3     | XferCcy   |                    |

Click **Properties/Attributes (F4)** to set account attributes as needed.

- Attribute "SequesteredAccount" = Bank

## Clearing Member – Nostro Dummy Account @ Agent

This account will be used for swap interest.

Accounts Definition - Authorization mode OFF CALYPUS DUMMY / 141260 - version 1

Account Utilities Reports Process Help

Account Statements Attributes Interests Limits Consolidation Translation/Revaluation Browse

Account Name: CALYPUS DUMMY

Processing Org: CALYPUS Ccy: AUTO Id: 141260

Type: SETTLE Security: ☐ Auto/Template Acc: ☒

External Name: Interface Rule: Aggregate

Description: CALYPUS DUMMY

Legal Entity (F2): BANK OF AMERICA Role: Agent

Creation Date: 6/14/13 11:53:52 PM Create by Acc Engine only: ☒ Properties/Attributes (F4)

Closing Account: Last Closing Date:

Parent Account: Parent Id: 0

| Order | Attribute | Value           |
|-------|-----------|-----------------|
| 1     | Constant  | CALYPUS - DUMMY |
| 2     | Constant  | -               |
| 3     | XferCcy   |                 |

## 4.5 On-Boarding an Individual Client/Affiliate

### Client Setup Requirements

On-boarding a client requires the following settings:

- A Client legal entity.
- A book that contains client trades (defined at Client legal entity level or Client Account level)
- A Position account at the clearing house for each CCP / service (e.g. CME/NDF).
- A pair of Clearing accounts at the clearing member for each CCP/ service. One account configured with the client's LE and a second one, also known as mirror account where the Legal Entity is the CCP. Both accounts are linked through the Description field that contains the account id of the other account. Both accounts must contain the CCP position account Id in the External Name field.
- Internal Cash accounts for each currency.
- Dummy accounts for each currency.

It is recommended to use the Onboarding Manager as it creates all the required data at once, including the settlement and delivery instructions and the margin call contracts.

See [Settlement and Delivery Instructions](#) for details on SDI setup requirements.

See [Margin Calls Setup](#) for details on Margin Call Contracts setup requirements.

## 4.5.1 Onboarding Manager

You need to add a menu item for the Onboarding Manager for menu action `onboarding.OnboardingWindow`.

It brings up the Clearing Client Onboarding window. It allows defining a client based on a client template, previewing the data that will be created, and saving the required data: legal entity, book, accounts, interest bearing configurations, settlement and delivery instructions, and margin call contracts.

### Access Permissions

The following access permission functions apply to the Onboarding Manager.

- `CreateModifyOnboardingTemplate` – Permission to create and modify onboarding templates. You can modify onboarding templates provided you have read-write access to the onboarding templates.
- `CreateOnboardingObjects` – Permission to save the actual objects created by the Onboarding Manager.
- `DeleteOnboardingTemplate` – Permission to remove onboarding templates provided you have read-write access to the onboarding templates.
- `AuthorizeOnboardingCreation` – Permission to authorize client onboarding data in Authorization mode.

You can also assign read-write access or read-only access to onboarding templates under the “Onboarding Templates” category in the Groups panel of the Access Permissions window. Make sure that `OnboardingTemplates` is defined in the domain “`classAccessMode`”.

### Authorization Mode

You can enable the Authorization mode for the Onboarding Manager.

Add “`ClientOnboardingData`” to the domain “`classAuthMode`”. If the Authorization mode is enabled, new and modified client data will have to be authorized before being available.

You can authorize the data in the Onboarding Manager using **File > Load Pending Modifications**. Accept or reject the data as applicable. This is an all-or-nothing authorization.

### Static Data Filters

You need to create static data filters for the transfer types.

Sample `XferType_NOT_Int/Upfront_Fee`

The screenshot shows a window titled "Static Data Filter Window [140022SP2/LAPTOP\_REL14/calypso\_user]". It contains the following fields:

- Name:** XferType\_NOT\_Int/Upfront\_Fee
- Comment:** (empty)
- Groups:** ANY

Below these fields is a table with the following structure:

| Attribute | Criteria | Filter Value(s)                                     |
|-----------|----------|---|
| Xfer Type | NOT_IN   | COMMISSION,FEE,INTEREST,TERMINATION_FEE,UPFRONT_FEE |

Buttons for "Add" and "Att" are visible next to the Name field, and a "..." button is next to the Groups field.

Sample `XferType_Interest/Upfront_Fee`

Static Data Filter Window [140022SP2/LAPTOP\_REL14/calypso\_user]

Name: XferType\_Interest/Upfront\_Fee Att

Comment:

Groups: ANY ...

| Attribute | Criteria | Filter Value(s)                                     |
|-----------|----------|---|
| Xfer Type | IN       | COMMISSION,FEE,INTEREST,TERMINATION_FEE,UPFRONT_FEE |

## Margin Call Contract Type

In order to populate the contract type properly, you need to add the following values to the domain "legalAgreementType":

- Client – This value will be set as the Contract Type for client facing margin call contracts.
- Client@<CCP>, such as Client@CME and Client@LCH – This value will be set as the Contract Type for CCP facing margin call contracts.

## Client Template

A template is provided out-of-the-box "CLIENT\_default". It contains the basic required data. They are described below.

You can choose **Manage Templates > Configure** to save the out-of-the-box template as a new template, in order to modify it.

You can add values for the following types of information:

- Legal Entity Roles
- Legal Entity Attributes
- Book Attributes
- Account Properties
- Account Attributes for Auto Accounts

Choose **File > Save** or **File > Save As New** to save your changes if any.

### Default Client Template Values

| Fields                  |                           | Default Value                             |
|-------------------------|---------------------------|---|
| Processing Org          |                           | <not set>                                 |
| Legal Entity            | Roles                     | Client, CounterParty, Statement Recipient |
|                         | Financial                 | true                                      |
|                         | Status                    | Disabled                                  |
|                         | Country                   | <not set>                                 |
|                         | Holidays                  | <not set>                                 |
| Legal Entity Attributes | ClearingReportingCurrency | <not set>                                 |
| Clearing Book           | Book Name                 | <ClientName>@<POName>                     |

| Fields                      |                         | Default Value                                    |
|-----------------------------|-------------------------|--|
|                             | Activity                | Clearing   |
|                             | Accounting Link         | <not set>  |
|                             | Processing Org          | <not set>  |
|                             | Location                | <not set>  |
|                             | End of Day              | <not set>  |
|                             | Base Ccy                | <not set>  |
|                             | Holidays                | <not set>  |
|                             | Comment                 | <not set>  |
| Book Attributes             | Pricing Env             | FROMDB   |
|                             | BookType                | Client   |
| Book Permissions            | Currency                | [__ALL__]  |
|                             | Currency Pair           | [__ALL__]  |
|                             | Product                 | [__ALL__]  |
| Clearing Account            | Account Name            | <ClientName>@FCM_<POName>_<CCPName><ServiceName> |
|                             | Processing Org          | <not set>  |
|                             | Call Account            | false  |
|                             | Type                    | SETTLE   |
|                             | Security                | false  |
|                             | Currency                | AUTO   |
|                             | Auto/Template Acc       | true   |
|                             | Interface Rule          | Aggregate  |
|                             | Role                    | CounterParty                                     |
|                             | Create by Acc Only      | true   |
|                             | Balance                 | true   |
|                             | Frequency               | DLY  |
|                             | Day                     | 1  |
|                             | Rule                    | <not set>  |
|                             | Roll                    | END_MONTH  |
|                             | Billing                 | true   |
|                             | Interest Bearing        | false  |
| Clearing Account Properties | Clearing Book           | <ClientName>@<POName>                            |
|                             | Description             | Clearing   |
|                             | ClearingCashAccount     | false  |
|                             | CCPOriginCode           | CLIENT   |
|                             | AccountType             | Client   |
| Clearing Account Attributes | Auto account attributes | <not set>  |



| Fields                             |                           | Default Value                                    |
|------------------------------------|---------------------------|--|
| Clearing Mirror Account            | Account Name              | <ClientName>@CCP_<POName>_<CCPName><ServiceName> |
|                                    | Processing Org            | <not set>  |
|                                    | Call Account              | false  |
|                                    | Type                      | SETTLE   |
|                                    | Security                  | false  |
|                                    | Currency                  | AUTO   |
|                                    | Auto/Template Acc         | true   |
|                                    | Interface Rule            | Aggregate  |
|                                    | Role                      | Agent  |
|                                    | Create by Acc Engine Only | true   |
|                                    | Balance                   | true   |
|                                    | Frequency                 | DLY  |
|                                    | Day                       | 1  |
|                                    | Rule                      | <not set>  |
|                                    | Roll                      | END_MONTH  |
|                                    | Billing                   | true   |
|                                    | Interest Bearing          | false  |
| Clearing Mirror Account Properties | Clearing Book             | <ClientName>@<POName>                            |
|                                    | Description               | Clearing   |
|                                    | ClearingCashAccount       | false  |
|                                    | CCPOriginCode             | CLIENT   |
|                                    | AccountType               | Client   |
| Clearing Mirror Account Attributes | Auto account attributes   | <not set>  |
| Cash Account                       | Account Name              | <ClientName>_<Currency>_CASH@<POName>            |
|                                    | Processing Org            | <not set>  |
|                                    | Call Account              | false  |
|                                    | Type                      | SETTLE   |
|                                    | Security                  | false  |
|                                    | Currency                  | AUTO   |
|                                    | Auto/Template Acc         | true   |
|                                    | Interface Rule            | Aggregate  |
|                                    | Description               | <not set>  |
|                                    | Role                      | CounterParty                                     |
|                                    | Create by Acc Only        | false  |
|                                    | Balance                   | true   |
|                                    | Frequency                 | DLY  |
|                                    | Day                       | 1  |

| Fields                        |                         | Default Value  |
|-------------------------------|-------------------------|--|
|                               | Rule                    | <not set>  |
|                               | Roll                    | END_MONTH  |
|                               | Billing                 | false  |
|                               | Interest Bearing        | true   |
| Cash Account Interest Bearing | Interest Config         | <not set>  |
|                               | Interests Valid From    | <not set>  |
|                               | Interest Valid To       | <not set>  |
|                               | Interests Type          | <not set>  |
|                               | Interests Penalty       | false  |
| Cash Account Properites       | Description             | Cash   |
|                               | ClearingCashAccount     | true   |
|                               | CCPOriginCode           | CLIENT   |
|                               | AccountType             | Client   |
| Cash Account Attributes       | Auto account attributes | <not set>  |
| Direct SDI                    | Role                    | CounterParty   |
|                               | Currency                | ANY  |
|                               | Pay/Receive             | BOTH   |
|                               | Cash/Security           | BOTH   |
|                               | Contact                 | Default  |
|                               | Processing Org          | ALL  |
|                               | Products                | ANY  |
|                               | SD Filter               | <not set> Recommended: XferType_NOT_Int/Upfront_Fee  |
|                               | Preferred               | true   |
|                               | Priority                | 0  |
|                               | Method                  | Direct   |
|                               | Trade Counterparty      | ALL  |
|                               | Is Direct               | true   |
|                               | DDA                     | <ClientName>_AUTO_CASH@<POName>                      |
| Internal SDI                  | Role                    | CounterParty   |
|                               | Currency                | ANY  |
|                               | Pay/Receive             | BOTH   |
|                               | Cash/Security           | BOTH   |
|                               | Contact                 | Default  |
|                               | Processing Org          | ALL  |
|                               | Products                | G.Clearing Products                                  |
|                               | SD Filter               | <not set> Recommended: XferType_Interest/Upfront_Fee |
|                               | Preferred               | true   |

| Fields |                         | Default Value                       |
|--------|-------------------------|-------------------------------------|
|        | Priority                | 0                                   |
|        | Method                  | Internal                            |
|        | Trade Counterparty      | ALL                                 |
|        | Is Direct               | false                               |
|        | G/L Account             | <not set>                           |
|        | DDA                     | <not set>                           |
|        | A/C                     | Dummy Account                       |
|        | Agent                   | <not set>                           |
|        | Agent Contact           | Default                             |
|        | Agent Identifier        | <not set>                           |
|        | Sub-Account             | <not set>                           |
|        | Msg To Agent            | <not set>                           |
| VM     | Margining Scenario      | Single_Ccy – See below for details. |
|        | Legal Entity Role       | Client                              |
|        | Has Clearing Service    | <not set> – See below for details.  |
|        | Currencies              | [ANY]                               |
|        | Start Date              | <not set>                           |
|        | EOD Pricing Environment | <not set>                           |
|        | ITD Pricing Environment | <not set>                           |
|        | Position Type           | THEORETICAL                         |
|        | Position Date           | POSITION_DATE_VALUE                 |
|        | Method                  | Standard                            |
|        | Currency                | <not set>                           |
|        | Cash                    | 0                                   |
|        | Book                    | <ClientName>@<POName>               |
|        | Base Currency           | USD                                 |
|        | Currency                | <not set>                           |
|        | Adjustment Currency     | <not set>                           |
| IM     | Margining Scenario      | OSA – See below for details.        |
|        | Legal Entity Role       | Client                              |
|        | Collateral Type         | BOTH                                |
|        | Start Date              | <not set>                           |
|        | EOD Pricing Environment | <not set>                           |
|        | ITD Pricing Environment | <not set>                           |
|        | Position Type           | THEORETICAL                         |
|        | Position Date           | POSITION_DATE_VALUE                 |
|        | Method                  | Standard                            |
|        | Currency                | <not set>                           |

| Fields        | Default Value         |
|---------------|-----------------------|
| Cash          | 0                     |
| ANY           | 0                     |
| Corporate     | 0                     |
| Government    | 0                     |
| Tbill         | 0                     |
| Book          | <ClientName>@<POName> |
| Base Currency | <not set>             |

[NOTE: If the user does not select a contact in the SDI section of the template, the user will need to define a contact in the Client Information Panel. If there is a list of two or more contacts in the Client Information Panel, the first contact in the list is used as the default contact for all SDIs]

### ***VM Contract – Margining Scenario***

You can select the following scenarios:

- Single\_Ccy - There is one VM Margin Call Contract per Client.
- Multi\_Ccy - There is one VM Margin Call Contract per Client and per currency (regardless of CCP and product type).
- Hybrid – You may have multiple VM Margin Call Contracts per Client and per currency on an ad-hoc basis. The currencies that are not selected all belong to the same VM Margin Call Contract.

### ***VM Contract – Has Clearing Service***

If “Has Clearing Service” is checked, and only one clearing service is selected for the client, the clearing service details are set in the CCP and Product Type additional info on the VM contract.

These fields have to be manually populated on the VM contract otherwise.

### ***IM Contract - Margining Scenario***

You can select the following scenarios:

- OSA - There is one Margin Call Contract per CCP and product type that handles initial margins for all clients for CCP facing contracts. If this contract already exists, it is not created again when a new client is added.
- ISA - For SwapClear Members of LCH, it is also possible to have one Margin Call Contract per CCP, client, and product type that handles initial margins for CCP facing contracts.

➤ See [Margin Calls Setup](#) for complete details on Margin Call Contracts setup requirements.

## **Client Onboarding**

Select a client template, and fill in the client information described below.

You can add more values for the following types of information, as needed:

- Contacts
- Clearing Houses
- Legal Entity Attributes
- Book Attributes
- Account Properties
- Account Attributes for Auto Accounts

The Onboarding Preview displays all the data that will be created.

The screenshot displays the 'Client Onboarding Tool' window. It is divided into two main panels: 'Client Information' on the left and 'Onboarding Preview' on the right.

**Client Information Panel:**

- Template:** CLIENT\_default
- Processing Org:** CALYPUS (dropdown menu)
- Legal Entity:** (expandable section)
- Contact Details:** (expandable section with an 'Add' button)
- Clearing Houses:** OSA (dropdown menu with an 'Add' button)
- Time Zone:** America/Los\_Angeles
- Clearing Service:** CME IRD (dropdown menu with a 'Remove' button)
- Position Acco...:** AAA111
- Margin Account:** AAA222
- Trade Messa...:** trade message ref...
- Eligible Securi...:** eligible securities...
- Haircut Rule:** haircut rule...
- Eligible CCY:** [EUR, GBP, USD]
- Adjusted CCY:** adjusted currency...
- Buffer:** ☐
- Is ISA:** ☐
- Ad-Hoc:** ☐
- Unallocated Excess:** ☐
- Variation Margin:** Single\_Ccy (dropdown menu with an 'Add' button)
- VM Contract:** (dropdown menu with a 'Remove' button)
- Included Flows:** flows...
- Separate Pay...:** ☐
- Additional Attributes:** (expandable section)

**Onboarding Preview Panel:**

- Legal Entity:**
  - Short Name: CLIENTB
- Books:**
  - Book Name: CLIENTB@CALYPUS
- Contact Details:**
  - Contact Type: Default
- Accounts:**
  - Account Name: CLIENTB@FCM\_CALYPUS\_CMEIRD
  - Account Name: CLIENTB@CCP\_CALYPUS\_CMEIRD
  - Account Name: CLIENTB\_AUTO\_CASH@CALYPUS
- Settlement Delivery Instructions:**
  - Direct: Direct/CLIENTB\_AUTO\_CASH@CAL...
  - Internal: Internal
- Margin Call Contracts:**
  - IM: CLIENTB\_CME\_IRD

Then click **Save Client** if you are satisfied with the results. A summary of the results will be displayed.

### Fields Details

| Fields         |                       | Description  |
|----------------|-----------------------|--|
| Template       |                       | Select a client template. See "Client Template" for details.                                 |
| Processing Org |                       | Select the clearing member.<br><a href="#">See Defining the Clearing Member</a> for details. |
| Legal Entity   | Short Name            | Enter the client short name.   |
|                | Full Name             | Enter the client full name.  |
|                | Parent                | Select a parent as needed (optional).  |
|                | LE External Reference | Enter a client external reference as needed (optional).                                      |
|                | Country               | Select the country.  |
|                | Holidays              | Select the holiday calendars.  |
|                | Location              | Select the location timezone.  |
|                | End of Day            | Enter the EOD time. It must be an integer between 0 and 2359.                                |
|                | Reporting Currency    | Select the currency used to convert amounts for the Total column in the client statement.    |

| Fields          |                     | Description  |
|-----------------|---------------------|--|
| Contact Details | Contact Type        | Select the contact type, and define the contact details.   |
|                 | Role                |  |
|                 | Product Type        |  |
|                 | Processing Org      |  |
|                 | Last Name           |  |
|                 | First Name          |  |
|                 | Title               |  |
|                 | Address Line 1      |  |
|                 | Address Line 2      |  |
|                 | Address Line 3      |  |
|                 | City                |  |
|                 | State               |  |
|                 | Zip Code            |  |
|                 | Country             |  |
|                 | Phone               |  |
|                 | Fax                 |  |
|                 | Email               |  |
|                 | Swift               |  |
| Clearing Houses | Time Zone           | Select the timezone.   |
|                 | Clearing Service    | Click to select a service used by the client. A service is a combination of the CCPs defined in domain "mccAdditionalField.CCP" and the product types defined in domain "mccAdditionalField.PRODUCT_TYPE"  |
|                 | Position Account    | Enter the account reference at the Clearing House (position account).<br><br>NOTE: For LCH it is the account reference for trades only.  |
|                 | Margin Account      | Enter the margin account at the Clearing House for EOD files. It corresponds to the following columns of the EOD files: <ul style="list-style-type: none"> <li>CME IRSMR3 report – Column "A/C ID"</li> <li>CME Margin Summary report – Column "PBA"</li> <li>LCH Report86c report – Column "ClientAccountID"</li> </ul> |
|                 | Segregated Account  | Segregated account for SOD pass-through function – Column Account of REP00030 report.  |
|                 | Trade Message Ref   | Multiple positions accounts may share the same margin account.<br><br>For LCH only, enter the account reference at the Clearing House for Cash Settlement trades.  |
|                 | Eligible Securities | Select the static data filter that determines eligible securities.   |
|                 | Haircut Rule        | Select the haircut rule if any.  |
|                 | Eligible CCY        | Select the eligible currencies.  |
|                 | Adjusted CCY        | Select the adjustment currency.  |
|                 |                     |  |

| Fields                | Description                 |   |
|-----------------------|-----------------------------|---|
|                       | Buffer                      | Check to define a buffer to apply to the initial margin. You can enter a contractual multiplier and/or a contractual amount, and a discretionary multiplier and/or a discretionary amount.  |
|                       | Is ISA                      | Check for ISA accounts (individual client activity), or clear for ISO (clearing activity for their own individual clients).   |
|                       | Book                        | For ISA accounts, select the client activity book.  |
|                       | CCP Margin Account          | Enter the account reference of the CCP facing IM margin call contracts for ISA structures.  |
|                       | Ad-Hoc                      | Check for intraday margin calls.  |
|                       | Valuation Date Frequency    | Select the valuation frequency and valuation date time.   |
|                       | Unallocated Excess          | <p>The system allows maintaining additional collaterals held at the clearing member by a given client, but not posted at the CCP, in a specific margin call contract.</p> <p>Check to create an additional margin call contract, and enter the details of the contract.</p> |
| Variation Margin      | Currencies                  | For Multi_Ccy, select the currencies.   |
|                       | Underlying Currencies       | For Hybrid, select the currencies that follow the multi-currency scenario. The non-selected currencies apply the single-currency scenario.  |
|                       | Included Flows              | Select the flow types associated with the contract, or leave blank for ALL.   |
|                       | Separate Payment            | Check to add "Separate Settlements" sections to the Client Statement.   |
| Additional Attributes | LE Attributes               | Add attributes as needed.   |
|                       | Book Attributes             |   |
|                       | Account Properties Clearing |   |
|                       | Account Properties Cash     |   |

## 4.5.2 Client Legal Entity

**[NOTE: These are created by the Onboarding Manager]**

Each client should be defined with the following roles:

- "CounterParty" for the trades
- A role for the payment of margin call trades – We are using the role "Client" in this setup. It can also be "ExtCounterParty".
- "Statement Recipient" to generate client statements

From the Calypso Navigator, navigate to **Configuration > Legal Data > Entities** to define legal entities.

[NOTE: The client legal entity is created in status Disabled by default. You need to enable it in order to use it]

Click **Contact** to define at least one contact.

Click **Attributes** to set the following legal entity attributes:

| Id    | Processing Org | Legal Entity | Role | Attribute Type            | Attribute Value |
|-------|----------------|--------------|------|---------------------------|-----------------|
| 67199 | CGM LLC        | CLIENTB      | ALL  | ClearingReportingCurrency | USD             |

- **OPTIONAL** - "Clearing Book" = <Client book name>  
 See [Defining Books](#) for details – The book is defined by default at the Clearing Account level instead.
- "ClearingReportingCurrency" = <Currency used to convert amounts for the Total column in the client statement>
- Attribute for LSOC CVR Static Data report: CFTCID (Required - CFTC Reportable Number), LEID (Optional - US LEI of the client), OfficeCode (Optional) and CustAccountType (Optional - H for hedger, M for member, O for omnibus, or S for speculator).  
 Refer to the *Calypso Clearing Member User Guide* for information on the LSOC CVR Static Data report.

### 4.5.3 Client Accounts

[NOTE: These are created by the Onboarding Manager]

#### Client Facing Clearing Account

Mirror account of the CCP Facing Clearing Account.

You need a client account at the clearing member for each clearing house: position of the client at the clearing member per clearing house.

[NOTE: If the client has multiple accounts at the clearing house, you need to create an account for each client, for each clearing house, and for each account]

From the Calypso Navigator, navigate to **Configuration > Accounting > Accounts** to define accounts.

Define a SETTLE account with:

- Processing Org = <Clearing member name>
- LegalEntity = <Client/Affiliate name>
- Role = CounterParty
- Description = <ID of the CCP Facing Clearing Account>



- External Name = <Account reference at Clearing House (position account)>  
NOTE: For LCH it is the account reference for trades only.
- Create by Acc Engine only = Checked

Example for "MAPPING CUS01 CME-SWAP" – Repeat for each CCP/service and for each client.

Accounts Definition - Authorization mode OFF MAPPING CUS01 CME-SWAP / 141221 - version 9

Account Utilities Reports Process Help

Account Statements Attributes Interests Limits Consolidation Translation/Revaluation Browse

Account Name: MAPPING CUS01 CME-SWAP

Processing Org: CALYPUS Ccy: ANY Id: 141221

Type: SETTLE Security: ☐ Auto/Template Acc: ☒

External Name: AAAA Interface Rule: Aggregate

Description: 141250

Legal Entity (F2): CUS01 Role: CounterParty

Creation Date: 6/14/13 9:52:39 AM ☒ Create by Acc Engine only Properties/Attributes (F4)

Closing Account: Last Closing Date:

Parent Account: Parent Id: 0

☒ Balance Freq: DLY Day: 1 Rule: Roll: END\_MONTH

| Order | Attribute | Value |
|-------|-----------|-------|
| 1     | Book      |       |

It is likely that maintenance fees will be charged to the account. The "Billing" checkbox should be checked in order to compute maintenance fees on the account.

See [Clearing Fees](#) for details.

Click **Properties/Attributes (F4)** to set the account attributes.

| Name                 | Value           |
|----------------------|-----------------|
| ClearingCashAccount  | false           |
| Propagate            | false           |
| AccountType          | Client          |
| Description          | Clearing        |
| Clearing Book        | CLIENTB@CGM LLC |
| CCPOriginCode        | CLIENT          |
| InitialMarginAccount | AAA222          |

- Attribute "CCPOriginCode" = CLIENT
- Attribute "InitialMarginAccount" = <Margin account at Clearing House for EOD files>

It corresponds to the following columns of the EOD files:

- CME IRSMR3 report – Column "A/C ID"

- CME Margin Summary report – Column “PBA”
- LCH Report86c report – Column “ClientAccountID”

Multiple positions accounts may share the same margin account.

- **OPTIONAL** – Attribute “Clearing Book” = <Clearing Account book name> - It is set by the Onboarding Manager by default.  
 See [Defining Books](#) for details – The book can be defined at the Client / Clearing Member level instead.
- For LCH, attribute “LCHAccountName” = <Account reference at Clearing House for Cash Settlement trades>

## CCP Facing Clearing Account

Mirror account of the Client Facing Clearing Account

Position of the client at the clearing house. You need one account for each client and for each clearing house.

[NOTE: If the client has multiple accounts at the clearing house, you need to create an account for each client, for each clearing house, and for each account]

From the Calypso Navigator, navigate to **Configuration > Accounting > Accounts** to define accounts.

Define a SETTLE account with:

- Processing Org = <Clearing member name>
- LegalEntity = <Clearing house name>
- Role = Agent
- Description = <ID of the Client Facing Clearing Account>
- External Name = <Account reference at Clearing House (position account)>  
 NOTE: For LCH it is the account reference for trades only.
- Create by Acc Engine only = Checked

Example for “MIRROR MAPPING CUS01 LCH-SWAP” – Repeat for each CCP/service and for each client.

Accounts Definition - Authorization mode OFF MIRROR MAPPING CUS01 LCH-SWAP / 141226 - version 14

Account Utilities Reports Process Help

Account Statements Attributes Interests Limits Consolidation Translation/Revaluation Browse

Account Name: MIRROR MAPPING CUS01 LCH-SWAP

Processing Org: CALYPUS Ccy: AUTO Id: 141226

Type: SETTLE Security: ☐ Auto/Template Acc: ☒

External Name: GIGACALP\_FUND3 Interface Rule: Aggregate

Description: 141227

Legal Entity (F2): LCH Role: Agent

Creation Date: 6/14/13 10:15:59 AM Create by Acc Engine only: ☒ Properties/Attributes (F4)

Closing Account: Last Closing Date:

Parent Account: Parent Id: 0

☒ Balance Freq: DLY Day: 1 Rule: Roll: END\_MONTH

| Account | Statements | Attributes | Interests | Limits | Consolidation | Translation/Revaluation | Browse |
|---------|------------|------------|-----------|--------|---------------|-------------------------|--------|
| Order   | Attribute  |            |           |        |               | Value                   |        |
|         | 1 ▾ Book   |            |           |        |               |                         |        |

It is likely that maintenance fees will be charged to the account. The "Billing" checkbox should be checked in order to compute maintenance fees on the account.

➤ See [Clearing Fees](#) for details.

Click **Properties/Attributes (F4)** to set the account attributes.

| Name                 | Value ▾           |
|----------------------|-------------------|
| ClearingCashAccount  | ▾ false           |
| AccountType          | ▾ Client          |
| Description          | ▾ Clearing        |
| Clearing Book        | ▾ CLIENTB@CGM LLC |
| CCPOriginCode        | ▾ CLIENT          |
| InitialMarginAccount | AAA222            |

- **OPTIONAL** – Attribute "Clearing Book" = <Clearing Account book name> - It is set by the Onboarding Manager by default.  
➤ See [Defining Books](#) for details – The book can be defined at the Client / Clearing Member level instead.
- Attribute "CCPOriginCode" = CLIENT
- Attribute "InitialMarginAccount" – <Margin account at Clearing House for EOD files>  
It corresponds to the following columns of the EOD files:
  - CME IRSMR3 report – Column "A/C ID"
  - CME Margin Summary report – Column "PBA"
  - LCH Report86c report – Column "ClientAccountID"
 Multiple positions accounts may share the same margin account.
- For LCH, attribute "LCHAccountName" = <Account reference at Clearing House for Cash Settlement trades>

## Client Cash Accounts

You need a cash account for each client.

From the Calypso Navigator, navigate to **Configuration > Accounting > Accounts** to define accounts.

Define an automatic SETTLE accounts with:

- Processing Org = <Clearing member name>
- LegalEntity = <Client/Affiliate name>
- Role = CounterParty

Example for "Clearing Cash Flows CUS01" - Repeat for each client.

Accounts Definition - Authorization mode OFF Clearing Cash Flows CUS01 / 262196 - version 3

Account Utilities Reports Process Help

Account Statements Attributes **Interests** Limits Consolidation Translation/Revaluation Browse

Account Name: Clearing Cash Flows CUS01

Processing Org: CALYPUS Ccy: AUTO Id: 262196

Type: SETTLE Security: ☐ Auto/Template Acc: ☒

External Name: Interface Rule: Aggregate

Description: Clearing Cash Flows

Legal Entity (F2): CUS01 Role: CounterParty

Creation Date: 9/14/13 10:17:34 PM Create by Acc Engine only: ☐ Properties/Attributes (F4)

Closing Account: Last Closing Date:

Parent Account: Parent Id: 0

☒ Balance Freq: DLY Day: 1 Rule: Roll: END\_MONTH

| Order | Attribute | Value                     |
|-------|-----------|---------------------------|
| 1     | Constant  | Clearing Cash Flows CUS01 |
| 2     | Constant  | -                         |
| 3     | XferCcy   |                           |

It is likely that interest will be paid on the account. The "Interest Bearing" checkbox should be checked in order to compute interest on the account balance.

▶ Please refer to *Calypso Cash Management* documentation for details on setting up interest bearing.

Click **Properties/Attributes (F4)** to set the account attributes.

Account Attributes Window Clearing Cash Flows CUS01

| Name                | Value  |
|---------------------|--------|
| Propagate           | true   |
| ClearingCashAccount | True   |
| CCPOriginCode       | CLIENT |

- Attribute "CCPOriginCode" = CLIENT
- Attribute "ClearingCashAccount" = True
- Propagate = true to propagate the attributes to the child accounts

## Client - Cash DUMMY Account @ the Clearing Member

This account is used for interests that are not settled.

Accounts Definition - Authorization mode OFF DUMMY CUS01 / 141258 - version 5

Account Utilities Reports Process Help

Account Statements Attributes **Interests** Limits Consolidation Translation/Revaluation Browse

Account Name DUMMY CUS01

Processing Org CALYPUS Ccy AUTO Id 141258

Type SETTLE ... ☐ Security ☒ Auto/Template Acc

External Name Interface Rule Aggregate

Description DUMMY CUS01

Legal Entity (F2) CUS01 ... Role CounterParty

Creation Date 6/14/13 11:45:10 PM ☐ Create by Acc Engine only Properties/Attributes (F4)

Closing Account ... Last Closing Date

Parent Account ... Parent Id 0

☒ Balance Freq DLY Day 1 Rule ... Roll END\_MONTH

| Order | Attribute | Value       |
|-------|-----------|-------------|
| 1     | Constant  | DUMMY CUS01 |

## 4.6 Defining an Internal Counterparty

One or multiple internal counterparties are required for capturing house trades.

Sample internal counterparty:

Legal Entity- Version - 4 [130003SP1/cft-staging-130003sp1/calypso\_user]

Utilities Help

Short Name CTI Status Enabled

Full Name Calypso Trading Inc Role(s) Client CounterParty

Parent CGM LLC ...

Country UNITED STATES ...

Inactive As From User calypso\_user

Entered Date 06/19/2012 2:16:13 PM


External Ref Disabled Role(s)

Holidays NYC ☐ Financial ☐ Non Financial


You also need to add the role "Statement Recipient" if you want to generate client statements.

| Id   | Processing Org | Legal Entity | Role | Attribute Type | Attribute Value |
|------|----------------|--------------|------|----------------|-----------------|
| 1114 | ALL            | CTI          | ALL  | Clearing Book  | CTI@CGM         |


The setup is the same as an individual client with the following differences:

- Clearing Book = <Internal Counterparty book name>  
 See [Defining Books](#) for details – The book can be defined at the Clearing Account level instead.
- **OPTIONAL** - Book attribute BookType = House (optional attribute to identify House activity in filters)

Internal Counterparty clearing accounts: CCP Facing Clearing Account and Client Facing Clearing Account


- Account attribute CCPOriginCode = HOUSE
- **OPTIONAL** – Account attribute Clearing Book = <Clearing Account book name>  
 See [Defining Books](#) for details – The book can be defined at the Internal Counterparty / Clearing Member level instead.

Sample CCP Facing Clearing Account:

| Account   | Statements | Attributes | Interests | Limits | Consolidation | Translation/Revaluation | Browse |
|---|------------|------------|-----------|--------|---------------|-------------------------|--------|
| <div> <div>Account Name</div> <div>CTI-CME</div> <div><input type="checkbox"/> Call Account</div> </div>  |            |            |           |        |               |                         |        |
| <div> <div>Processing Org</div> <div>CGM LLC</div> <div>Ccy</div> <div>AUTO</div> <div>Id</div> <div>1133</div> </div>  |            |            |           |        |               |                         |        |
| <div> <div>Type</div> <div>SETTLE</div> <div>...</div> <div><input type="checkbox"/> Security</div> <div><input checked="" type="checkbox"/> Auto/Template Acc</div> </div>                           |            |            |           |        |               |                         |        |
| <div> <div>External Name</div> <div>4A1HOUSE</div> <div></div> <div>Interface Rule</div> <div>Aggregate</div> </div> |            |            |           |        |               |                         |        |
| <div> <div>Description</div> <div>1132</div> </div>   |            |            |           |        |               |                         |        |
| <div> <div>Legal Entity (F2)</div> <div>CME</div> <div>...</div> <div>Role</div> <div>Agent</div> </div>  |            |            |           |        |               |                         |        |

| Name                 | Value    |
|----------------------|----------|
| AccountType          | House    |
| CCPOriginCode        | HOUSE    |
| InitialMarginAccount | 4A1HOUSE |

Sample Client Facing Clearing Account @ Clearing Member:

| Account   | Statements | Attributes | Interests | Limits | Consolidation | Translation/Revaluation | Browse |
|---|------------|------------|-----------|--------|---------------|-------------------------|--------|
| <div> <div>Account Name</div> <div>CTI-CGM-CME</div> <div><input type="checkbox"/> Call Account</div> </div>  |            |            |           |        |               |                         |        |
| <div> <div>Processing Org</div> <div>CGM LLC</div> <div>Ccy</div> <div>AUTO</div> <div>Id</div> <div>1132</div> </div>  |            |            |           |        |               |                         |        |
| <div> <div>Type</div> <div>SETTLE</div> <div>...</div> <div><input type="checkbox"/> Security</div> <div><input checked="" type="checkbox"/> Auto/Template Acc</div> </div>                             |            |            |           |        |               |                         |        |
| <div> <div>External Name</div> <div>4A1HOUSE</div> <div></div> <div>Interface Rule</div> <div>Aggregate</div> </div> |            |            |           |        |               |                         |        |
| <div> <div>Description</div> <div>1133</div> </div>   |            |            |           |        |               |                         |        |
| <div> <div>Legal Entity (F2)</div> <div>CTI</div> <div>...</div> <div>Role</div> <div>CounterParty</div> </div>   |            |            |           |        |               |                         |        |

| Name                 | Value    |
|----------------------|----------|
| AccountType          | House    |
| CCPOriginCode        | HOUSE    |
| InitialMarginAccount | 4A1HOUSE |

Internal Counterparty cash account @ Clearing Member: same as Client cash account @ Clearing Member with:

- LegalEntity = <Internal Counterparty name>
- Attribute CCPOriginCode = HOUSE

## 4.7 On-Boarding an Omnibus Client

### Omnibus Client Setup Requirements

On-boarding an omnibus client requires the following settings:

- An Omnibus Client legal entity
- Child Client legal entities
- **OPTIONAL** - A book that contains client trades (dedicated book, or shared book across multiple clients)
- A Client Clearing account at the clearing house for each clearing house. This account is linked to the Client Clearing account at the clearing member through the account description.
- A Client Clearing account at the clearing member for each clearing house. This account is linked to the Client Clearing account at the clearing house through the account description.
- A Client Cash account for each currency.

#### 4.7.1 Omnibus Client Legal Entity

Each omnibus client should be defined with the role "CounterParty" for the trades, and the role "Client" for the payment of margin call trades.

You also need to add the role "Statement Recipient" if you want to generate client statements.

From the Calypso Navigator, navigate to **Configuration > Legal Data > Entities** to define legal entities.

The screenshot shows the 'Legal Entity - Version - 1' form. The title bar indicates the user is 'calypso\_user'. The form has a menu bar with 'Utilities' and 'Help'. The main area contains the following fields and controls:

- Short Name:** OMNI\_A
- Full Name:** (empty text box)
- Parent:** (empty text box with a dropdown arrow)
- Country:** NONE (dropdown menu)
- Inactive As From:** (empty text box)
- User:** calypso\_user
- Entered Date:** 10/15/2012
- Entered Time:** 6:13:43 PM
- External Ref:** (empty text box)
- Holidays:** (empty text box with a dropdown arrow)
- Status:** Enabled (dropdown menu)
- Role(s):** CounterParty, ExtCounterParty (list box)
- Disabled Role(s):** (empty list box)
- Financial:** (selected radio button)
- Non Financial:** (radio button)

Click **Contact** to define at least one contact.

#### 4.7.2 Child Client Legal Entities

Each child client should be defined with the role "CounterParty" for the trades, and have the omnibus client as a parent.

You also need to add the role "Statement Recipient" if you want to generate client statements.

From the Calypso Navigator, navigate to **Configuration > Legal Data > Entities** to define legal entities.

Legal Entity- Version - 0 [130003SP1/LAPTOP\_RELEASE/calypso\_user] (User: calypso\_user)

Utilities Help

Short Name: OMNI\_CPTY\_A1

Full Name:

Parent: OMNI\_A

Country: NONE

Inactive As From: User: calypso\_user

Entered Date: 10/15/2012 6:16:49 PM

External Ref:

Holidays:

Status: Enabled

Role(s): CounterParty

Disabled Role(s):

☒ Financial ☐ Non Financial

Legal Entity- Version - 0 [130003SP1/LAPTOP\_RELEASE/calypso\_user] (User: calypso\_user)

Utilities Help

Short Name: OMNI\_CPTY\_A2

Full Name:

Parent: OMNI\_A

Country: NONE

Inactive As From: User: calypso\_user

Entered Date: 10/15/2012 6:18:05 PM

External Ref:

Holidays:

Status: Enabled

Role(s): CounterParty


Disabled Role(s):

☒ Financial ☐ Non Financial

Click **Contact** to define at least one contact.

Click **Attributes** to set the following legal entity attributes:

| Id    | Processing Org | Legal Entity | Role | Attribute Type            | Attribute Value |
|-------|----------------|--------------|------|---------------------------|-----------------|
| 66684 | ALL            | OMNI_CPTY_A2 | ALL  | Clearing Book             | OMNI_A2         |
| 66685 | ALL            | OMNI_CPTY_A2 | ALL  | ClearingReportingCurrency | USD             |

- **OPTIONAL** - "Clearing Book" = <Client book name>  
 See [Defining Books](#) for details – The book can be defined at the Clearing Account level instead.
- "ClearingReportingCurrency" = <Currency used to convert amounts for the Total column in the Client Statement>

### 4.7.3 Omnibus Accounts

#### Child CCP Facing Clearing Account

The clearing account is at the Child Client level. Position of the client at the clearing house. You need one account for each client and for each clearing house.

Mirror account of the Child Client Facing Clearing Account.



**It is the same as an individual client clearing account with:**

- LegalEntity = <Child client name>

➤ See [CCP Facing Clearing Account](#) for setup details.

**Child Client Facing Clearing Account**

Mirror account of the Child Client Facing Clearing Account.

You need a child client account at the clearing member for each clearing house: position of the client at the clearing member per clearing house.

**It is the same as an individual client clearing account with:**

- LegalEntity = <Child client name>

➤ See [Client Facing Clearing Account](#) for setup details.

**Child Client Cash Accounts**

You need a cash account for each child client and for each currency.

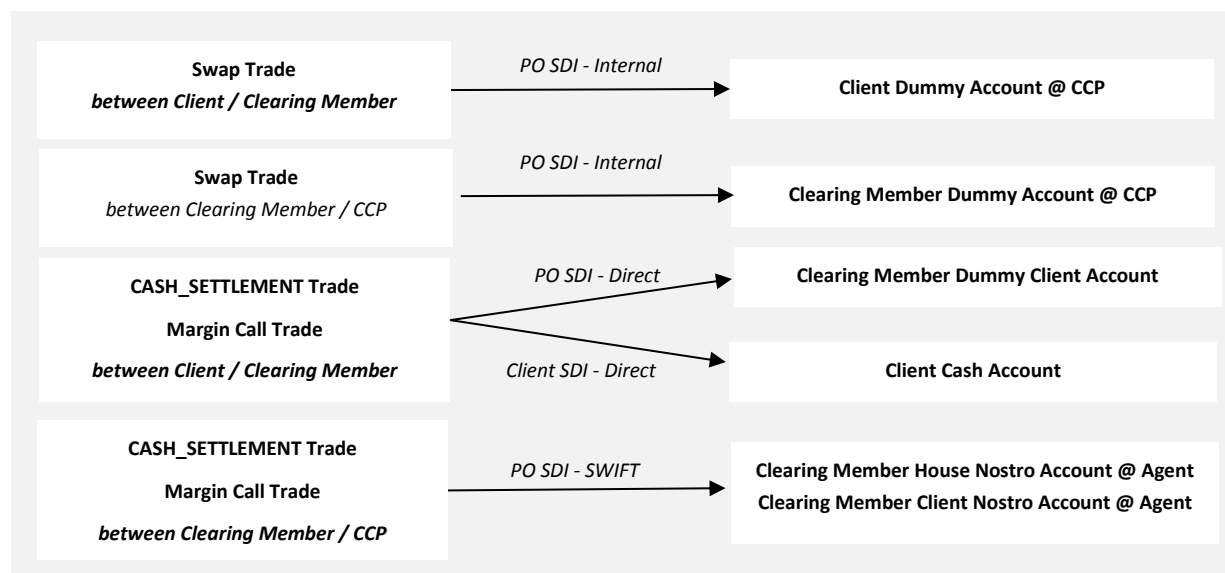
**It is the same as an individual client cash account with LegalEntity = Child Client name**

➤ See [Client Cash Accounts](#) for setup details.

## Section 5. Settlement and Delivery Instructions

The settlement and delivery instructions (SDIs) drive the trade transfers to the Calypso accounts.

Sample SDIs flow for house activity and individual client activity (this diagram only shows the SDIs that impact Calypso accounts).



From the Calypso Navigator, navigate to **Configuration > Settlements > Delivery Instructions** to define SDIs.

### 5.1 CCP Settlement Instructions

Beneficiary = CME

Role = CounterParty

List of settlement instructions – Sample setup is provided below.

| SDI Name                                       | Method   | Agent       | Currencies | Products           | GL Account | SD Filter                     |
|--|----------|-------------|------------|--------------------|------------|-------------------------------|
| SWIFT/HARRIS BANK/Harris Bank                  | SWIFT    | HARRIS BANK | ANY        | ANY                |            |                               |
| Internal/CME/Internal SDI for trading activity | Internal | CME         | ANY        | G.ClearingProducts |            | XferType_Interest/Upfront_Fee |

| SDI Name - Description                         | Method   | Agent       | CCY | Product            | Calypso Account |
|--|----------|-------------|-----|--------------------|-----------------|
| Internal/CME/Internal SDI for trading activity | Internal | CME         | ANY | G.ClearingProducts | N/A             |
| SWIFT/HARRIS BANK/ HARRIS BANK                 | SWIFT    | HARRIS BANK | ANY | ANY                | N/A             |
| Cash payments between clearing member and CCP. |          |             |     |                    |                 |

Beneficiary = LCH

Role = CounterParty

List of settlement instructions – Same as CME settlement instructions.

| SDI Name - Description  | Method   | Agent       | CCY | Product            | Calypso Account |
|---|----------|-------------|-----|--------------------|-----------------|
| Internal/LCH/Internal SDI for trading activity                                  | Internal | LCH         | ANY | G.ClearingProducts | N/A             |
| SWIFT/HARRIS BANK/HARRIS BANK<br>Cash payments between clearing member and CCP. | SWIFT    | HARRIS BANK | ANY | N/A                | N/A             |

## CCP - Sample “Internal/CME/Internal SDI for trading” Settlement Instructions

Edit | Attributes & Notes | Browse

SDI Id: 66197

Reference: 66197

Role: CounterParty

Beneficiary: CME

Benef. Name:

Ccy: ANY

Pay/Rec: BOTH

Description: Internal/CME/Internal SDI for trading activity

☐ Link SDI

Method: Internal

Identifier:

Trade CounterParty: ALL

Cash/Security: BOTH

Contact: Default

Processing Org: ALL

Products: G.ClearingProducts

SD Filter: XferType\_Interest/Upfront\_Fee

☒ Preferred

Priority: 0

☐ Direct

Effective From:

Effective To:

☐ by Trade Date

Agent: CME [intermediary] [intermediary2] Direct

Code: CME

A/C: Internal SDI for trading activity

Msg: ☐

Contact: Default

GL A/C:

This SDI does not impact any account in Calypso.

Static data filter XferType\_Interest/Upfront\_Fee

Static Data Filter Window [140022SP2/LAPTOP\_REL14/calypso\_user]

Name: XferType\_Interest/Upfront\_Fee

Comment:

Groups: ANY

| Attribute | Criteria | Filter Value(s)                                     |
|-----------|----------|---|
| Xfer Type | IN       | COMMISSION,FEE,INTEREST,TERMINATION_FEE,UPFRONT_FEE |

## CCP - Sample “SWIFT/HARRIS BANK/HARRIS BANK” Settlement Instructions

Cash payments between the clearing member and the CCP.

The screenshot shows a web-based form for setting up a CCP Settlement Instruction. The form is divided into several sections. At the top, there are tabs for 'Edit', 'Attributes & Notes', and 'Browse'. The 'Edit' tab is active. The form contains various input fields and dropdown menus. Key fields include 'SDI Id' (1304), 'Reference' (CME-SWIFT), 'Role' (CounterParty), 'Beneficiary' (CME), 'Benef. Name' (empty), 'Ccy' (ANY), 'Pay/Rec' (BOTH), 'Description' (SWIFT/HARRIS BANK/HARRIS BANK), 'Cash/Security' (BOTH), 'Contact' (Default), 'Processing Org' (ALL), 'Products' (ANY), 'SD Filter' (empty), 'Trade CounterParty' (ALL), 'Link SDI' (unchecked), 'Method' (SWIFT), 'Identifier' (empty), 'Direct' (unchecked), 'Effective From' (empty), 'Effective To' (empty), 'by Trade Date' (unchecked), 'Agent' (HARRIS BANK), 'Code' (HARRIS BANK), 'A/C' (HARRIS BANK), and 'Msg' (unchecked). There are also buttons for 'Add' and 'Msg'.

This SDI does not impact any account in Calypso.

## 5.2 EMIR Segregated Accounts

For SwapClear Members of LCH, clients can choose to hold deposits of collateral that cover Initial Margin requirements into separate accounts.

### Margin Call Contracts

In order to allow this, the individual CCP-facing IM contracts must be created for each client who wants a separate account (each unique EMIR Account). On this IM contract, the CCP\_REFERENCE must be set to the LCH client's sub-account number instead of "C". The LCH client's sub-account number can be found in the "Account" column of LCH Report86c report, or Report 33a for intraday margins. The CCP\_REFERENCE must match the Account value in this report in order to import the Initial Margin from that row of the report.

See [Clearing Member Contracts – CCP Facing Contracts](#) for details.

### CCP Settlement Instructions

CCP settlement instructions must be added to populate the separate account. One for each client.

**Settlement Delivery Instructions [130007SP2/CLEARING\_29/] (User: slee)**

Utilities Help

Edit Attributes & Notes Browse

SDI Id 277302

Reference 277302

Role CounterParty

Beneficiary LCH

Benef. Name

Ccy ANY

Pay/Rec BOTH

Description /HARRIS BANK/LCH NOSTRO ACCOUNT OF GIG004DISA

☐ Link SDI

Method SWIFT Add

Identifier

Cash/Security BOTH

Contact Default

Processing Org ALL

Products ANY

SD Filter 05.COLLATERAL-GIG004DISA

Trade CounterParty ALL

☒ Preferred Priority 0

☐ Direct

Effective From

Effective To

☐ by Trade Date

Agent: HARRIS BANK [intermediary] [intermediary2] Direct

Code HARRIS BANK A/C LCH NOSTRO ACCOUNT OF GIG004DISA ☐ Msg

**Static Data Filter Window [130007SP2/CLEARING\_29/] (User: slee)**

Name: 05.COLLATERAL-GIG004DISA Attributes... Simulate...

Comment:

Groups: ANY

Pending Modifs

| Attribute               | Criteria        |     | Filter Value(s) |
|-------------------------|-----------------|-----|-----------------|
| IN Static Data Filter   | IN              | Add | 05.COLLATERAL   |
| Margin Call Contract Id | INT_ENUMERATION |     | 337892          |

The attribute "Margin Call Contract Id" in the Static Data Filter is the CCP-facing IM contract created for the client where the CCP\_REFERENCE is set to the LCH client's sub account ("Account" column of LCH Report86c).

**Margin Call Window - Version - 0 (User: slee)**

Margin Call Config Util Help

Edit Browse

Name : IM CALYPUK-C LCH GIG004DISA **337892** 0 Subtype : Master

Description : IM CALYPUK-C LCH GIG004DISA Parent : ...

| Additional Info   | Eligible Books        | Eligible Securities | Eligible Currencies | Concentration      | Optimization | Child Configurations |      |               |                |         |           |                       |     |     |                 |        |               |            |
|---|-----------------------|---------------------|---------------------|--------------------|--------------|----------------------|------|---------------|----------------|---------|-----------|-----------------------|-----|-----|-----------------|--------|---------------|------------|
| Parties   | Details               | Dates & Times       | Initial Margin      | Independent Amount |              |                      |      |               |                |         |           |                       |     |     |                 |        |               |            |
| <div> <div>Processing Org</div> <table border="1"> <tr><td>Role</td><td>ProcessingOrg</td></tr> <tr><td>Processing Org</td><td>CALYPUK</td></tr> <tr><td>Full name</td><td>CALYPUK</td></tr> </table> </div> <div> <div>Collateral Type</div> <table border="1"> <tr><td>CCP</td><td>LCH</td></tr> <tr><td>CCP_ORIGIN_CODE</td><td>CLIENT</td></tr> <tr><td>CCP_REFERENCE</td><td>GIG004DISA</td></tr> </table> </div>      |                       |                     |                     |                    |              |                      | Role | ProcessingOrg | Processing Org | CALYPUK | Full name | CALYPUK               | CCP | LCH | CCP_ORIGIN_CODE | CLIENT | CCP_REFERENCE | GIG004DISA |
| Role  | ProcessingOrg         |                     |                     |                    |              |                      |      |               |                |         |           |                       |     |     |                 |        |               |            |
| Processing Org  | CALYPUK               |                     |                     |                    |              |                      |      |               |                |         |           |                       |     |     |                 |        |               |            |
| Full name   | CALYPUK               |                     |                     |                    |              |                      |      |               |                |         |           |                       |     |     |                 |        |               |            |
| CCP   | LCH                   |                     |                     |                    |              |                      |      |               |                |         |           |                       |     |     |                 |        |               |            |
| CCP_ORIGIN_CODE   | CLIENT                |                     |                     |                    |              |                      |      |               |                |         |           |                       |     |     |                 |        |               |            |
| CCP_REFERENCE   | GIG004DISA            |                     |                     |                    |              |                      |      |               |                |         |           |                       |     |     |                 |        |               |            |
| <div> <div>Legal Entity</div> <table border="1"> <tr><td>Role</td><td>CounterParty</td></tr> <tr><td>Legal Entity</td><td>LCH</td></tr> <tr><td>Full name</td><td>London Clearing House</td></tr> </table> </div> <div> <div>Collateral Type</div> <table border="1"> <tr><td>CCP</td><td>LCH</td></tr> <tr><td>CCP_ORIGIN_CODE</td><td>CLIENT</td></tr> <tr><td>CCP_REFERENCE</td><td>GIG004DISA</td></tr> </table> </div> |                       |                     |                     |                    |              |                      | Role | CounterParty  | Legal Entity   | LCH     | Full name | London Clearing House | CCP | LCH | CCP_ORIGIN_CODE | CLIENT | CCP_REFERENCE | GIG004DISA |
| Role  | CounterParty          |                     |                     |                    |              |                      |      |               |                |         |           |                       |     |     |                 |        |               |            |
| Legal Entity  | LCH                   |                     |                     |                    |              |                      |      |               |                |         |           |                       |     |     |                 |        |               |            |
| Full name   | London Clearing House |                     |                     |                    |              |                      |      |               |                |         |           |                       |     |     |                 |        |               |            |
| CCP   | LCH                   |                     |                     |                    |              |                      |      |               |                |         |           |                       |     |     |                 |        |               |            |
| CCP_ORIGIN_CODE   | CLIENT                |                     |                     |                    |              |                      |      |               |                |         |           |                       |     |     |                 |        |               |            |
| CCP_REFERENCE   | GIG004DISA            |                     |                     |                    |              |                      |      |               |                |         |           |                       |     |     |                 |        |               |            |

### 5.3 Clearing Member Settlement Instructions

Beneficiary = <Clearing Member name>

Role = ProcessingOrg

List of settlement instructions – Sample setup is provided below.

| SDI Name                                | Method   | Agent       | Currencies | Products           | GL Account            | SD Filter                     |
|---|----------|-------------|------------|--------------------|-----------------------|-------------------------------|
| Direct/CGM LLC/CGM_SETTLE_ACCOUNT       | Direct   | CGM LLC     | ANY        | ANY                | CGM_SETTLE_ACCOUNT    |                               |
| Internal/CME/Dummy Account              | Internal | CME         | ANY        | G.ClearingProducts | CGM-CLIENT            | XferType_Interest/Upfront_Fee |
| SWIFT/HARRIS BANK/CGM-USD-NOSTRO-CLIENT | SWIFT    | HARRIS BANK | USD        | ANY                | CGM-USD-NOSTRO-CLIENT | SDI_ClientTrades              |
| SWIFT/HARRIS BANK/CGM-USD-NOSTRO-HOUSE  | SWIFT    | HARRIS BANK | USD        | ANY                | CGM-USD-NOSTRO-HOUSE  | SDI_HouseTrades               |

| SDI Name - Description  | Method   | Agent           | CCY | Product          | Calypso Account                  |
|---|----------|-----------------|-----|------------------|----------------------------------|
| Direct/Clearing Member/Dummy Client Account<br><br>CASH_SETTLEMENT trades between clearing member and client.             | Direct   | Clearing Member | ANY | ANY              | Dummy Client Account             |
| Internal/CME/Dummy Account for Swaps/FRAs/FXNDFs  | Internal | CME             | ANY | Swap, FRA, FXNDF | Dummy Account @CME               |
| Internal/LCH/Dummy Account for Swaps/FRAs   |          | LCH             |     |                  | Dummy Account @LCH               |
| Trades between clearing member and CCP.   |          |                 |     |                  |                                  |
| <b>[NOTE: Repeat for each CCP]</b>  |          |                 |     |                  |                                  |
| SWIFT/HARRIS BANK/Clearing Member HOUSE NOSTRO USD<br><br>Cash payments between clearing member and CCP for house trades. | SWIFT    | HARRIS BANK     | USD | ANY              | Clearing Member HOUSE NOSTRO USD |
| <b>[NOTE: Repeat for each currency]</b>   |          |                 |     |                  |                                  |

| SDI Name - Description   | Method | Agent       | CCY | Product | Calypso Account                   |
|--|--------|-------------|-----|---------|-----------------------------------|
| SWIFT/HARRIS BANK/Clearing Member CLIENT NOSTRO USD              | SWIFT  | HARRIS BANK | USD | ANY     | Clearing Member CLIENT NOSTRO USD |
| Cash payments between clearing member and CCP for client trades. |        |             |     |         |                                   |
| <b>[NOTE: Repeat for each currency]</b>                          |        |             |     |         |                                   |

## Clearing Member - Sample “Direct/Clearing Member/Dummy Client Account” Settlement Instructions

CASH\_SETTLEMENT trades and margin call trades between the clearing member and the client.

Edit | Attributes & Notes | Browse

SDI Id 2559

Reference CGM-Direct

Cash/Security BOTH

Role ProcessingOrg

Contact Default

Beneficiary CGM LLC ...

Processing Org ALL

Benef. Name

Products ANY ...

Ccy ANY ...

SD Filter ...

Pay/Rec BOTH

Trade CounterParty ALL ...

Description Direct/CGM LLC/CGM\_SETTLE\_ACCOUNT

☒ Preferred

Priority 0

☐ Link SDI

Method Direct Add

Effective From

Effective To

☐ by Trade Date

Identifier ...

Agent: CGM LLC [intermediary] [intermediary2] Direct

Code CGM LLC ... A/C CGM\_SETTLE\_ACCOUNT ☒ Msg

Contact Default GL A/C CGM\_SETTLE\_ACCOUNT ...

## Clearing Member - Sample “SWIFT/HARRIS BANK/Clearing Member HOUSE NOSTRO USD” Settlement Instructions

House CASH\_SETTLEMENT trades and margin call trades between the clearing member and the CCP.

Sample for USD - Repeat for each currency.

Edit | Attributes & Notes | Browse

**SDI Id** 1303

Reference 1303

Role ProcessingOrg

**Beneficiary** CGM LLC ...

Benef. Name

Ccy USD ...

Pay/Rec BOTH

Description SWIFT/HARRIS BANK/CGM-USD-NOSTRO-HOUSE

☐ Link SDI

Method SWIFT Add

Identifier ...

Cash/Security BOTH

**Contact** Default

Processing Org ALL

Products ANY ...

**SD Filter** SDI\_HouseTrades ...

Trade CounterParty ALL ...

☒ Preferred Priority 0

Effective From

Effective To

☐ by Trade Date

Agent: HARRIS BANK [intermediary] [intermediary2] Direct

**Code** HARRIS BANK ... A/C CGM-USD-NOSTRO-HOUSE ☒ Msg

**Contact** Default **GL A/C** CGM-USD-NOSTRO-HOUSE ...

Static data filter to filter house trades:

Static Data Filter Window [130003SP1/cft-staging-130003sp1/]

Name: SDI\_HouseTrades Attributes... Simulate...

Comment:

Groups: ANY ...

Pending Modifs

| Attribute               | Criteria |     | Filter Value(s) |
|-------------------------|----------|-----|-----------------|
| BOOK_ATTRIBUTE.BookType | IN       | Add | House,House@CME |
| IN Static Data Filter   | IN       | Add | SDI_NotSwap     |

## Clearing Member - Sample “SWIFT/HARRIS BANK/Clearing Member CLIENT NOSTRO USD” Settlement Instructions

Client CASH\_SETTLEMENT trades and margin call trades between the clearing member and the client.

Sample for USD - Repeat for each currency.



Edit | Attributes & Notes | Browse

SDI Id: 1301

Reference: 1301

Role: ProcessingOrg

Beneficiary: CGM LLC

Benef. Name:

Ccy: USD

Pay/Rec: BOTH

Description: SWIFT/HARRIS BANK/CGM-USD-NOSTRO-CLIENT

☐ Link SDI

Method: SWIFT

Identifier:

Cash/Security: BOTH

Contact: Default

Processing Org: ALL

Products: ANY

SD Filter: SDI\_ClientTrades

Trade CounterParty: ALL

☒ Preferred

Priority: 0

Effective From:

Effective To:

☐ by Trade Date

Agent: HARRIS BANK | [Intermediary] | [Intermediary2] | Direct

Code: HARRIS BANK

A/C: CGM-USD-NOSTRO-CLIENT

☒ Msg

Contact: Default

GL A/C: CGM-USD-NOSTRO-CLIENT

Static data filter to filter client trades:

Static Data Filter Window [130003SP1/cft-staging-130003sp1/]

Name: SDI\_ClientTrades

Comment:

Groups: ANY

Attributes...

Simulate...

Pending Modifs

| Attribute               | Criteria |     | Filter Value(s)    |
|-------------------------|----------|-----|--------------------|
| BOOK_ATTRIBUTE.BookType | IN       | Add | Client, Client@CME |
| IN Static Data Filter   | IN       | Add | SDI_NotSwap        |

## Clearing Member – Sample “Internal/CME/Dummy Account for Swap SDI” Settlement Instructions

It can also be used for FRAs and FXNDFs as needed.

Trades between the clearing member and the CCP.

Example for CME - Repeat for each CCP.

Edit
Attributes & Notes
Browse

SDI Id
66216

Reference
66216

Role
ProcessingOrg

Beneficiary
CGM LLC

Benef. Name

Ccy
ANY

Pay/Rec
BOTH

Description
Internal/CME/Dummy Account

☐ Link SDI

Method
Internal
Add

Identifier

Cash/Security
BOTH

Contact
Default

Processing Org
ALL

Products
G.ClearingProducts

SD Filter
XferType\_Interest/Upfront\_Fee

Trade CounterParty
ALL

☒ Preferred
Priority
0

Effective From

Effective To

☐ by Trade Date

Agent: CME
[intermediary]
[intermediary2]
Direct

Code
CME
A/C
Dummy Account
☒ Msg

Contact
Default
GL A/C
CGM-CLIENT

Same static data filter as for CCP Settlement Instructions.

## 5.4 Individual Client Settlement Instructions

Beneficiary = <Client name>

Currencies = ANY

List of settlement instructions – Sample setup is provided below.

| SDI Name                          | Method   | Agent | Currencies | Products            | GL Account                 | SD Filter                     |
|-----------------------------------|----------|-------|------------|---------------------|----------------------------|-------------------------------|
| Direct/CLIENT_1_AUTO_CASH@CGM LLC | Direct   |       | ANY        | ANY                 | CLIENT_1_AUTO_CASH@CGM LLC | XferType_NOT_Int/Upfront_Fee  |
| Internal/CME/Dummy Account        | Internal | CME   | ANY        | G.Clearing Products |                            | XferType_Interest/Upfront_Fee |

Role = CounterParty

[NOTE: These are created by the Onboarding Manager]

| SDI Name - Description                                     | Method | Agent | Currencies | Products | Calypso Account     |
|--|--------|-------|------------|----------|---------------------|
| Direct/Client Cash Account                                 | Direct | N/A   | ANY        | ANY      | Client Cash Account |
| CASH_SETTLEMENT trades between clearing member and client. |        |       |            |          |                     |
| Margin call trades between clearing member and client.     |        |       |            |          |                     |
| [NOTE: Repeat for each client]                             |        |       |            |          |                     |

| SDI Name - Description                     | Method   | Agent | Currencies | Products            | Calypso Account |
|--|----------|-------|------------|---------------------|-----------------|
| Internal/CME/Dummy Account                 | Internal | CME   | ANY        | G.Clearing Products | N/A             |
| Internal/LCH/Dummy Account                 |          | LCH   |            |                     |                 |
| Trades between clearing member and client. |          |       |            |                     |                 |
| [NOTE: Repeat for each CCP]                |          |       |            |                     |                 |
| [NOTE: Repeat for each client]             |          |       |            |                     |                 |

Role = Client

| SDI Name - Description                             | Method | Agent       | Currencies | Products | Calypso Account |
|--|--------|-------------|------------|----------|-----------------|
| SWIFT/HARRIS BANK/Client                           | SWIFT  | HARRIS BANK | ANY        | ANY      | N/A             |
| Margin call trades (external nostro instructions). |        |             |            |          |                 |
| [NOTE: Repeat for each client]                     |        |             |            |          |                 |

## Individual Client - Sample “Direct/Client CASH USD” Settlement Instructions

CASH\_SETTLEMENT trades and margin call trades between the clearing member and the client - Direct SDI, with DDA = Client Cash Account @ Clearing Member.

Example for USD – Repeat for each client – Repeat for each currency.

Edit
Attributes & Notes
Browse

SDI Id
67208

Reference
67208

Role
CounterParty

Beneficiary
CLIENTB

Benef. Name

Ccy
ANY

Pay/Rec
BOTH

Description
Direct/CLIENTB\_AUTO\_CASH@CGM LLC

☐ Link SDI

Method
Direct
Add
☒ Direct

Identifier

Effective From

Effective To

☐ by Trade Date

Cash/Security
BOTH

Contact
Default

Processing Org
CGM LLC

Products
ANY

SD Filter
XferType\_NOT\_Int/Upfront\_Fee

Trade CounterParty
ALL

☒ Preferred
Priority
0

[agent]
[intermediary]
[intermediary2]
Direct

DDA
CLIENTB\_AUTO\_CASH@CGM LLC

## Individual Client - Sample “Internal/CME/Dummy Account” Settlement Instructions

Trades between the clearing member and the client.

Example for CME – Repeat for each CCP – Repeat for each client.

|  |  |                    |  |                        |  |
|--|--|--------------------|--|------------------------|--|
| Edit                                   |  | Attributes & Notes |  | Browse                 |  |
| SDI Id                                 |  | 67209              |  |                        |  |
| Reference                              |  | 67209              |  |                        |  |
| Role                                   |  | CounterParty       |  |                        |  |
| Beneficiary                            |  | CLIENTB            |  |                        |  |
| Benef. Name                            |  |                    |  |                        |  |
| Ccy                                    |  | ANY                |  |                        |  |
| Pay/Rec                                |  | BOTH               |  |                        |  |
| Description                            |  | Internal/CME/null  |  |                        |  |
| <input type="checkbox"/> Link SDI      |  |                    |  |                        |  |
| Method                                 |  | Internal           |  | Add                    |  |
| Identifier                             |  |                    |  |                        |  |
| <input type="checkbox"/> Direct        |  |                    |  |                        |  |
| Effective From                         |  |                    |  |                        |  |
| Effective To                           |  |                    |  |                        |  |
| <input type="checkbox"/> by Trade Date |  |                    |  |                        |  |
| Agent: CME                             |  | [intermediary]     |  | [intermediary2] Direct |  |
| Code                                   |  | CME                |  | A/C                    |  |
|  |  |                    |  | Msg                    |  |

This SDI does not impact any account in Calypso.

## Individual Client - Sample “SWIFT/HARRIS BANK/Client” Settlement Instructions

Client external Nostro instructions for margin call trades.

The Nostro instructions are defined for the client with role “Client”.

Example for Client A – Repeat for each client.

Edit | Attributes & Notes | Browse

SDI Id: 2522

Reference: CLIENTA-SWIFT

Role: Client

Beneficiary: CLIENT A

Benef. Name:

Ccy: ANY

Pay/Rec: BOTH

Description: SWIFT/HARRIS BANK/CLIENT A- SWIFT

☐ Link SDI

Method: SWIFT

Identifier:

Cash/Security: BOTH

Contact: Default

Processing Org: CGM LLC

Products: ANY

SD Filter:

Trade CounterParty: ALL

☒ Preferred

Priority: 0

☐ Direct

Effective From:

Effective To:

☐ by Trade Date

Agent: HARRIS BANK [intermediary] [intermediary2] Direct

Code: HARRIS BANK

A/C: CLIENT A- SWIFT

☐ Msg

This SDI does not impact any Calypso account.

## 5.5 Omnibus Client Settlement Instructions

Beneficiary = <Child Client name>

Role = CounterParty

| SDI Name - Description                           | Method   | Agent | Currencies | Products         | Calypso Account |
|--|----------|-------|------------|------------------|-----------------|
| Internal/CME/CME                                 | Internal | CME   | ANY        | Swap, FRA, FXNDF | N/A             |
| Internal/LCH/LCH                                 |          | LCH   |            |                  |                 |
| Trades between clearing member and child client. |          |       |            |                  |                 |
| [NOTE: Repeat for each CCP]                      |          |       |            |                  |                 |
| [NOTE: Repeat for each client]                   |          |       |            |                  |                 |

Beneficiary = <Omnibus Client name>

Role = CounterParty

| SDI Name - Description   | Method | Agent | Currencies | Products | Calypso Account         |
|--|--------|-------|------------|----------|-------------------------|
| Direct/Omnibus Client CASH USD                                   | Direct | N/A   | USD        | ANY      | Omnibus Client Cash USD |
| CASH_SETTLEMENT trades between clearing member and child client. |        |       |            |          |                         |
| Margin call trades between clearing member and omnibus client.   |        |       |            |          |                         |

| SDI Name - Description           | Method | Agent | Currencies | Products | Calypso Account |
|----------------------------------|--------|-------|------------|----------|-----------------|
| [NOTE: Repeat for each currency] |        |       |            |          |                 |
| [NOTE: Repeat for each client]   |        |       |            |          |                 |

[NOTE: In order for the above SDIs to be selected for CASH\_SETTLEMENT trades with the child client, and margin call trades with the omnibus client, the environment property LOOK\_PARENT\_SDI must be set to True]

Beneficiary = <Omnibus Client name>

Role = Client

| SDI Name - Description                             | Method | Agent       | Currencies | Products | Calypso Account |
|--|--------|-------------|------------|----------|-----------------|
| SWIFT/HARRIS BANK/Omnibus Client                   | SWIFT  | HARRIS BANK | ANY        | ANY      | N/A             |
| Margin call trades (external nostro instructions). |        |             |            |          |                 |
| [NOTE: Repeat for each client]                     |        |             |            |          |                 |

## Section 6. Margin Calls Setup

Margin calls are handled through the Collateral Management module, which allows allocating margin calls on initial margins and variation margins.

Initial margins (IM) are imported into the system as Collateral Exposure trades, based on Margin Call Contracts configurations. For clearing member contracts (CCP-facing contracts), there is one Collateral Exposure trade per Margin Call Contract and per client. For client contracts, there is one Collateral Exposure trade per Margin Call Contract.

Variation margins (VM) are represented by the cash positions of the client cash accounts.

Margin calls on initial margins and variation margins are computed in cash by the COLLATERAL\_MANAGEMENT scheduled task, and are reported on the client statements. The clients can choose how to meet the margin calls: in cash, securities, or both.

### Haircut Rules

You can define haircut rules for foreign currencies and securities as specified by the CCP rules prior to defining margin call contracts.

From the Calypso Navigator, navigate to **Fees, Haircuts, & Margin Calls > Haircut Rule** to define haircut rules – Help is available from that window.

## 6.1 CCP Facing Contracts

### Initial Margin

The clearing member contracts are used to store the initial margin on the positions of the clearing member at the CCP.

Initial margin requirements being segregated for house and client activity, it is required to define margin call contracts for each Clearing Member/CCP/activity combination.

- For house activity, there is one Margin Call Contract per CCP and product type that handles initial margins.
- For client activity we model as many ccp-facing margin contracts as segregation levels (e.g. omnibus accounts, individual segregated accounts, etc.).

For SwapClear Members of LCH, it is also possible to have one Margin Call Contract per CCP, client, and product type that handles initial margins. The client can decide whether to have segregated accounts or not.

The initial margins can be stored in the base currency of the Margin Call Contract, or in the native currency. Margin calls are computed in the corresponding currency, and can be substituted to collateral securities.

The actual margin calls are represented by margin call trades.

From the Calypso Navigator, navigate to **Configuration > Fees, Haircuts, & Margin Calls > Margin Call** to define margin call contracts.

### Variation Margin

By default, there is no need to define variation margin contract as the variation margin is automatically settled in cash with the CCP. However, you can also setup variation margin contracts with the CCP in order to use the Collateral Manager to generate margin call trades, and allocate the margin calls in cash or security. These variation margin contracts should be defined in the same manner as the client variation margin contracts with or without breakdown of Variation Margin Components.

A sample setup is provided below.

## 6.1.1 CCP Facing - Initial Margin Contracts

On these contracts, the legal entity configured in the contract is the CCP. These contracts are meant to represent the margin requirements between the clearing member and the CCP. There are two types of ccp-facing contracts:

- House CCP-Facing
- Client CCP-Facing

The House CCP-Facing contract will represent the margin requirements for the house activity.

The number of Client CCP-Facing contracts is driven by the different types of segregation of the customers: e.g. Omnibus accounts, ISA accounts.

### Example

A Clearing Member (represented by the PO in Calypso) has the following clients:

Undisclosed Customers:

Client1 and Client2

Disclosed Clients

CUS01 and CUS02 (both clients benefit from the full segregation e.g. ISA accounts)

We would model the IM margin call Client CCP-Facing in Calypso as follows:

- One contract representing the Omnibus Account (including Client1 and Client2)
- One contract representing customer CU01
- One contract representing CUS02

Sample of House/Client CCP-Facing Contract:

| Tab: Fields                                       | Client Activity                       | House Activity                        |
|---|---------------------------------------|---------------------------------------|
| <b>Parties: Processing Org</b>                    | <Clearing Member>                     | <Clearing Member>                     |
| <b>Parties: Legal Entity</b>                      | <CCP>                                 | <CCP>                                 |
| <b>Parties: Legal Entity Role</b>                 | Counterparty                          | Counterparty                          |
| <b>Details: Products</b>                          | CollateralExposure                    | CollateralExposure                    |
| <b>Details: Currency</b>                          | <Cleared Currencies>                  | <Cleared Currencies>                  |
| <b>Details: End of Day Pricing Environment</b>    | <Your pricing environment>            | <Your pricing environment>            |
| <b>Details: Intraday Pricing Environment</b>      | <Your pricing environment>            | <Your pricing environment>            |
| <b>Details: Contract Type</b>                     | Client@[CCP]                          | House@[CCP]                           |
| <b>Details: Haircut</b>                           | <haircut rule>                        | <haircut rule>                        |
| <b>Dates &amp; Time: Valuation Time Zone</b>      | Same as pricing environment time zone | Same as pricing environment time zone |
| <b>Dates &amp; Time: Valuation Date Frequency</b> | <rule for valuation date frequency>   | <rule for valuation date frequency>   |



| Tab: Fields   | Client Activity  | House Activity   |
|---|--|--|
| <b>Dates &amp; Time: Valuation Time Offset</b>                    | <rule for valuation time offset>   | <rule for valuation time offset>   |
| <b>Initial Margin: Initial Margin option</b>                      | Checked  | Checked  |
| <b>Additional Info: CCP</b>                                       | <CCP>  | <CCP>  |
| <b>Additional Info: CCP_REFERENCE</b>                             | CLIENT (Omnibus Accounts) or<br>ISA Account                                    | HOUSE  |
| <b>Additional Info: PRODUCT_TYPE</b>                              | Values are configured in the<br>domain<br><mccAdditionalField.PRODUCT_<br>TYPE | Values are configured in the<br>domain<br><mccAdditionalField.PRODUCT_<br>TYPE |
| <b>Additional Info: MARGIN_TYPE</b>                               | IM   | IM   |
| <b>ELIGIBILITY</b><br><b>Eligible Book -&gt; Set Default Book</b> | Checked  | Checked  |
| <b>ELIGIBILITY</b><br><b>Eligible Book -&gt; Books</b>            | <Clearing member Client Book>  | <Clearing member House Book>   |
| <b>ELIGIBILITY</b><br><b>Eligible Securities</b>                  | Add one or more bond filters   | Add one or more bond filters   |
| <b>ELIGIBILITY</b><br><b>Eligible Currencies</b>                  | <base currency><br><list of eligible collateral<br>currencies>                 | <base currency><br><list of eligible collateral<br>currencies>                 |

#### Parties: Legal Entity

This is the Clearing House.

#### Details: Contract Type

This is useful in the case the user needs to filter the margin contracts per CCP AND [client or house].

The recommended format is: Client/House>@<CCP>

Examples:

- Client@CME
- House@LCH, etc.

#### Dates & Time: Valuation Date Frequency

Recommended rule:

The 'Date Rules' dialog box for 'COL\_MIGR\_DAILY\_BUS' is shown. The 'Name' field contains 'COL\_MIGR\_DAILY\_BUS'. The 'Type' is set to 'DAILY'. The 'Day' is '0' and 'Add Days' is '0'. The 'Month' is 'JAN'. There are 'Select All' and 'UnSelect All' buttons. Below these are checkboxes for months: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec. The 'Add Relative Months' field is '0'. The 'Relative Type' is set to 'Absolute'. On the right, 'WeekDay' is 'NONE', 'Rank' is 'NONE', and 'Date Roll' is 'FOLLOWING'. There are radio buttons for 'Bus' (selected), 'Cal', and 'Bus Days'. There is a 'Holidays' field with a dropdown arrow and a 'Check Holiday' checkbox.

### Dates & Time: Valuation Time Offset

Recommended rule:

The 'Date Rules' dialog box for 'COL\_MIGR\_VAL\_REL' is shown. The 'Name' field contains 'COL\_MIGR\_VAL\_REL'. The 'Type' is set to 'RELATIVE'. The 'Day' is '0' and 'Add Days' is '-1'. The 'Month' is 'JAN'. There are 'Select All' and 'UnSelect All' buttons. Below these are checkboxes for months: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec. The 'Add Relative Months' field is '0'. The 'Relative Type' is set to 'Absolute'. On the right, 'WeekDay' is 'NONE', 'Rank' is 'NONE', and 'Date Roll' is 'PRECEDING'. There are radio buttons for 'Bus' (selected), 'Cal', and 'Bus Days'. There is a 'Holidays' field with a dropdown arrow and a 'Check Holiday' checkbox. At the bottom, there is a 'Relative' field containing 'COL\_MIGR\_DAILY\_BUS' and a value field containing '305695'.

Example:

| Parties  | Details | Dates & Times | Initial Margin | Independent Amount | Eligibility | Concentration | Optimization | Configurations | Linked             |
|--|---------|---------------|----------------|--------------------|-------------|---------------|--------------|----------------|--------------------|
| <div> <div>Valuation</div> <div> <div>Valuation Agent Type</div> <div>Valuation Date Frequency</div> <div>Valuation Time Offset</div> <div>Valuation Time</div> <div>Valuation Time Zone</div> </div> </div> |         |               |                |                    |             |               |              |                |                    |
|  |         |               |                |                    |             |               |              |                | COL_MIGR_DAILY_BUS |
|  |         |               |                |                    |             |               |              |                | COL_MIGR_VAL_REL   |
|  |         |               |                |                    |             |               |              |                | 6:00 pm            |
|  |         |               |                |                    |             |               |              |                | America/New_York   |

### Additional Info: CCP REFERENCE

By default we configure CLIENT or HOUSE as needed but for European CCPs, clients that benefit from full segregation (ISA accounts) must be represented individually in a ccp-facing margin call contracts or through their position accounts.

Examples for Pre-CDML: LCH

Configure this field with values from the column "Account" in the report RPT86c/Report 33a)

Examples for Post CDML (any CCP)

Configure this field from the value in the element <segregationAccount> of the initialMargin CDML report.

## Summary of supported Clearing Houses

| CCP   | CCP EOD File   | Field/Element   |
|-------|--|---|
| CME   | IRSMR3 report.                                       | Pre-CDML<br>Column "A/C ID"<br>Post-CDML<br><segregationAccount>  |
| EUREX | RPTCC204   | //RC/rptSubHdr/membId<br>CDML<br><segregationAccount>             |
| ICE   | Client Gross Margin Report                           | Client Legal Entity Account<br>CDML<br><segregationAccount>       |
| LCH   | Report86c (Client<br>Report 86 (house)<br>Report 33a | Pre-CDML<br>Column "Account"<br>Post-CDML<br><segregationAccount> |

Additional Info: PRODUCT\_TYPE

The values of this field must be configured in the domain `mccAdditionalField.PRODUCT_TYPE`

Examples: IRD, NDF, etc.

Additional Info: MARGIN\_TYPE

The values (IM or VM) are configured in the domain `mccAdditionalField.MARGIN_TYPE`

Choose IM.

Eligibility: Eligible Securities

We must create a static data filter with the choice of securities collateral.

Example:

Static Data Filter Window [142007/AMC/Max IGLESIAS]

Name: CME\_Bond\_Collateral Attributes...

Comment:

Groups: ANY ...

| Attribute    | Criteria        | Filter Value(s)     |
|--------------|-----------------|---------------------|
| Product Id   | INT_ENUMERATION | 3107,5673,5682,6803 |
| Product Type | IN              | G.Bonds             |

Add

Once created, the filter appears in the bond selector:

Parties Details Dates & Times Initial Margin Independent Amount Eligibility

Eligible Books Eligible Securities Eligible Currencies

IEF4 Corp Bonds Product Id

StaticData Filter Selector

Q cme\_b

| Name                | Description |
|---------------------|-------------|
| CME_Bond_Collateral |             |

### 6.1.2 CPP Facing - VM Margin Call Contracts (Optional)

| Tab: Fields                                    | Client Activity VM – USD   | House Activity VM – USD  |
|--|--|--|
|  | [NOTE: Repeat for each currency for the multi-currency scenario] | [NOTE: Repeat for each currency for the multi-currency scenario] |
| <b>Parties: Processing Org</b>                 | <clearing member>  | <clearing member>  |
| <b>Parties: Legal Entity Role</b>              | Client   | Client   |
| <b>Parties: Legal Entity</b>                   | <CCP>  | <CCP>  |
| <b>Details: Products</b>                       | CollateralExposure   | CollateralExposure   |
| <b>Details: Currencies</b>                     | USD  | USD  |
| <b>Details: End of Day Pricing Environment</b> | <pricing env>  | <pricing env>  |
| <b>Details: Intraday Pricing Environment</b>   | <pricing env>  | <pricing env>  |
| <b>Details: Haircut</b>                        | <haircut rule>   | <haircut rule>   |
| <b>Dates &amp; Times: Valuation Time Zone</b>  | Same as <pricing env> timezone                                   | Same as <pricing env> timezone                                   |
| <b>Dates &amp; Times: Send Statement</b>       | Checked  | Checked  |
| <b>Initial Margin: Initial Margin</b>          | Checked  | Checked  |
| <b>Initial Margin: Credit Multiplier</b>       |  |  |
| <b>Additional Info: CCP</b>                    | <CCP>  | <CCP>  |
| <b>Additional Info: CCP_ORIGIN_CODE</b>        | CLIENT   | HOUSE  |
| <b>Additional Info: CCP_REFERENCE</b>          | C  | H  |
| <b>Additional Info: PRODUCT_TYPE</b>           |  |  |

| <b>Tab: Fields</b>                                       | <b>Client Activity VM<br/>– USD</b><br>[NOTE: Repeat for each currency for the multi-currency scenario] | <b>House Activity VM<br/>– USD</b><br>[NOTE: Repeat for each currency for the multi-currency scenario] |
|--|---|--|
| <b>Additional Info: MARGIN_TYPE</b>                      | VM  | VM   |
| <b>Additional Info: INCLUDED_VM_FLOWS</b>                |   |  |
| <b>Additional Info: SEPARATE_VM_SETTLEMENT</b>           | False   | False  |
| <b>Additional Info: VM_CLASSIFICATION</b>                | CTM or STM  | CTM or STM   |
| <b>Eligible Books: Set Default Book</b>                  | Checked   | Checked  |
| <b>Eligible Books: Book</b>                              | <PO Client book>  | <PO House book>  |
| <b>Eligible Securities</b>                               |   |  |
| <b>Eligible Currencies</b>                               | <base currency><br>USD  | <base currency><br>USD   |
| <b>Eligible Currencies: Cash Margin Call Account</b>     | True  | True   |
| <b>Eligible Currencies: Security Margin Call Account</b> | True  | True   |
| <b>Eligible Currencies: Orderer Role</b>                 | CounterParty  | CounterParty   |

## 6.2 Client Facing Contracts

The client contracts are used to store the initial margin / variation margin on the positions of the client at the clearing member.

On these contracts, the Legal Entity configured in the contract is the client or a clearing member affiliate. This category of contract represents margin flows between the customer or affiliates and the Clearing Member.

### Initial Margin

There is one IM margin call contract per CCP, position account and Product type.

The initial margins can be stored in the base currency of the Margin Call Contract, or in the native currency. Margin calls are computed in the corresponding currency, and can be substituted to collateral securities.

### Variation Margin

Variation margins can be stored in multiple currencies, or in a single currency, based on the client's choice.

- Multi-currency scenario – There is one VM Margin Call Contract per Client and per currency (regardless of CCP and product type).  
In this case, there is one variation margin per currency, and the margin calls are computed per currency.
- Single-currency scenario – There is one VM Margin Call Contract per Client.  
In this case, all variation margins are converted to the base currency of the Margin Call Contract. There is one variation margin in base currency, and the margin calls are computed in base currency.

The actual margin calls are represented by margin call trades.

### ***Collateral Held at Clearing Member, not posted at CCP***

The system allows maintaining additional collaterals held at the clearing member by a given client, but not posted at the CCP, in a specific margin call contract.

These margin call contracts must be defined as the Initial Margin contracts with CCP = Unallocated.

The collaterals attached to these contracts will be included in the regulatory reporting.

### ***Margin Call Contracts Definition***

For the client contracts, it is required that the margin calls update two different accounts in Calypso:

- The clearing member external nostro account (where cash and/or securities are actually paid or received)
- The client cash account @ the clearing member

For this, the margin call contracts are defined for the external role of the client (we are using the role "Client" in this setup - It can also be "ExtCounterParty" – See [On-Boarding an Individual Client](#) for details), and you need to define the following attributes in the panel Eligibility > Eligible Currencies:

- Cash Margin Call Account = True
- Security Margin Call Account = True
- Order Role = "CounterParty", the role of the Client cash account at the clearing member.

### ***Breakdown of Variation Margin Components***

This functionality allows generating client VM Margin Calls based on user-defined combinations of the CMF generated fees and the individual cashflows that are passed from the CCP, through the CMF to the client. It allows the users to associate transfers that hit a single cash account to multiple VM Margin Call contracts using configuration controlled by the user.

You need to define the following attributes in the Additional Info of the VM contracts:

- INCLUDED\_VM\_FLOWS (Optional) – Comma-separated list of flow types associated with the margin call contract. If it is not set, all flow types will be associated with the margin call contract (default).
- SEPARATE\_VM\_SETTLEMENT - If True, the flows associated with the margin call contract, including the Margin Call trades, will be included in a "Separate Settlements" section in the Client Statement. Otherwise, the flows will contribute to the Financial Summary table of the Client Statement.

From the Calypso Navigator, navigate to **Configuration > Fees, Haircuts, & Margin Calls > Margin Call** to define margin call contracts.

## **6.2.1 Client Facing - Initial Margin Contracts**

| <b>Tab: Fields</b>                       | <b>Client Activity</b>                               |
|--|--|
| <b><i>Parties: Processing Org</i></b>    | <Clearing Member>                                    |
| <b><i>Parties: Legal Entity</i></b>      | Customer or Clearing member's affiliate Legal Entity |
| <b><i>Parties: Legal Entity Role</i></b> | Client   |
| <b><i>Details: Products</i></b>          | CollateralExposure                                   |
| <b><i>Details: Currency</i></b>          | <Cleared Currencies>                                 |

| <b>Tab: Fields</b>  | <b>Client Activity</b>  |
|---|---|
| <b><i>Details: End of Day Pricing Environment</i></b>                           | <Your pricing environment>  |
| <b><i>Details: Intraday Pricing Environment</i></b>                             | <Your pricing environment>  |
| <b><i>Details: Contract Type</i></b>  | Client@[CCP]  |
| <b><i>Details: Haircut</i></b>  | <haircut rule>  |
| <b><i>Dates &amp; Time: Valuation Time Zone</i></b>                             | Same as pricing environment time zone                                   |
| <b><i>Dates &amp; Time: Valuation Date Frequency</i></b>                        | <rule for valuation date frequency>                                     |
| <b><i>Dates &amp; Time: Valuation Time Offset</i></b>                           | <rule for valuation time offset>  |
| <b><i>Dates&amp;Times: Send Statements</i></b>                                  | Checked   |
| <b><i>Initial Margin: Initial Margin option</i></b>                             | Checked   |
| <b><i>Initial Margin: Credit Multiplier</i></b>                                 | <Credit Multiplier>   |
| <b><i>Additional Info: CCP</i></b>  | <CCP>   |
| <b><i>Additional Info: CCP_REFERENCE</i></b>                                    | Position account at the CCP<br>(see comments below)                     |
| <b><i>Additional Info: PRODUCT_TYPE</i></b>                                     | Values are configured in the domain<br><mccAdditionalField.PRODUCT_TYPE |
| <b><i>Additional Info: MARGIN_TYPE</i></b>                                      | IM  |
| <b><i>ELIGIBILITY</i></b><br><b><i>Eligible Book -&gt; Set Default Book</i></b> | Checked   |
| <b><i>ELIGIBILITY</i></b><br><b><i>Eligible Book -&gt; Books</i></b>            | <customer/affiliate Book>   |
| <b><i>ELIGIBILITY</i></b><br><b><i>Eligible Securities</i></b>                  | Add one or more bond filters  |
| <b><i>ELIGIBILITY</i></b><br><b><i>Eligible Currencies</i></b>                  | <base currency><br><list of eligible collateral currencies>             |
| <b><i>Eligible Currencies: Cash Margin Call Account</i></b>                     | True  |
| <b><i>Eligible Currencies: Security Margin Call Account</i></b>                 | True  |
| <b><i>Eligible Currencies: Orderer Role</i></b>                                 | CounterParty  |

Additional Info: CCP\_REFERENCE

We must report the client's (or affiliate) position account id at the CCP.

Post CDML, the value can come from either the value in the element <initialMarginAccountId> or from the value in the element <positionAccountID>, depending on the level of granularity.

This happens when the CCP provides margin calculations at portfolio level for a given customer.

## Example of EUREX

Client: CAXXV

Portfolios:

a) CAXXV\_P

b) CAXXV\_A1

c) CAXXV\_2

We report in the CDML, in the element <initialMarginAccountId> the aggregated margin amounts for the three portfolios and three elements <segregationAccount>, each containing the margin requirements for a), b) and c).

The user in Calypso has the choice of creating one margin call that represents the aggregation of the three portfolios. In that case it will create one margin call and will reference in the attribute CCP\_REFERENCE the value of the element <initialMarginAccountId>.

If the user needs more granularity, it can decide to create three margin calls where the CCP\_REFERENCE attribute will contain the value of the <segregationAccount> element.

## 6.2.2 Variation Margin Contracts

| Tab: Fields                                    | Client VM – USD  |
|--|--|
|  | [NOTE: Repeat for each currency for the multi-currency scenario] |
| <b>Parties: Processing Org</b>                 | <clearing member>  |
| <b>Parties: Legal Entity Role</b>              | Client   |
| <b>Parties: Legal Entity</b>                   | <client>   |
| <b>Details: Products</b>                       | CollateralExposure   |
| <b>Details: Currencies</b>                     | USD  |
| <b>Details: End of Day Pricing Environment</b> | <pricing env>  |
| <b>Details: Intraday Pricing Environment</b>   | <pricing env>  |
| <b>Details: Contract Type</b>                  | Client   |
| <b>Details: Haircut</b>                        | <haircut rule>   |
| <b>Dates &amp; Times: Valuation Time Zone</b>  | Same as <pricing env> timezone                                   |



|  |  |
|--|--|
| <b>Tab: Fields</b>                                       | <b>Client VM – USD</b><br>[NOTE: Repeat for each currency for the multi-currency scenario] |
| <i>Dates &amp; Times: Send Statement</i>                 | Checked  |
| <i>Initial Margin: Initial Margin</i>                    | Checked  |
| <i>Initial Margin: Credit Multiplier</i>                 |  |
| <i>Additional Info: CCP</i>                              |  |
| <i>Additional Info: CCP_REFERENCE</i>                    |  |
| <i>Additional Info: PRODUCT_TYPE</i>                     |  |
| <i>Additional Info: MARGIN_TYPE</i>                      | VM   |
| <i>Additional Info: INCLUDED_VM_FLOWS</i>                |  |
| <i>Additional Info: SEPARATE_VM_SETTLEMENT</i>           | False  |
| <i>Additional Info: VM_CLASSIFICATION</i>                | CTM or STM   |
| <i>Eligible Books: Set Default Book</i>                  | Checked  |
| <i>Eligible Books: Book</i>                              | < client book >  |
| <i>Eligible Securities</i>                               |  |
| <i>Eligible Currencies</i>                               | <base currency><br>USD   |
| <i>Eligible Currencies: Cash Margin Call Account</i>     | True   |
| <i>Eligible Currencies: Security Margin Call Account</i> | True   |
| <i>Eligible Currencies: Orderer Role</i>                 | CounterParty   |

## Sample USD VM Client Contract

For the multi-currency scenario, repeat for each client and for each currency.

For the single-currency scenario, repeat for each client.

The differences with the house contracts are listed below.

### Parties

- Legal Entity Role = Client
- Legal Entity = <Client name>

**Dates & Times**

- Valuation Time Zone = Same as <pricing env> timezone
- "Send Statement" = Checked

**Initial Margin**

- "Initial Margin" = Checked

**Additional Info**

- CCP = Not set
- CCP\_REFERENCE = Not set
- PRODUCT\_TYPE = Not set
- MARGIN\_TYPE = VM
- INCLUDED\_VM\_FLOWS (Optional) = Not set.

*Comma-separated list of flow types associated with the margin call contract. If it is not set, all flow types will be associated with the margin call contract (default).*

- SEPARATE\_VM\_SETTLEMENT = False.

*If True, the flows associated with the margin call contract, including the Margin Call trades, will be included in a "Separate Settlements" section of the Client Statement. Otherwise, the flows will contribute to the Financial Summary table of the Client Statement.*

**Eligible Books**

- Set Default Book = Checked
- Book = <Client's book name> - For example "Client A @ CGM"

[NOTE: The timezone of the book must be the same as the margin call contract's valuation timezone]

**Eligible Securities**

None.

**Eligible Currencies**

- Set the base currency – Example, "USD"
  - Only add the base currency as an eligible security, and check "Adjustment Currency".
- You must also make sure that you have the workflow rule *AutoAdjust* on the following transitions in the Collateral workflow: PRICED\_PAY - AGREE\_EXPOSURE - EXPOSURE\_AGREED and PRICED\_RECEIVE - AGREE\_EXPOSURE - EXPOSURE\_AGREED.

Example:

The screenshot shows a dialog box titled "Eligible Currency Definition". It contains a "Currency" dropdown menu with "USD" selected. To the right of the dropdown are three checkboxes: "Compounding" (unchecked), "Include Interest to Position" (unchecked), and "Adjustment Currency" (checked). Below these is a fourth checkbox, "Project Interest to Position", which is also unchecked.

- Cash Margin Call Account = True
- Security Margi Call Account = True
- Orderer Role = CounterParty

## 6.3 Omnibus Client Contracts

The omnibus client contracts are setup in the same way as individual client contracts for Omnibus client name.

➤ See [Client Facing Contracts](#) for details.

## 6.4 Collateral Investment Program

The Collateral Investment Program allows FCMs to reinvest margin calls into the mutual funds participating in the program.

The mutual funds are defined as Funds, and the investment is represented using Collateral Substitution of the margin calls into the Unitized Funds.

### 6.4.1 Funds Definition

From the Calypso Navigator, navigate to **Configuration > Asset Management > Fund**, and define the mutual funds as in the example below.

**Fund Configuration (User: Bill Spota)**

File Action Help

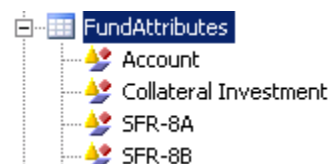
Name: JPMCAP1 ID: 1501

Settings Unit Schedule AUM Legal Entities Daily Dividend Definition Rebate Definition Cashflows


| Name                   | Value                 | Name                      | Value                               |
|------------------------|-----------------------|---------------------------|-------------------------------------|
| <b>Details</b>         |                       | <b>Units</b>              |                                     |
| Legal Entity Full Name | JPMCAP1               | Unitized                  | <input checked="" type="checkbox"/> |
| Account                | JPMCAP1               | Unit Size                 | 1                                   |
| Tax ID                 | 12345678              | Unit Decimals             | 4                                   |
| Source                 | External              | Current Units             | 10,000,000                          |
| Structure              | Pooled                | Current AUM               | 5,000,000                           |
| Currency               | USD                   | <b>Dividends</b>          |                                     |
| Asset Class            | Money Market          | Daily                     | <input checked="" type="checkbox"/> |
| Distribution Policy    | Distributive          | Guaranteed                | <input type="checkbox"/>            |
| Cut-off Time           | 11:59 pm              | Performance               | <input type="checkbox"/>            |
| Cut-off Time Zone      | America/Los_Angeles   | <b>Benchmark</b>          |                                     |
| Settlement Days        | T+0                   | Risk Free Rate            |                                     |
| <b>Issuance</b>        |                       | Type                      | None                                |
| Start Date             | 07/01/2013            | <b>Precision</b>          |                                     |
| Inception Date         | 07/01/2013            | Price decimals            | 5                                   |
| Maturity Date          |                       | Cumulative price decimals | 6                                   |
| Redemption             | At Value              | Daily dividend decimals   | 8                                   |
| Product Code           | Collateral Investment |                           |                                     |

➤ Select the "External" source, check "Unitized", and check "Daily" dividend.

Along with creating this "UnitizedFund" product, you need to create the product codes "Collateral Investment", "SFR-8A", and "SFR-8B" in the domain "FundAttributes":



Then define the product codes using **Main Entry > Configuration > Product > Code**.

In the Fund Configuration window, click  to open the Fund Attribute window, and set "Collateral Investment" to TRUE.

Set SFR-8A to True if the fund should be added to column 8A of the SFR report (IEF5 funds), or set SFR-8B to True if the fund should be added to column 8B of the SFR report (other IEF funds).

| Code Window JPMCAP1   |       |
|-----------------------|-------|
| Product Code Name     | Value |
| Collateral Investment | TRUE  |
| SFR-8A                | True  |

Then create a static data filter to identify the fund. This will be used during the Collateral Substitution process.

| Static Data Filter Window [130007SP2/CLEARING_25/] (User: Bill Spota) |                        |                |                          |  |
|---|------------------------|----------------|--------------------------|--|
| Name:   | Collateral Investments | Attributes...  | Simulate...              |  |
| Comment:  |                        | Pending Modifs |                          |  |
| Groups:   | ANY                    | ...            |                          |  |
| Attribute   | Criteria               |                | Filter Value(s)          |  |
| Product Type  | IN                     | Add            | UnitizedFund,Bond,Equity |  |
| PRODUCT_CODE.Collateral Investment                                    | IN                     | Add            | TRUE                     |  |

This static data filter must be added to the tab called "Eligible Securities" in respective CCP Facing Margin Call Contracts. This will allow you to see all the Money Market Funds you have set up so you can later perform a Collateral Substitution.

## 6.4.2 Margin Call Position Valuation Report

If you are an FCM and you want to invest a client's collateral on deposit with you, you need to choose which of the four CME Collateral Management Programs you as the FCM would like to invest in, how much, and finally how to allocate within each fund. Using the example of CME's IEF2 and IEF5 investment funds, the FCM can only send USD cash and then enter the allocation of that cash in a separate CME system called "Clearing 21". Using the existing CCP facing Margin Call contract(s) already created Calypso can generate a margin call trade where the FCM will wire funds to the CME. The cash can then be converted to a security that represents the investment in Calypso via a collateral substitution within Collateral Manager. Now you have created a security that represents the FCM's investments in various CCP Collateral Management Programs.

In Calypso, we can report on the pre/post haircut amounts invested using the Margin Call Position Valuation Report as seen below, where the pre haircut value is shown under the "Value" column and the post haircut value is seen under the "All-In Value" column.

MarginCallPositionValuation Report (8/10/13 1:35:33 PM) (User: Bill Spota)

ReportDataViewExportMarket DataUtilitiesHelp

Criteria

| Type     | Id      | Description | Nominal            | Clean Price | Currency | Value              | Haircut | All-In Value       | FX Rate | Contract Value     |
|----------|---------|-------------|--------------------|-------------|----------|--------------------|---------|--------------------|---------|--------------------|
| Security | JPMCAP1 |             | -50,806,859,754.00 | 1.00        | USD      | -50,806,859,754.00 | 0.03    | -50,791,617,696.07 | 1.00000 | -50,791,617,696.07 |

Note: In the above scenario, we have to mark the security at par on a daily basis. This can be done by using the PROP\_RATE\_1BUSDAY scheduled task. Should the value of the invested money market fund increase or decrease the user can manually change the price and manage the fluctuation accordingly.

Now imagine your client wants to invest in CME's IEF3 and 4 programs where the only acceptable forms of collateral are corporate bonds. The client must have sent in corporate bonds to the FCM to cover their collateral

requirements in which case the FCM would invest in IEF3 or IEF4. The FCM will then send the bonds to the CCP. Unlike IEF2, which is an investment of cash into a money market, IEF3 and 4 are programs where the FCM can post ineligible securities into a special account where they are rebranded as eligible collateral and can be used to meet IM requirements. The FCM must commit to a certain "lockup amount" which is essentially a guaranteed minimum amount that they will invest, as well as a term for that investment which dictates the minimum amount of time that the bonds will be pledged.

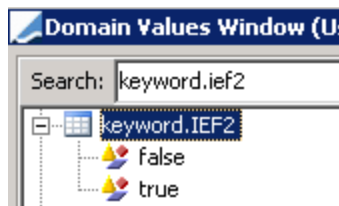
### 6.4.3 Accounts Definition

The purpose of creating a Collateral Investment Account Definition and corresponding SDIs and static data filter is to prevent the transfers that are tagged as a collateral investment from hitting the inventory engine and updating the Nostro.

Next create a static data filter that will enable you to achieve separation of trades and transfers which is further explained in the next section.

| Attribute    | Criteria | Add | Filter Value(s) |
|--------------|----------|-----|-----------------|
| KEYWORD.IEF2 | IN       | Add | true            |

Note: You need to add the trade keyword "IEF2" to the domain "tradeKeyword", and add the domain "keyword.IEF2" to give it a list of available values.



Then create the SDIs that will route both the cash and security transfers to this Collateral Investment Account. Counterparty SDI

**Settlement Delivery Instructions [130007SP2/CLEARING\_26/] (User: Bill Spota)**

Utilities Help

Edit | Attributes & Notes | Browse

**SDI Id** 144196

Reference 144196

Role CounterParty

Beneficiary CME ...

Benef. Name

Ccy ANY ...

Pay/Rec BOTH

Description Internal/CME/Collateral Investments

☐ Link SDI

Method Internal Add

Identifier ...

Cash/Security BOTH

Contact Default

Processing Org ALL

Products ANY ...

**SD Filter** IEF2 Investments ...

Trade CounterParty ALL ...

☒ Preferred Priority 0

☐ Direct

Effective From

Effective To

☐ by Trade Date

Agent: CME [intermediary] [intermediary2] Direct

Code CME ... A/C Collateral Investments ☐ Msg

Processing Org SDI

**Settlement Delivery Instructions [1300075P2/CLEARING\_26/] (User: Bill Spota)**

Utilities Help

**Edit** Attributes & Notes Browse

SDI Id 144197

Reference 144197

Role ProcessingOrg

Beneficiary CALYPUS

Benef. Name

Ccy USD

Pay/Rec BOTH

Description Internal/CME

☐ Link SDI

Method Internal Add

Identifier

Cash/Security BOTH

Contact Default

Processing Org ALL

Products ANY

**SD Filter** IEF2 Investments

Trade CounterParty ALL

☒ Preferred Priority 0

Effective From

Effective To

☐ by Trade Date

Agent: CME [intermediary] [intermediary2] Direct

Code CME A/C

Contact Settlement GL A/C Collateral Investments

☒ Msc

You can view in the Transfer Viewer that the USD cash settlement did not hit the Nostro.

**Transfer Viewer: Transfer Id 743068 (User: Bill Spota)**

Transfer

Main Transfers Messages Postings Tasks

General

Transfer Id: 743068 / 1

Trade Id: 351434 / 1

Counterparty: Chicago Mercantile Exchange

Workflow

Status: SETTLED

Type: COLLATERAL

Product: MarginCall

Financial

Side: RECEIVE Settle Ccy: USD

Amount: 222,222

Other Amount: 0.00

Dates

Trade Date: 08/21/2013

Value Date: 08/21/2013

Settle Date: 08/21/2013

Booking Date: 08/21/2013

Settlement Instructions

PO Agent: Chicago Mercantile Exchange PO Agent Bic:

Receiver Inst: Internal/CME / 0 Status: Default

Their Agent: Chicago Mercantile Exchange Show Route

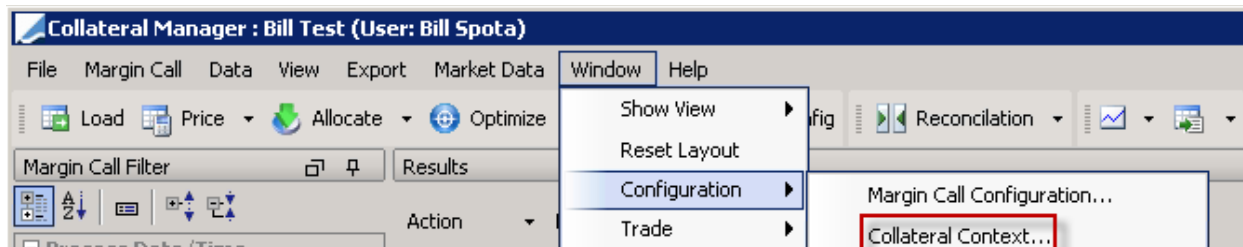
Payer Inst: Internal/CME/Collateral Investments / 0 Status: Default

Proceed to the next section that explains how to tag both trades and transfers.

## 6.4.4 Collateral Investment

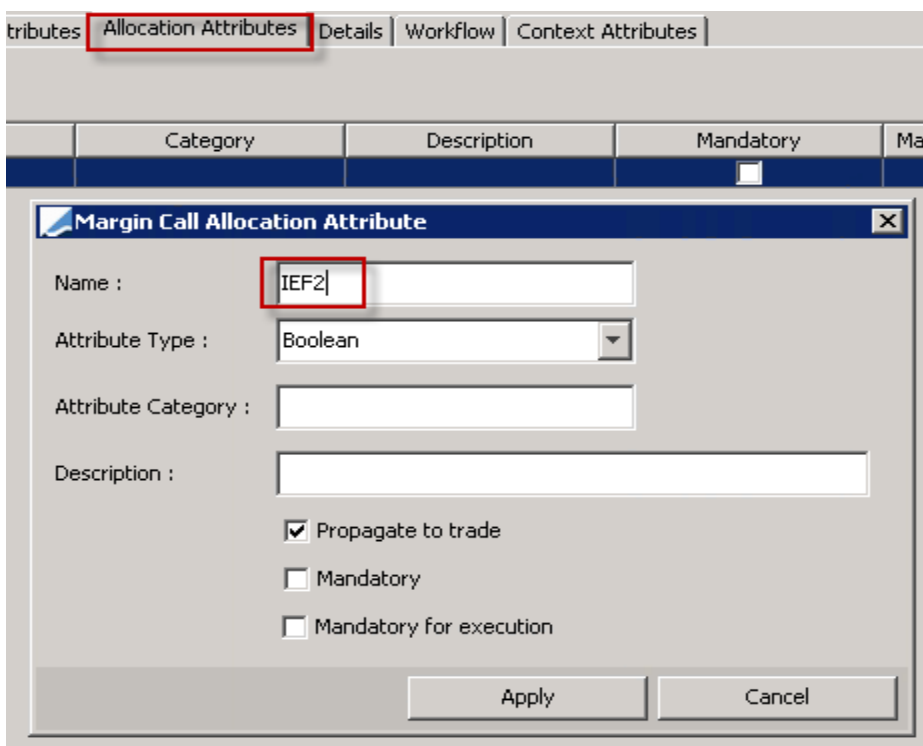
Using the Collateral Manager, you can increase or decrease the amounts in a certain investment program by choosing the security that represents the investment in Calypso and performing a Collateral Substitution.

Our recommendation to accomplish this would be the use of the "Collateral Context" feature which is located within Collateral Manager as follows:

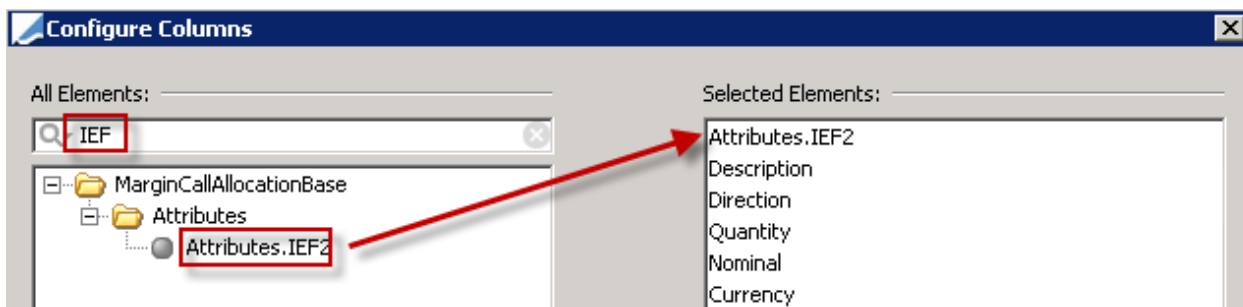


Here you can configure the system to tag the 'investment' allocations (both trade and transfer).

You can name the new attribute with a name that corresponds to the various investment vehicles you are investing in which from the "Allocation Attributes" tab as seen below.



When performing a collateral substitution, you will need to configure the Allocation Attribute by choosing Data > Configure Columns, and add the name of the attribute you have configured.





When ready to perform the substitution tick off the checkbox as seen below.

| Allocation - default                |             |           |                   |                   |
|-------------------------------------|-------------|-----------|-------------------|-------------------|
| Name                                |             |           |                   |                   |
| Attributes.IEF2                     | Description | Direction | Quantity          | Nominal           |
| <input checked="" type="checkbox"/> | USD         | Receive   | 50,806,859,754.25 | 50,806,859,754.25 |
| <input checked="" type="checkbox"/> | JPMCAP1     | Pay       | 50,806,859,754    | 50,806,859,754.00 |

After applying the allocation and pricing the contract all the way to EXECUTED status. This will put a keyword on the margin call trades.

| Name                      | Value        |
|---------------------------|--------------|
| CCP                       | CME          |
| collateralAllocationType  | Substitution |
| collateralCategory        | IEF2 Funds   |
| Generation by Allocation  | true         |
| IEF2                      | true         |
| MarginCallContractType    | IM           |
| 26T                       |              |
| AccountNumber             |              |
| AFMAPricingCashRate       |              |
| AFMAPricingSwapRate       |              |
| AFMAPricingTM             |              |
| AfterSettlementCutoffTime |              |

Apply Help Cancel

This will get both the trade and transfer tagged.

### 6.4.5 Haircut

Haircuts rules are setup on the Margin Call Contract under the details tab. You will need to create the haircuts specific to each fund as per the CME website. Using CME's IEF2 program as an example where there is a mandatory 3% haircut you would perform the following steps in order to record the haircut values.

To create a haircut you load the relevant CCP facing Margin Call Contract but you must first define an SD filter that will locate the security position you want to add a haircut to.

| Attribute                          | Criteria |     | Filter Value(s) |
|------------------------------------|----------|-----|-----------------|
| Product Type                       | IN       | Add | UnitizedFund    |
| PRODUCT_CODE.Collateral Investment | IN       | Add | TRUE            |

Then navigate to the details tab, and click **Show Haircut**:

The screenshot shows the 'Margin Call Window - Version - 21 (User: Bill Spota)' with the 'Details' tab selected. The 'Name' field contains 'CME IRD Client IM', the 'Description' field contains 'Calypso\_US IM, facing the CME for Client IRD Accounts', and the 'Subtype' is '21'. The 'Parent' field is empty. The 'Additional Info' tab is active, showing a table with the following data:

| Additional Info       |                                     |
|-----------------------|-------------------------------------|
| Position Type         | THEORETICAL                         |
| Position Date         | POSITION_DATE_DEFAULT               |
| <b>Haircut</b>        |                                     |
| Haircut Rule          | IEF                                 |
| Haircut Type          | Regular                             |
| Exclude Trade Haircut | <input checked="" type="checkbox"/> |

The 'Show Haircut' button is highlighted with a red box. Below the table, there are buttons for 'New', 'Save', 'Save As New', and 'Delete'.

It brings up the Haircut Rule Configuration GUI where you enter the PE, SD filter and finally add a haircut value.

**Haircut Rule Configuration (User: Bill Spota)**

Haircut Rule Help

Name : IEF

Definition Cross Currency

IEF2 Funds

Haircut Points

| Tenor | Date     | Offset | Haircut  |
|-------|----------|--------|----------|
| OPEN  | 08/07... | -1     | 0.030... |

Details

☐ Original Maturity

Cancel

New Save Save As Delete

You then choose the haircut rule you just saved in the details tab of the Margin Call Contract.

**Margin Call Window - Version - 21 (User: Bill Spota)**

Margin Call Config Util Help

Edit Browse

Name : CME IRD Client IM 164302 21 Subtype :

Description : Calypso\_US IM, facing the CME for Client IRD Accounts Parent :

Eligible Securities Eligible Currencies Concentration Optimization Child Configurations

Parties Details Dates & Times Initial Margin Independent Amount Additional Info

Show LA Define SD Show Haircut

|   |                                     |
|---|-------------------------------------|
| Position Type                               | THEORETICAL                         |
| Position Date                               | POSITION_DATE_DEFAULT               |
| <input checked="" type="checkbox"/> Haircut |                                     |
| Haircut Rule                                | IEF                                 |
| Haircut Type                                | Regular                             |
| Exclude Trade Haircut                       | <input checked="" type="checkbox"/> |

(Name)  
(Description)

New Save Save As New Delete

## 6.4.6 Inclusion in the Sequestered Fund Report

The money invested in the funds should appear in line 8A or 8B at market value, based on the fund attribute "SFR-8A" or "SFR-8B".

This information gets pulled from the Margin Call Position Valuation Report: any securities with product code "Collateral Investment = True" as of previous day's close of business (T-1) converted to USD based on FX Rate from quote set.

## 6.4.7 Configuration for Investing in Treasury Bonds

Imagine an FCM has excess client cash posted as collateral for which they are paying the client a fixed interest rate. In addition to investing client funds, the FCM can also borrow internally from another funding desk and then invest it into a non CCP Investment Vehicle (e.g. Government Securities).

Calypso recommends the FCM enter into a BOND transaction where the Counterparty can be Harris Bank or any other CFTC approved investment vehicle.

Unlike what is described above when creating a UnitizedFund where a new Product\_Code: Collateral Investment = TRUE, the FCM would need to create a new "Bond Collateral Investment" bond product.

This will ensure the bond used to invest into a Harris type investment vehicle will allow the following code changes to the SFR to work. Essentially, line 7b works off of account attributes instead of a Product Code. Here is a sample of the Account definition setup along with the respective attributes.

The screenshot shows the 'Accounts Definition' window for 'Bond Collateral Investments' (Id: 147696). The window has tabs for Account, Utilities, Reports, Process, and Help. The 'Account' tab is active, showing fields for Account Name, Processing Org, Ccy, Id, Type, External Name, Description, Legal Entity (F2), Role, and Creation Date. The 'Legal Entity (F2)' field is set to 'HARRIS BANK'. The 'Role' field is set to 'Agent'. The 'Properties/Attributes (F4)' button is highlighted.

The screenshot shows the 'Account Attributes Window' for 'Bond Collateral Investments'. It displays a table with attributes and their values:

| Name                  | Value |
|-----------------------|-------|
| Collateral Investment | true  |
| SequesteredAccount    | Bank  |
| AccountType           |       |

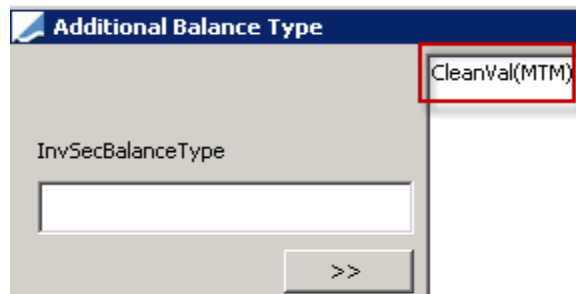
The LE was set to Harris Bank as this is where the Bond cash was settled. Note: You will need to create a Bond Collateral Investments account for each LE that will be holding the "Real Money Amount" for each Bond purchase and subsequent SDIs.

**Line 7B** - From the Inventory Position Report as of previous days close of business (T-1) take all accounts that have the "SequesteredAccount" attribute set to "BANK" as well as the attribute "Collateral Investment" set to True and calculate the values of any securities that fall into the aforementioned account criteria converted to USD based on FX Rate from quote set. The values will be determined by using the CleanVal(MTM) balance type which is the position quantity multiplied into the security clean price.

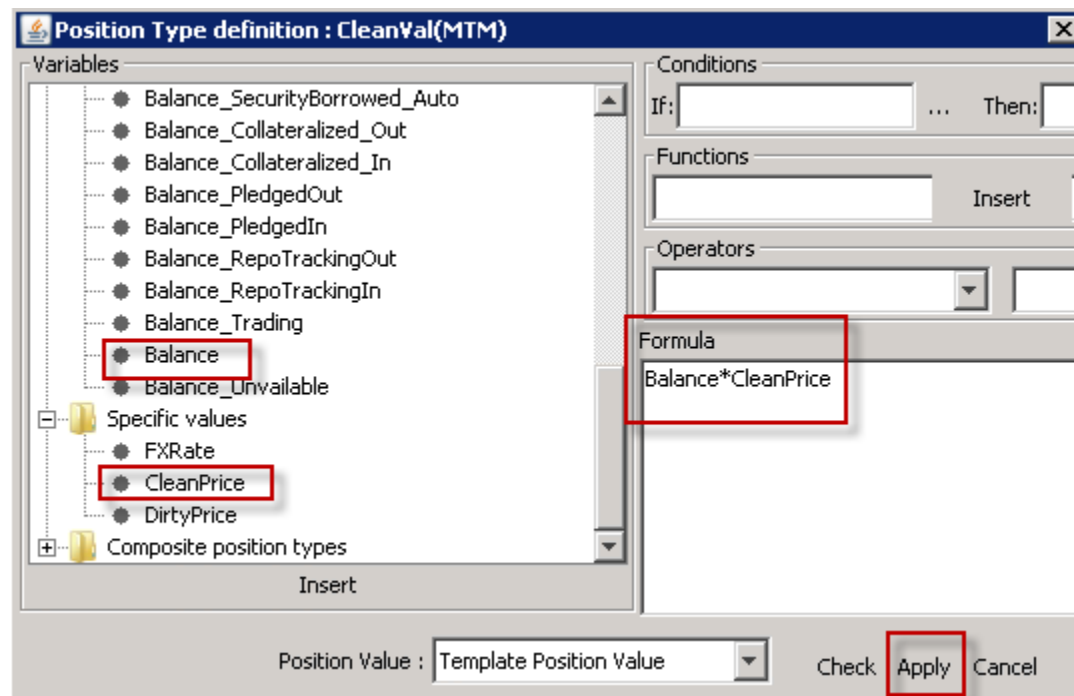
### Configuration Requirements

The premise behind the following configuration is to allow Calypso to generate the value of any bond using the CleanPrice on the Settlement so that your SFR amounts are not overstated.

Within the Inventory Position report, choose **Process > Create Balance Type**, and create the balance type "CleanVal(MTM)".



Then choose **Process > Define Balance Type** where you can create the formula to produce the CleanVal(MTM) balance type which is the position quantity multiplied into the security clean price.



Once you are done with the formula click **Apply**.

Then load up the Inventory Position report with the following parameters so that you can see the value of any settled Bond trade.

**InventoryPosition / Bill Test (User: Bill Spota)**

Report Data View Export Market Data Process Utilities Help

---

**Criteria**

Template Description: Clean Value Bond Price ☐ Use Tenor ☐ Use Snapshot

Start: 08/21/2013 End: 08/21/2013 Books: CALYPUS-C ProcessingOrg:

Position Date: Settle Aggregation: Agent/Account Securities:  Security Template:

Position Class: Internal Agent: BANK OF AMERICA Sec Code: BB\_CA... ☒ Include Issuances

Position Type: Actual Account Id:  SD Filter: NONE Agg. Type:

Position Value: Nominal Custom Filter:  Initialization Date: NONE ☐ Display Only Multiple Agent ☐ Explode Position

Position Direction: All ☐ Offset Pos Cash/Sec Security:  Movement Type: CleanVal(MTM) ☐ Filter Zero Balance ☒ Propagate To Cash

☐ Closing Bal. Node Expansion Level:

---

**Security**

| Movement Type | ProcessingOrg | Product Id | PRODUCT_CODE.ISIN | Prd Description   | Currency | Agent           | Account                | Position Type | Aug 21, 2013 |
|---------------|---------------|------------|-------------------|---|----------|-----------------|------------------------|---------------|--------------|
| CleanVal(MTM) |               | 278300     | US912828NZ91      | BondT 1 1/4 09/30/15 IEP Investment/5Y/09/30/2015/1.25% | USD      | BANK OF AMERICA | CALYPUS SEG-CLIENT     | ACTUAL        | 0.00         |
| CleanVal(MTM) |               | 6801       | US912828NZ91      | BondT 1 1/4 09/30/15/5Y/09/30/2015/1.25%                | USD      | BANK OF AMERICA | CALYPUS SEG-CLIENT-USD | ACTUAL        | 7,500,000.00 |
| CleanVal(MTM) |               | 6803       | US912810EX29      | BondT 6 3/4 08/15/26/30Y/08/15/2026/6.75%               | USD      | BANK OF AMERICA | CALYPUS SEG-CLIENT     | ACTUAL        | 0.00         |

The 7,500,000.00 represents the actual clean value of a settled bond where the calculation takes the Quantity \* CleanPrice. Bond details: Bond purchased with quantity of 5,000,000.00 at a price of 100.00. The closing quote for the bond is 150.00. So if you multiply 5,000,000.00 \* 1.50 you get 7,500,000.00.

You should also setup a formula for dirty price calculations on the Inventory Position report in the same way.

Add and save new balance type

**Additional Balance Type**

CleanVal(MTM)

**DirtyVal(MTM)**

InvSecBalanceType

**Position Type definition : DirtyVal(MTM)**

**Variables**

- Balance\_SecurityLent\_Auto
- Balance\_SecurityBorrowed\_Auto
- Balance\_Collateralized\_Out
- Balance\_Collateralized\_In
- Balance\_PledgedOut
- Balance\_PledgedIn
- Balance\_RepoTrackingOut
- Balance\_RepoTrackingIn
- Balance\_Trading
- Balance**
- Balance\_Unavailable
- Specific values
  - FXRate
  - CleanPrice
  - DirtyPrice**

**Conditions**

If:  ... Then:

**Functions**

(

**Operators**

**Formula**

Balance\*DirtyPrice

Position Value:  Template Position Value

Check Apply Cancel

You also need create the domain "SFR7BMovementType" to control what value of the bond trade you would like to be displayed on the SFR (i.e. Clean or Dirty) on line 7B. Example:

**SFR7BMovementType**

CleanVal(MTM)

## 6.4.1 Pledge the Bond at the CCP and Populate 8-B

The FCM will buy the bond from the street (reflected in SFR columns 7-a and 7-b) before pledging it to the CME (reflected in column 8-b).

It is expected that IM Standardization is in place, meaning that we maintain internal and external client position for IM.

Create new Allocation Attribute 'InvestmentBonds' in the Collateral Context window that will be passed down to the MarginCall Trade when the bond is allocated. This attribute will be used to drive the SDIs.

**Collateral Context Configuration**

Collateral Context Util Help

Name : EOD\_COLLATERAL\_CONTEXT 1005 61 ☐ Default

Description : 3.2.6-14.0.0.22.SP2-with-1400

Product Definition Position Definition Currency Definition Entry Attributes Allocation Attributes Workflow Pricing Context Attributes

| Name              | Type    | Category | Description | Mandatory                | Mandatory For Execu...   | Propagate                           |
|-------------------|---------|----------|-------------|--------------------------|--------------------------|-------------------------------------|
| CCPSettlementType | String  |          |             | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| PRODUCT_TYPE      | String  |          |             | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| CCP               | String  |          |             | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| InvestmentBonds   | Boolean |          |             | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

New Save Save As Delete Close

Allocate Bond and tick attribute to true.

**Collateral Allocation: FCM [14002SP2/V140TC/]**

Allocation Window Util

Apply Close Optimize ☐ Substitution Mode

Security Position Browser

Processing Org PO1

Position PO1

Books PO1

Security PO1

Load

| ProcessingOrg | Book                    | Product Id | PRODUCT_CODE.ISIN | Prd Description                     | Currency | Agent       | Account                          | Position Type | Oct 6 |
|---------------|-------------------------|------------|-------------------|-------------------------------------|----------|-------------|----------------------------------|---------------|-------|
| PO1           | PO1_CLIENT_CLEARING@CME | 29401      |                   | BondCollatInvTEST/10Y/01/13/2025/3% | USD      | HARRIS BANK | T-Bond Collateral Investment@CME | THEORETICAL   | 0     |
| PO1           | PO_FUNDING              | 29401      |                   | BondCollatInvTEST/10Y/01/13/2025/3% | USD      | HARRIS BANK | Bond Collateral Investments      | THEORETICAL   | 10    |
| PO1           | PO1_CLIENT_CLEARING@CME | 29401      |                   | BondCollatInvTEST/10Y/01/13/2025/3% | USD      | PO1         | T-Bond Collateral Investment@CME | THEORETICAL   | 0     |
| PO1           | PO1_CLIENT_CLEARING@CME | 29401      |                   | BondCollatInvTEST/10Y/01/13/2025/3% | USD      | HARRIS BANK | PO1-USD-SECURITY-NOSTRO-CLIENT   | THEORETICAL   | 0     |
| PO1           | PO1_CLIENT_CLEARING@CME | 29401      |                   | BondCollatInvTEST/10Y/01/13/2025/3% | USD      | PO1         | CPTYL CASH_SEC_USD@PO1           | THEORETICAL   | 0     |
| PO1           | PO1_CLIENT_CLEARING@CME | 29401      |                   | BondCollatInvTEST/10Y/01/13/2025/3% | USD      | HARRIS BANK | Bond Collateral Investments      | THEORETICAL   | 0     |

Security Cash Collateral Pool

Allocation - default

| Description                         | Direction | Quantity | Nominal (Current) | Currency | Price | Accrual | Value | FX Rate | Haircut | Book                    | Trade Date | Settlement Date | Attributes.InvestmentBonds          |
|-------------------------------------|-----------|----------|-------------------|----------|-------|---------|-------|---------|---------|-------------------------|------------|-----------------|-------------------------------------|
| BondCollatInvTEST/10Y/01/13/2025/3% | Pay       | 0.00     | 0.00              | USD      | 0     | 0       | 0.00  | 1.00    | 0       | PO1_CLIENT_CLEARING@CME | 10/07/2016 | 10/07/2016      | <input checked="" type="checkbox"/> |

Total 1

Allocation Netted Positions Pending Substitutions Summary Concentration Limits Concentration History Netted Allocation

calypso\_user FCM PO1\_CME\_CLIENT Allocation: ALLOCATED

**Margin Call SecurityTransfer(BondCollatInvTEST/10Y/01/13/2025/3%) -PO is CMF\_1...**

Trade Back Office Ma

Trade Details Fees

To CME Client Book IG@CME Status VERIFIED ID 29707

From CME CounterParty Trade Date 10/07/2016 12:00:00 AM Settle Date 10/07/2016

Pay Security Transfer Type SECURITY Contract Id 2101

Qty 6 Nominal 600.00 Security BondCollatInvTEST/10Y/01/13/2025/3%

Price 9,900 Accrual 0 SecCode CLEARL... USD

Value 59,400 Dirty Price 9,900 ☐ DAP ☐ Returned Security ☐ Pledged Security

Market Data Pricer Params Results

CME\_USD\_LIBOR\_3M\_DFR/USD(R)CLOSE 4/8/14 5:44:00.000 PM EDT

Val Date 02/06/2017 8:01:57 PM Pricing Env default Price Close

**Trade Attributes Window**

| Name                      | Value     |
|---------------------------|-----------|
| collateralCategory        | All_Bonds |
| collValue                 | 9,900     |
| InvestmentBonds           | true      |
| 13CTimeIndication         | 26T       |
| ACCOUNTING_CHARGE_ID      |           |
| AccountNumber             |           |
| AFMAPricingCashRate       |           |
| AFMAPricingSwapRate       |           |
| AFMAPricingTM             |           |
| AfterSettlementCutoffTime |           |
| Amort                     |           |

Apply Help Cancel

System will pick the CCPs DDA SDI based on the filter to which the security will be paid to.

**Settlement Delivery Instructions [140022SP2/V140TC/]**

Utilities Help

Edit Attributes & Notes Browse

SDI Id 15503

Reference 15503 Cash/Security BOTH

Role CounterParty Contact Default

Beneficiary CME Processing Org PO1

Benef. Na... Products MarginCall

Ccy USD SD Filter IsInvestmentBonds

Pay/Rec BOTH Trade CounterParty ALL

Description Direct/CME\_CLIENT\_IRS\_CASH\_IM\_USD@PO1 ☒ Preferred Priority 0

☐ Link SDI

Method Direct Add ☒ Direct

Identifier Effective From Effective To ☐ by Trade Date

Legend Intermediary1 Intermediary2 Direct

DDA T-Bond Collateral Investment@CME

**Static Data Filter Window [140022SP2/V140TC/]**

Name IsInvestmentBonds Attributes... Simulate...

Comment Pending Modifs

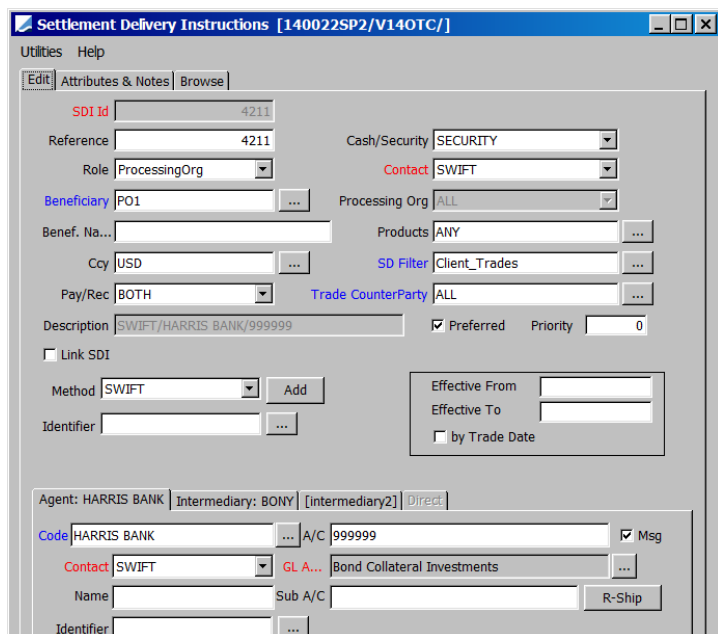
Groups ANY

| Attribute               | Criteria | Filter Value(s) |
|-------------------------|----------|-----------------|
| KEYWORD.InvestmentBonds | = IN     | Add true        |

Load New Delete Save Save as Usage Close

On PO Side, this SWIFT PAY SDI should be used to debit Nostro Security account





**Settlement Delivery Instructions [140022SP2/V140TC/]**

Utilities Help

Edit Attributes & Notes Browse

SDI Id 4211 Reference 4211 Cash/Security SECURITY

Role ProcessingOrg Contact SWIFT

Beneficiary PO1 Processing Org ALL

Benef. Na... Products ANY

Ccy USD SD Filter Client\_Trades

Pay/Rec BOTH Trade CounterParty ALL

Description SWIFT/HARRIS BANK/999999 ☒ Preferred Priority 0

☐ Link SDI

Method SWIFT Add

Identifier ...

Effective From Effective To ☐ by Trade Date

Agent: HARRIS BANK Intermediary: BONY [Intermediary2] Direct

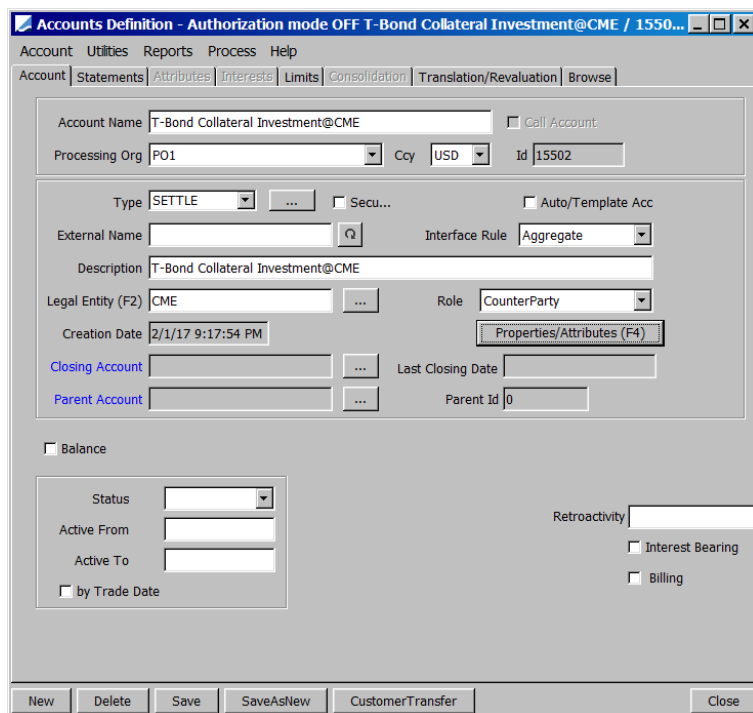
Code HARRIS BANK A/C 999999 ☒ Msg

Contact SWIFT GL A... Bond Collateral Investments

Name Sub A/C R-Ship

Identifier ...

The Direct account set up with CME should have account attribute 'Collateral Investment' set to true (SequesteredAccount should be null)



**Accounts Definition - Authorization mode OFF T-Bond Collateral Investment@CME / 1550...**

Account Utilities Reports Process Help

Account Statements Attributes Interests Limits Consolidation Translation/Revaluation Browse

Account Name T-Bond Collateral Investment@CME ☐ Call Account

Processing Org PO1 Ccy USD Id 15502

Type SETTLE ☐ Secu... ☐ Auto/Template Acc

External Name Interface Rule Aggregate

Description T-Bond Collateral Investment@CME

Legal Entity (F2) CME Role CounterParty

Creation Date 2/1/17 9:17:54 PM Properties/Attributes (F4)

Closing Account Last Closing Date

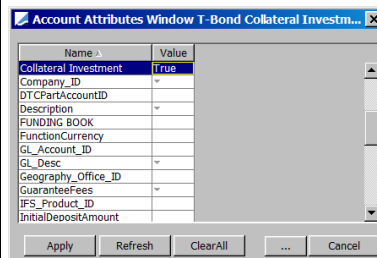
Parent Account Parent Id 0

☐ Balance

Status Active From Active To ☐ by Trade Date

Retroactivity ☐ Interest Bearing ☐ Billing

New Delete Save SaveAsNew CustomerTransfer Close

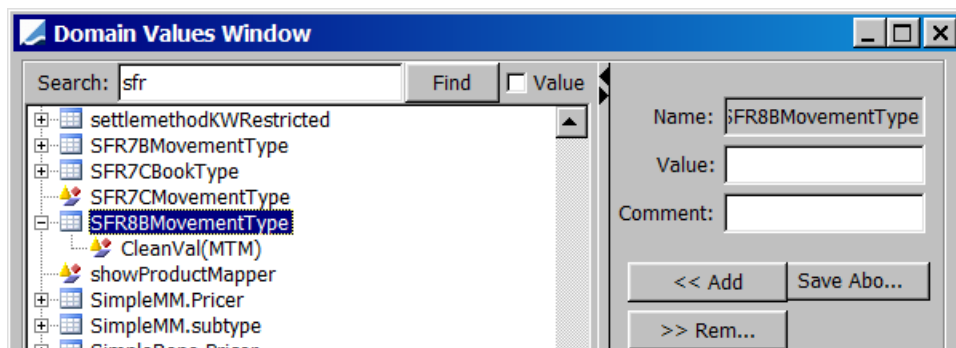


**Account Attributes Window T-Bond Collateral Investm...**

| Name                  | Value |
|-----------------------|-------|
| Collateral Investment | True  |
| Company_ID            |       |
| DT CPPartAccountID    |       |
| Description           |       |
| FUNDING BOOK          |       |
| FunctionCurrency      |       |
| GL_Account_ID         |       |
| GL_Desc               |       |
| Geography_Office_ID   |       |
| GuaranteeFees         |       |
| IFS_Product_ID        |       |
| InitialDepositAmount  |       |

Apply Refresh ClearAll ... Cancel

Similarly to SFR 7b, it is possible to configure the position type to be displayed by Clean or Dirty price. The system will re-use the same configurable balance type set up for 7b and look up a new domain SFR8BMovementType set to CleanVal(MTM) or DirtyVal(MTM) depending on the position type to be displayed.



The Position is sourced from the Inventory position based on following criteria:

Position Date: Settle

Position Class: Internal

Position Type: Actual

Position Value: Nominal

Cash/Sec: Security

MovementType: CleanVal(MTM) or DirtyVal(MTM) if specified in above domain value, else defaulted to Balance

Sum of values will be converted to USD

## Section 7. ERS Limits

In order for the trades to go through limits checking, you need to perform the following configurations.

### 7.1 Trade Filters

You need to create trade filters for the trades for which you want to check limits using [Configuration > Filters > Trade Filter](#) from the Calypso Navigator.

For example:

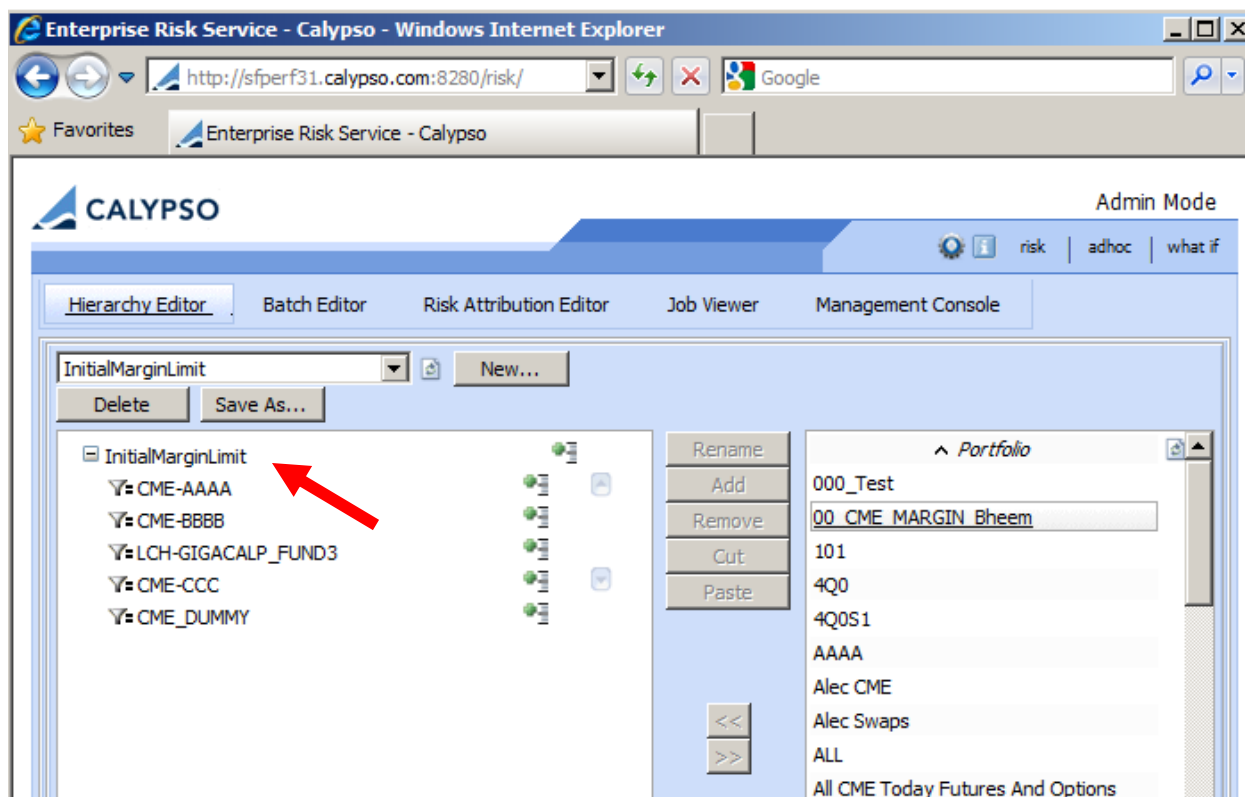
The screenshot shows the 'Trade Filter' configuration window. At the top, there are fields for 'Name' (CME-AAAA), 'Time Zone' (NONE), 'Comment', 'Holidays', and a 'Check Holidays' checkbox. Below these are checkboxes for 'Use SQL' and 'Cache trades on load', a 'Generate SQL' button, and a 'Parent' dropdown set to 'NONE'. A 'Set as default parent' checkbox is also present. A tabbed interface below shows various criteria categories: Post Processing, Position Spec, Counterparty, Fund, Diary Criteria, Ranges, Date / Time, Product Criteria, Trade Criteria (selected), Underlying Security, and Custom Criteria. The 'Trade Criteria' tab is active, showing a list of criteria with checkboxes for 'BUY' and 'SELL'. The criteria include 'Internal Reference' (checked IN), 'Bundle' (with an 'Id' dropdown), 'Bundle Attribute', 'Book' (checked IN), 'Trader' (checked IN), 'Status' (checked IN, with a value 'SENT GRANTED,CREDIT\_CONSENTED,LIMIT\_FAILED,VERIFIED'), 'Sales' (checked IN), 'Book Attribute', and 'Keyword Value' (with a value 'CCP Like [CME],CCPAccountReference Like [AAAA],IS\_CLIENT Like [true]'). Each criterion has a corresponding input field and a '...' button for further configuration.

### 7.2 Market Risk Hierarchy

You need to define a market risk hierarchy. Market risk hierarchies are created using ERS Risk.

Bring up ERS Risk and click Admin in the upper right-hand corner.

Then select the Hierarchy Editor.



Create a hierarchy as needed, and add nodes. The nodes correspond to Trade Filters.

If the trade filter contains a book, then the trade filter is used to select the trades. Otherwise, the system selects the trades for which the trade keyword LIMIT\_WHATIF\_PORTFOLIO is the node name.

**[NOTE: Each node name must be the same as a Trade Filter]**

➤ Please refer to the *Calypso ERS Risk User Guide* for details on using this window.

## 7.3 Pre-Deal Limit Configuration

Make sure that the product types for which you want to check limits are defined in domain "limit.products".

## 7.4 Limits Configuration

Bring up ERS Limits, and define limits for the hierarchy you have created under **Limits > View / Edit**.

Select the hierarchy you have created, and click **Load**.

Then click New in the upper right-hand corner, and select a measure you want to check limits against.

You can then define the limit amounts.

| Bucket | Limit       | Effective Date | Expiry Date |
|--------|-------------|----------------|-------------|
| Rates  | 1000000     | 29-Aug-2012    | 29-Aug-2013 |
| Aggr   | 150,000,000 | 16-Aug-2012    | 16-Aug-2013 |

Once you have defined limits, you need to authorize them before they become effective.

➤ Please refer to the *Calypso ERS Limits User Guide* for details on using these windows.

## 7.5 Limits Checking

The EOD limits usage is computed using the scheduled task ERS\_ANALYSIS for the ERS batch process that runs the Sim analysis on the market risk hierarchy.

You can create an ERS batch process under in ERS Risk under **Admin > Batch Editor** as in the example below.

| Analysis        | Portfolio          | Target Type | Parameter Set |
|-----------------|--------------------|-------------|---------------|
| OTCMarginReport | CME-AAAA           | Portfolio   | TYPED         |
| OTCMarginReport | CME-BBBB           | Portfolio   | TYPED         |
| OTCMarginReport | CME-CCC            | Portfolio   | TYPED         |
| OTCMarginReport | LCH-GIGACALP_FUND3 | Portfolio   | TYPEH         |
| Sim             | CME-AAAA           | Portfolio   | CME           |
| Sim             | CME-BBBB           | Portfolio   | CME           |
| Sim             | CME-CCC            | Portfolio   | CME           |
| Sim             | LCH-GIGACALP_FUND3 | Portfolio   | LCH           |

The scheduled task ERS\_ANALYSIS should be run at the end of the day on this batch process, after all other clearing activity is completed.

Sample setup:

|                                |   |                 |
|--------------------------------|---|-----------------|
| <b>Task Type</b>               | ERS_ANALYSIS  |                 |
| <b>External Reference</b>      | 07 - CME and LCH IM Batch for ERS   |                 |
| <b>Description</b>             |   |                 |
| <b>Attempts</b>                | 1   |                 |
| <b>Retry After, In Minutes</b> | 0   |                 |
| <b>Memory Settings</b>         | Min Memory 512 m  | Max Memory 1024 |
| <b>Allow Task To</b>           | <input type="checkbox"/> Send Emails <input type="checkbox"/> Publish Business Events |                 |
| <b>Common Attributes</b>       |   |                 |
| <b>Task Attributes</b>         |   |                 |
| Batch Name                     | InitialMarginLimit  |                 |
| Wait                           | false   |                 |
| ERS Services URL               |   |                 |
| Is Live                        | true  |                 |

The batch process is set in the Batch Name attribute.

When trades are received from the CCP, they go through the limits checking using the workflow rule CheckWhatIfLimits.

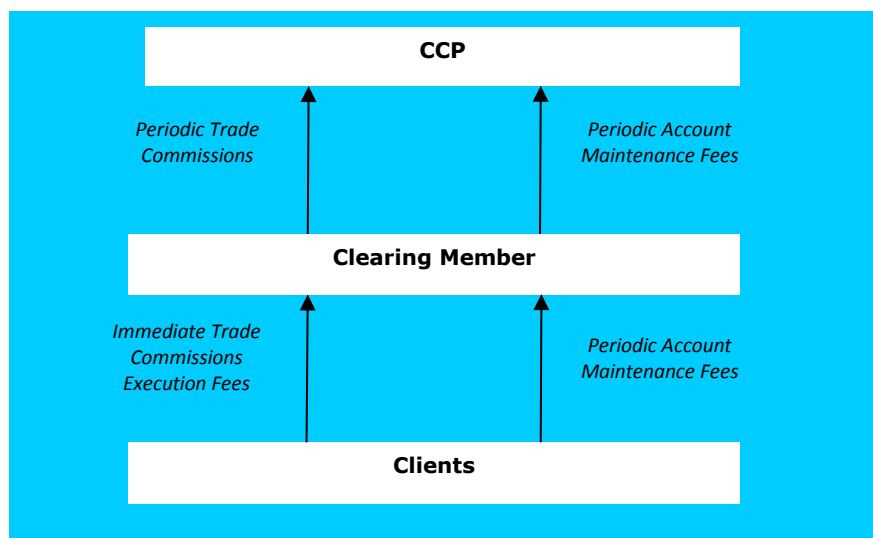
The following trade keywords are populated:

| Trade Keywords           | Description  |
|--------------------------|--|
| LIMIT_WHATIF_CHECK_PASS  | Displays Y if the What-If analysis returns a usage value that does not violate the defined Market Risk Limit. It displays N otherwise. |
| LIMIT_WHATIF_LIMIT_MAX   | Displays the maximum limit defined for the Market Risk Limit.  |
| LIMIT_WHATIF_RISK_USAGE  | Displays the usage value of the What-If analysis results.  |
| LIMIT_WHATIF_CHECK_ERROR | Displays Y if there is an error while checking the limits, or N (or empty) otherwise.  |

| Trade Keywords               | Description  |
|------------------------------|--|
| LIMIT_WHATIF_CHECK_ERROR_MSG | Displays an error message when LIMIT_WHATIF_CHECK_ERROR=Y. |
| LIMIT_WHATIF_PORTFOLIO       | ERS Limits portfolio.                                      |

## Section 8. Clearing Fees

The following types of clearing fees can be setup in the system.



The CCP charges commissions on the trades to the clearing member on a periodic basis, and the clearing member charges those commissions to the clients immediately.

The clearing member may also charge execution fees on the trades to the clients immediately.

The CCP also charges maintenance fees on the accounts to the clearing member on a periodic basis, and the clearing member charges those maintenance fees to the clients on a periodic basis as well.

Immediate trade fees, periodic trade fees, and account fees require a different setup.

### **Note on Swap Residual Maturity for Transaction Fees and Maintenance Fees**

[NOTE: This only applies to version 14.4 of Core Calypso, and above]

By default, the swap residual maturity is computed as:

Swap residual maturity = MAX(CCPclearedDate,StartDate) - End Date

You can change the behavior by adding the CCP name to the following domains:

- "TransactionAdjustedEndDate" for Transactions fees - The end date is adjusted based on the Date Roll convention if it falls on a holiday (applies to LCH).
- "TransactionStartDate" for Transaction fees - The start date is CCPclearedDate (applies to LCH).
- "MaintenanceAdjustedEndDate" for Maintenance fees - The end date is adjusted based on the Date Roll convention if it falls on a holiday (applies to LCH).
- "MaintenanceOriginalClearDate" for Maintenance fees - The start date is CCPOriginalClearedDate for netted trades (applies to LCH).
- "MaintenanceStartDate" for Maintenance fees - The start date is CCPclearedDate (applies to LCH and CME).

### 8.1 Clearing Member Commissions and Execution Fees

The clearing member charges commissions and execution fees on the trades to the clients immediately.

They are computed on the trades using the AutomaticFees workflow rule, which should be set on the workflow transitions once the trade is cleared: CLEARED - ENRICH - VERIFIED, VERIFIED - UPDATE - VERIFIED, etc.

See [Trade Workflows](#) for complete details on the trade workflow.



### 8.1.1 Fee Definition

From the Calypso Navigator, navigate to **Configuration > Fees, Haircuts, & Margin Calls > Fee Definition** to define the fee types, for example COMMISSION\_FEE and EXECUTION\_FEE.

**Fee Definition (User: calypso\_user)**

Type :

Role :

Fee Offset :  Cal

Products :

Default Calculator :

Include : ☒ Pricing ☒ Accounting ☐ Allocation  
☒ Transfer ☐ Settlement Amount

Comment :

| Fee Type       | Pricing                             | Transfer                            | Role         | Accounting                          | Settle Amount            |
|----------------|-------------------------------------|-------------------------------------|--------------|-------------------------------------|--------------------------|
| EXECUTION_FEE  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | CounterParty | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| COMMISSION_FEE | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | CounterParty | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### 8.1.2 Fee Grids

The Fee Grid is just a link to the Fee Config window where you can define the actual fee amounts. You need to define one fee grid for each fee type.

You can use a static data filter to restrict the application of the fees.

From the Calypso Navigator, navigate to **Configuration > Fees, Haircuts, & Margin Calls > Fee Grid**.

The Calculator must be set to "FeeConfig".

You also need to set the following attributes:

- TRADE\_DATE\_TYPE should be set to "CLEARED DATE" so that the fee will settle on the cleared date set in the trade keyword CCPClearedDate.
- ZeroAmount should be set to "false" so that the system will not generate any fees with 0 amount.

| Name            | Value        |
|-----------------|--------------|
| RELATED_FEE     |              |
| TRADE_DATE_TYPE | CLEARED DATE |
| ZeroAmount      | false        |

### 8.1.3 Fee Configs

You need to define one fee config for each fee type.

Note that for trade fees, the config type must always be set to "Trade Fee".

From the Calypso Navigator, navigate to **Configuration > Fees, Haircuts, & Margin Calls > Fee Config**.

Commission fees as specified below will be computed based on the trade notional. Depending on the trade's maturity we will apply x USD per million notional. E.g. for a 10 million trade maturing in 6 month: commission =  $10 \times 2 = 20$  USD.

**FeeConfigWindow**

Menu: [Icons]

Edit | Browse

| References     |                 |
|----------------|-----------------|
| Config ID      | 32515           |
| Name           | Commission fees |
| Config Type    | Trade Fee       |
| Rule Type      | Volume          |
| Scale By       | Notional        |
| Event Type     | Trade           |
| Fee Currency   | USD             |
| Effective From |                 |
| Effective To   |                 |
| Description    | SSGM -> CPTY    |

| Filters       |                |
|---------------|----------------|
| ProcessingOrg | SSGM LLC       |
| Legal Entity  | CPTY B         |
| Role          | CounterParty   |
| Fee Type      | COMMISSION_FEE |

| Formula |         |           |           |                 |           |
|---------|---------|-----------|-----------|-----------------|-----------|
| Min Amt | Max Amt | Min Tenor | Max Tenor | Formula         | Calc Unit |
| 0       | ∞       | 0D        | 1Y        | UnitNotional*2  | 1,000,000 |
| 0       | ∞       | 1Y        | 3Y        | UnitNotional*5  | 1,000,000 |
| 0       | ∞       | 3Y        | 6Y        | UnitNotional*9  | 1,000,000 |
| 0       | ∞       | 6Y        | 9Y        | UnitNotional*12 | 1,000,000 |
| 0       | ∞       | 9Y        | 12Y       | UnitNotional*16 | 1,000,000 |
| 0       | ∞       | 12Y       | 16Y       | UnitNotional*20 | 1,000,000 |
| 0       | ∞       | 16Y       | 21Y       | UnitNotional*25 | 1,000,000 |
| 0       | ∞       | 21Y       | 26Y       | UnitNotional*30 | 1,000,000 |
| 0       | ∞       | 26Y       | 50Y       | UnitNotional*35 | 1,000,000 |

Sample formula definition.

**Formula Definition**

| Ranges     |           |
|------------|-----------|
| Min Amount | 0         |
| Max Amount | ∞         |
| Min Tenor  | 0D        |
| Max Tenor  | 1Y        |
| Calc Unit  | 1,000,000 |

Formula: UnitNotional\*2

| Variables    | Operators |
|--------------|-----------|
| UnitNotional | *         |
| Notional     | /         |
| Quantity     | +         |
| ContractSize | -         |

OK Cancel

## 8.2 CCP Commissions and Maintenance Fees

The following periodic fees can be setup:

- The CCP charges commissions on the trades to the clearing member on a periodic basis – Example CME\_COMMISSION\_FEE.
- The CCP charges maintenance fees on the accounts to the clearing member on a periodic basis – Example CME\_MAINTENANCE\_FEE.
- The clearing member charges maintenance fees on the accounts to the clients on a periodic basis – Example MAINTENANCE\_FEE.

They are computed by the Billing engine based on billing grids and billing rules.

The fee types that you want to compute on a periodic bases must be defined in the domain BillingFeeType.



## 8.2.1 Billing Grids

The Billing Grid is a onetime configuration that should be as generic as possible. At least one billing grid is needed by billing event (trade, transfer, message, MaintenanceTrade, Account). The idea here is to link the fee calculation to the Fee Config window (via the calculator), and determine what date type should be used to generate the fee billing entry.

From the Calypso Navigator, navigate to **Configuration > Fees, Haircuts, & Margin Calls > Fee Grid** to define billing grids.

### Billing Grid for Trade Events

**Fee Grid Window (User: calypso\_user)**

Trade Fee Grid | Billing Grid | Browse

Grid Id: 0

Processing Org: ALL

Legal Entity: ALL

Event Type: Trade

Account: ALL

Ccy: ANY

Role: CounterParty

Fee Value Date: TradeClearedDate

SD Filter:

Valid from:

Valid to:

Description: Commissions

Calculator: FeeConfig

Add Remove

☐ Use Multiple Calculators

| Billing Calculators |                            |                  |            |          |             |             |          |
|---------------------|----------------------------|------------------|------------|----------|-------------|-------------|----------|
| Id                  | Type                       | StaticDataFilter | AmountType | Currency | Description | RefDateTime | TimeZone |
| 0                   | BillingFeeConfigCalculator |                  | AMOUNT     |          | NONE        |             |          |

- Role = CounterParty
- Fee Value Date = TradeClearedDate
- Calculator = FeeConfig

### Billing Grid for Trade Rebate Events

This billing grid only applies if a rebate is defined in the Fee Config.

**Fee Grid Window - Version - 2**

Trade Fee Grid | Billing Grid | Browse

Grid Id: 32548

Account: ALL

Processing Org: 55GM LLC

Ccy: ANY

Legal Entity: ALL

Role: CounterParty

Event Type: Trade

Fee Value Date: TradeClearedDate

SD Filter:

Valid from:

Valid to:

Description: Billing Trade Fee Rebates ALL

Calculator: TradeFeeRebate

Add Remove

☐ Use Multiple Calculators

Billing Calculators

| Id    | Type                            | StaticDataFilter | AmountType | Currency | Description | RefDateTime | TimeZon |
|-------|---------------------------------|------------------|------------|----------|-------------|-------------|---------|
| 32549 | BillingTradeFeeRebateCalculator |                  | AMOUNT     |          | NONE        |             |         |

- Role = CounterParty
- Fee Value Date = TradeClearedDate
- Calculator = TradeFeeRebate

## Billing Grid for Maintenance Trade Events

This billing grid will apply for ALL counterparties on MaintenanceTrade billing events, in our case MAINTENANCE\_FEE and CME\_ MAINTENANCE\_FEE. Note that "date" should be set to "CustomDate" since the billing frequency is determined on the Fee Config.

**Fee Grid Window (User: calypso\_user)**

Trade Fee Grid | Billing Grid | Browse

Grid Id: 0

Account: ALL

Processing Org: ALL

Ccy: ANY

Legal Entity: ALL

Role: CounterParty

Event Type: MaintenanceTrade

Fee Value Date: CustomDate

SD Filter:

Valid from:

Valid to:

Description: Maintenance Fees

Calculator: FeeConfig

Add Remove

☐ Use Multiple Calculators

Billing Calculators

| Id | Type                       | StaticDataFilter | AmountType | Currency | Description | RefDateTime | TimeZone | StartT |
|----|----------------------------|------------------|------------|----------|-------------|-------------|----------|--------|
| 0  | BillingFeeConfigCalculator |                  | AMOUNT     |          | NONE        |             |          |        |

- Role = CounterParty

- Fee Value Date = CustomDate
- Calculator = FeeConfig

## 8.2.2 Billing Rules

The Billing Rule determines the billing period, settle date, billing currency of the billing trade on which the billing fee entry will be generated. It is also possible to default certain billing trade entries such as the book and transfer type.

You need to define one billing rule per fee type.

From the Calypso Navigator, navigate to **Configuration > Fees, Haircuts, & Margin Calls > Fee Billing Rule** to define billing rules.

### CONTRACT REBATE

This config will apply for ALL counterparties in case a rebate applies.

Note that the attributes BillingOnly and EntryType are mandatory. BillingOnly should always be set to true and EntryType to the corresponding fee type.

**Fee Billing Rule Window - Version - 4**

Edit | Browse

Id: 32561 SD Filter: [v]

Processing Org: SSGM LLC Role: CounterParty

Legal Entity: ALL ... Effective To: [v]

Effective From: [v] Billing Ccy: USD

Billing Asset Type: NEXT\_BILLING\_DATE Holidays: NYC

Billing Date Rule: EOM CAL ... Sett. Date Rule: EOM+1BUS

Adjust. Days: 0 ☐ Bus. Days Billing Asset Threshold: 0

Billing Threshold: 0 Input Date Type: TradeDate

New Delete Save SaveAsNew Add Attributes

Defaults Trade Billing Values

Book: BILLING\_BOOK Bundle: [v] KwdAgent: [v] XferType: REBATE

**Attributes Window**

Domain ...

| Name                | Value           |
|---------------------|-----------------|
| BillingOnly         | true            |
| DefaultBook         | BILLING_BOOK    |
| DefaultTransferType | REBATE          |
| EntryType           | CONTRACT REBATE |

## MAINTENANCE\_FEE

You can select a given client (counterparty) as needed.

**Fee Billing Rule Window - Version - 2**

Edit | Browse |

Id: 32559 SD Filter: [v]

Processing Org: SSGM LLC Role: CounterParty [v]

Legal Entity: CPTY B [v] Effective To: [v]

Effective From: [v] Billing Ccy: USD [v]

Billing Asset Type: NEXT\_BILLING\_DATE [v] Holidays: NYC

Billing Date Rule: EOM CAL [v] Sett. Date Rule: EOM+1BUS

Adjust. Days: 0 [v] Bus. Days: [v] Billing Asset Threshold: 0 [v]

Billing Threshold: 0 [v] Input Date Type: TradeDate [v]

New Delete Save SaveAsNew Add Attributes

Defaults Trade Billing Values

Book: BILLING\_BOOK [v] Bundle: [v] KwdAgent: [v] XferType: MAINTENANCE [v]

**Attributes Window**

Domain ...

| Name                | Value           |
|---------------------|-----------------|
| BillingOnly         | true            |
| DefaultBook         | BILLING_BOOK    |
| DefaultTransferType | MAINTENANCE     |
| EntryType           | MAINTENANCE_FEE |

## CME\_MAINTENANCE\_FEE

This rule will only apply for maintenance fees that will be charged from the CCP (CME in this example).

**Fee Billing Rule Window - Version - 5**

Edit | Browse |

Id: 32562 SD Filter: [ ]

Processing Org: SSGM LLC Role: CounterParty

Legal Entity: CME ... Effective To: [ ]

Effective From: [ ] Billing Ccy: USD

Billing Asset Type: NEXT\_BILLING\_DATE Holidays: NYC

Billing Date Rule: EOM CAL ... Sett. Date Rule: EOM+1BUS

Adjust. Days: 0 ☐ Bus. Days Billing Asset Threshold: 0

Billing Threshold: 0 Input Date Type: TradeDate

New Delete Save SaveAsNew Add Attributes

Defaults Trade Billing Values

Book: BILLING\_BOOK Bundle: [ ] KwdAgent: [ ] XferType: CME\_MAINTENA...

**Attributes Window**

Domain ...

| Name                | Value               |
|---------------------|---------------------|
| BillingOnly         | true                |
| DefaultBook         | BILLING_BOOK        |
| DefaultTransferType | CME_MAINTENANCE     |
| EntryType           | CME_MAINTENANCE_FEE |
| XferByBook          | false               |

## CME\_COMMISSION\_FEE

This rule is for CME only since the commissions charged by the clearing member are charged directly on the trades.



**Fee Billing Rule Window - Version - 0**

Edit | Browse

Id: 32563 SD Filter: [ ]

Processing Org: SSGM LLC Role: CounterParty

Legal Entity: CME Effective To: [ ]

Effective From: [ ] Billing Ccy: USD

Billing Asset Type: NEXT\_BILLING\_DATE Holidays: NYC

Billing Date Rule: EOM CAL Sett. Date Rule: EOM+1BUS

Adjust. Days: 0 ☐ Bus. Days Billing Asset Threshold: 0

Billing Threshold: 0 Input Date Type: TradeDate

New Delete Save SaveAsNew Add Attributes

Defaults Trade Billing Values

Book: BILLING\_BOOK Bundle: [ ] KwdAgent: [ ] XferType: CME\_COMMISSION

**Attributes Window**

Domain ...

| Name                | Value              |
|---------------------|--------------------|
| BillingOnly         | true               |
| DefaultBook         | BILLING_BOOK       |
| DefaultTransferType | CME_COMMISSION     |
| EntryType           | CME_COMMISSION_FEE |
| XferByBook          | false              |

## 8.2.3 Fee Configs

You need to define one fee config for each type of fee. The billing rule is linked to the fee config via the attribute EntryType.

From the Calypso Navigator, navigate to **Configuration > Fees, Haircuts, & Margin Calls > Fee Config** to define fee configs.

### MAINTENANCE\_FEE

Maintenance fees are generated on account balances.

On the account for which you want to generate the fees, you need to check the Billing checkbox.

Maintenance fees are triggered by the event MaintenanceTrade which is generated by the scheduled task ACCOUNT\_BILLING.

NOTE: You can set the legal entity attribute WAIVE FIRST to true to waive the first billing fee.

Scheduled task ACCOUNT\_BILLING:

**Scheduled Task Window [111004SP5/ssgntest/matthieu\_calypso]**

Report Tools Help

Definition | Report

? Type **ACCOUNT\_BILLING** Description

Trade Filter **ALL** Pricing Env

User **calypso\_user** Filter Set

Measures

Time Zone **US/Eastern** Exec Time H M

From Days **0** To **0** Valuation Time **12** H **0** M

Holidays **NYC** Undo Time H M

☐ Skip Exec CutOff **0** Hour **0** Min ☒ Execute

Attributes

| Attribute        | Value             |
|------------------|-------------------|
| ACCOUNT NAME     |                   |
| LEGAL_ENTITY     |                   |
| SD_FILTER        |                   |
| CHECK FEE CONFIG | True              |
| PROCESS          | Maintenance Trade |

☐ Publish

Comment

Fee Config:

**FeeConfigWindow**

Menu

Edit | Browse

References

|                |                          |
|----------------|--------------------------|
| Config ID      | 32578                    |
| Name           | Maintenance Fees         |
| Config Type    | Billing Fee              |
| Rule Type      | Maintenance              |
| Scale By       | Notional                 |
| Tiered         | <input type="checkbox"/> |
| Event Type     | MaintenanceTrade         |
| Fee Currency   |                          |
| Effective From |                          |
| Effective To   |                          |
| Description    | SSGM -> CPTY             |

Filters

|                  |                 |
|------------------|-----------------|
| ProcessingOrg    | SSGM LLC        |
| Legal Entity     | CPTY B          |
| Role             | Ci              |
| Billing Fee Type | MAINTENANCE_FEE |
| Exchange         |                 |
| Product Type     | Swap            |
| Security ID      |                 |
| Book             |                 |
| Book Attr        |                 |
| Currency         |                 |
| Account ID       |                 |
| Fee Date         | QUARTERLY       |

Formula

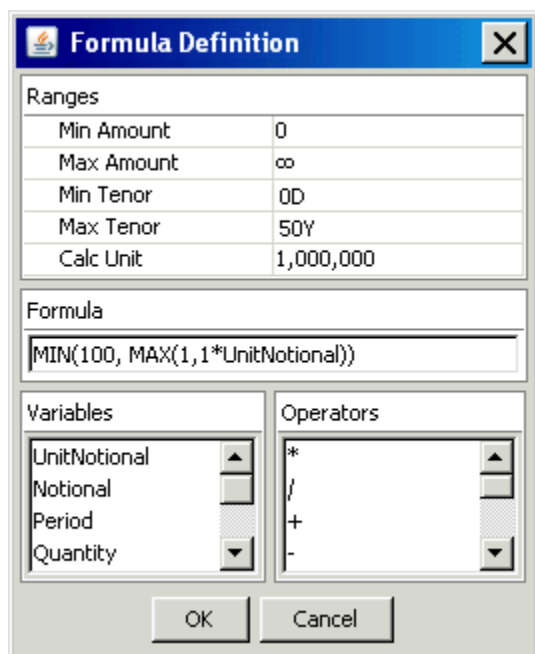
Add Edit Delete

| Min Amt | Max Amt | Min Tenor | Max Tenor |
|---------|---------|-----------|-----------|
| 0       | ∞/00    |           | 50Y       |

- Config Type = Billing Fee
- Rule Type = Maintenance
- Event Type = MaintranceTrade

- Billing Fee Type = EntryType set on Billing Rule = Billing fee type
- Fee Date = Fee frequency

Sample formula



**Formula Definition**

| Ranges     |           |
|------------|-----------|
| Min Amount | 0         |
| Max Amount | ∞         |
| Min Tenor  | 0D        |
| Max Tenor  | 50Y       |
| Calc Unit  | 1,000,000 |

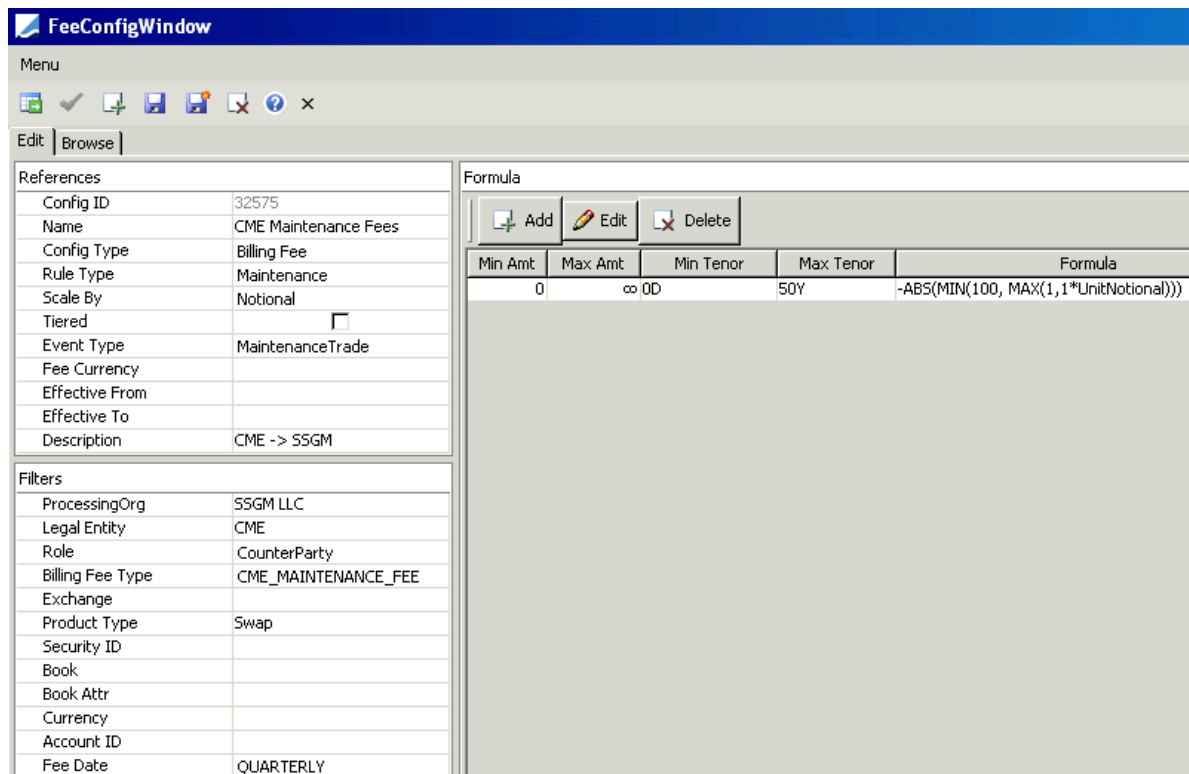
Formula  
`MIN(100, MAX(1, 1*UnitNotional))`

| Variables    | Operators |
|--------------|-----------|
| UnitNotional | *         |
| Notional     | /         |
| Period       | +         |
| Quantity     | -         |

OK Cancel

## CME\_MAINTENANCE\_FEE

Similar setup to MAINTENANCE\_FEE.



**FeeConfigWindow**

Menu

Edit | Browse

| References     |                          |
|----------------|--------------------------|
| Config ID      | 32575                    |
| Name           | CME Maintenance Fees     |
| Config Type    | Billing Fee              |
| Rule Type      | Maintenance              |
| Scale By       | Notional                 |
| Tiered         | <input type="checkbox"/> |
| Event Type     | MaintenanceTrade         |
| Fee Currency   |                          |
| Effective From |                          |
| Effective To   |                          |
| Description    | CME -> SSGM              |

| Filters          |                     |
|------------------|---------------------|
| ProcessingOrg    | SSGM LLC            |
| Legal Entity     | CME                 |
| Role             | CounterParty        |
| Billing Fee Type | CME_MAINTENANCE_FEE |
| Exchange         |                     |
| Product Type     | Swap                |
| Security ID      |                     |
| Book             |                     |
| Book Attr        |                     |
| Currency         |                     |
| Account ID       |                     |
| Fee Date         | QUARTERLY           |

Formula

Add Edit Delete

| Min Amt | Max Amt | Min Tenor | Max Tenor | Formula                                |
|---------|---------|-----------|-----------|--|
| 0       | ∞       | 0D        | 50Y       | -ABS(MIN(100, MAX(1, 1*UnitNotional))) |

## CME\_COMMISSION\_FEE

This fee is generated by the Billing engine based on trade events.

The screenshot shows the 'FeeConfigWindow' application. It has a menu bar with icons for file operations and a toolbar with 'Edit' and 'Browse' buttons. The main area is divided into three sections: 'References', 'Filters', and 'Formula'.

**References:**

|                |                          |
|----------------|--------------------------|
| Config ID      | 32565                    |
| Name           | CME Commission fees      |
| Config Type    | Billing Fee              |
| Rule Type      | Volume                   |
| Scale By       | Notional                 |
| Tiered         | <input type="checkbox"/> |
| Event Type     | Trade                    |
| Fee Currency   | USD                      |
| Effective From |                          |
| Effective To   |                          |
| Description    | CME -> SSGM              |

**Filters:**

|                  |                    |
|------------------|--------------------|
| ProcessingOrg    | SSGM LLC           |
| Legal Entity     | CME                |
| Role             | CounterParty       |
| Billing Fee Type | CME_COMMISSION_FEE |

**Formula:**

| Min Amt | Max Amt | Min Tenor | Max Tenor | Formula               |
|---------|---------|-----------|-----------|-----------------------|
| 0       | ∞       | 0D        | 1Y        | -ABS(UnitNotional*2)  |
| 0       | ∞       | 1Y        | 3Y        | -ABS(UnitNotional*5)  |
| 0       | ∞       | 3Y        | 6Y        | -ABS(UnitNotional*9)  |
| 0       | ∞       | 6Y        | 9Y        | -ABS(UnitNotional*12) |
| 0       | ∞       | 9Y        | 12Y       | -ABS(UnitNotional*16) |
| 0       | ∞       | 12Y       | 16Y       | -ABS(UnitNotional*20) |
| 0       | ∞       | 16Y       | 21Y       | -ABS(UnitNotional*25) |
| 0       | ∞       | 21Y       | 26Y       | -ABS(UnitNotional*30) |
| 0       | ∞       | 26Y       | 50Y       | -ABS(UnitNotional*35) |

## 8.2.4 Billing Trades

The Billing engine is used to create the billing fees.

It must subscribe to the following events:

- PSEventTrade
- PSEventAccountBilling
- PSEventMaintenanceTrade

### Version 14.0+

Make sure that the Billing engine is set in the parameter "engines.startup" of "<calypso home>/deploy/EngineStartupConfig.properties":

```
engines.startup=TransferEngine,MessageEngine,InventoryEngine,AccountingEngine,LiquidationEngine,PositionEngine,TaskEngine,LifeCycleEngine,BillingEngine
```

You can start the Billing engine as part of the Engine server using "<calypso home>/startEngineserver.bat" on Windows platforms, or "<calypso home>/startEngineserver.sh" on \*nix platforms.

### Version 14.1+

The Billing engine is configured in the Engine Manager of Web Admin: event subscription and engine parameters. You may need to add this engine if it is not available for configuration: Create a new engine called BillingEngine, with class name `com.calypso.engine.billing.BillingEngine`.

The Billing engine can be started from the Engine Manager in Web Admin.

Please refer to Calypso Web Admin documentation for complete details.

## Sample CME\_COMMISSION\_FEE

**Billing(-900.00 USD) -PO is State Street Global Markets LLC (60894) - Version : 0 Mod User : (a...**

Trade Back Office Billing Analytics Pricing Env Market Data Utilities Help Template

Trade Details Fees Billing Fees

To CME CounterParty Book BILLING\_BO... Status VERIFIED ID 60894

From ProcessingOrg Trade Date 04/01/2011 11:43:44 AM Settle Date 05/02/2011

Start Date 04/01/2011 End Date 04/30/2011

Pay Transfer Type CME\_COMMISSION Account Id 31380 CPTYB@CME

Fee Billing Id 32563

Principal 900.00 Ccy USD Template NONE

Adjustment 0.00

| Trade Details Fees Billing Fees |            |                    |              |          |                  |    |
|---------------------------------|------------|--------------------|--------------|----------|------------------|----|
| Legal Entity                    |            |                    | CounterParty |          |                  |    |
| Billing Event                   |            |                    | Billing Grid |          |                  |    |
| Date                            | Value Date | Amount Type        | Amount       | Currency | Converted Amount | Mk |
| 04/06/2011                      | 04/06/2011 | CME_COMMISSION_FEE | (900.00)     | USD      | (900.00)         |    |

As more trades are entered into the system, more billing fees are added to the same billing trades.

| Trade Details Fees Billing Fees |            |                    |              |          |                  |    |
|---------------------------------|------------|--------------------|--------------|----------|------------------|----|
| Legal Entity                    |            |                    | CounterParty |          |                  |    |
| Billing Event                   |            |                    | Billing Grid |          |                  |    |
| Date                            | Value Date | Amount Type        | Amount       | Currency | Converted Amount | Mk |
| 04/06/2011                      | 04/06/2011 | CME_COMMISSION_FEE | (900.00)     | USD      | (900.00)         |    |
| 04/08/2011                      | 04/08/2011 | CME_COMMISSION_FEE | (1,100.00)   | USD      | (1,100.00)       |    |

Sample MAINTENANCE\_FEE

**Billing(85.00 USD) -PO is State Street Global Markets LLC (60890) - Version : 1 Mod User :(ad...**

Trade Back Office Billing Analytics Pricing Env Market Data Utilities Help Template

Trade | Details | Fees | Billing Fees

From CPTY B ... CounterParty Book BILLING\_BO... Status VERIFIED ID 60890

To ... ProcessingOrg Trade Date 07/01/2011 11:27:17 AM Settle Date 08/01/2011

Start Date 07/01/2011 End Date 07/31/2011

Receive Transfer Type MAINTENANCE Account Id 31378 CPTYB@SSGM

Fee Billing Id 32559

Principal 85.00 Ccy USD

Adjustment 0.00 Template NONE

Trade | Details | Fees | Billing Fees

Legal Entity CME CounterParty

Billing Event Billing Grid

| Date       | Value Date | Amount Type     | Amount | Currency | Converted Amount |
|------------|------------|-----------------|--------|----------|------------------|
| 07/06/2011 | 07/06/2011 | MAINTENANCE_FEE | 30.00  | USD      | 30.00            |
| 07/08/2011 | 07/08/2011 | MAINTENANCE_FEE | 55.00  | USD      | 55.00            |

## Rebate Process

In case a rebate is configured on the Fee Config, rebate entries are generated using the EOD\_REBATE\_FEE scheduled task.

The rebate process adjusts the fee rate based on all the events of the billing period (Default rebate type), or applies a discount based on the total fee amount and the discount schedule (Discount rebate type).

The EOD\_REBATE\_FEE scheduled task must be run daily. It retrieves the billing trades for which the end date falls on the scheduled task valuation date.

The system creates new billing entries of type REBATE to book the difference between the billing fee amount originally computed, and the billing fee amount computed at the end of the period, once the actual fee rate is known / discount is applied. There is one REBATE billing entry per trading book.

**Scheduled Task Window [120100/release\_clearing/]calypso\_user**

Report Tools Help

Definition Report

? Type **EOD\_REBATE\_FEE** Description **Compute rebate of BILLING fees**

Trade Filter **SWAP TRADES** Pricing Env **default**

User **calypso\_user** Filter Set

Measures

Time Zone **America/New\_York** Exec Time H M

From Days **0** To **0** Valuation Time **12** H **0** M

Holidays ... Undo Time H M

☐ Skip Exec CutOff **0** Hour **0** Min

Attributes

| Attribute    | Value     |
|--------------|-----------|
| Contract Fee | False     |
| APPLY ACTION | AUTHORIZE |
| LegalEntity  |           |

☒ Execute ☐ Publish

Comment

**Enter Val Date and ...**

Val Date **03/31/2012**

Val Time **12:00:00 PM**

Scheduling Engine ☒ Run locally

OK Annuler

Refer to *Calypso Fees* documentation for details on using these windows.

## 8.3 Initial Margin Fees

The CCPs charge fees on the initial margin requirements.

Billing events are generated by the scheduled task `CLEARING_BILLING` based on account positions. The Billing engine subscribes to the billing events to generate the fees (billing trades) based on billing grids and fee billing rules.

The Billing Grid calculator "InitialMarginFee" computes fees of type `IM_BASED_FEE`, on a periodic basis, using the scheduled task `CLEARING_BILLING` and the Billing engine.

The scheduled task `CLEARING_BILLING` will only process accounts for which the Billing checkbox is checked.

Make sure that you add `IM_BASED_FEE` to the domain "BillingFeeType".

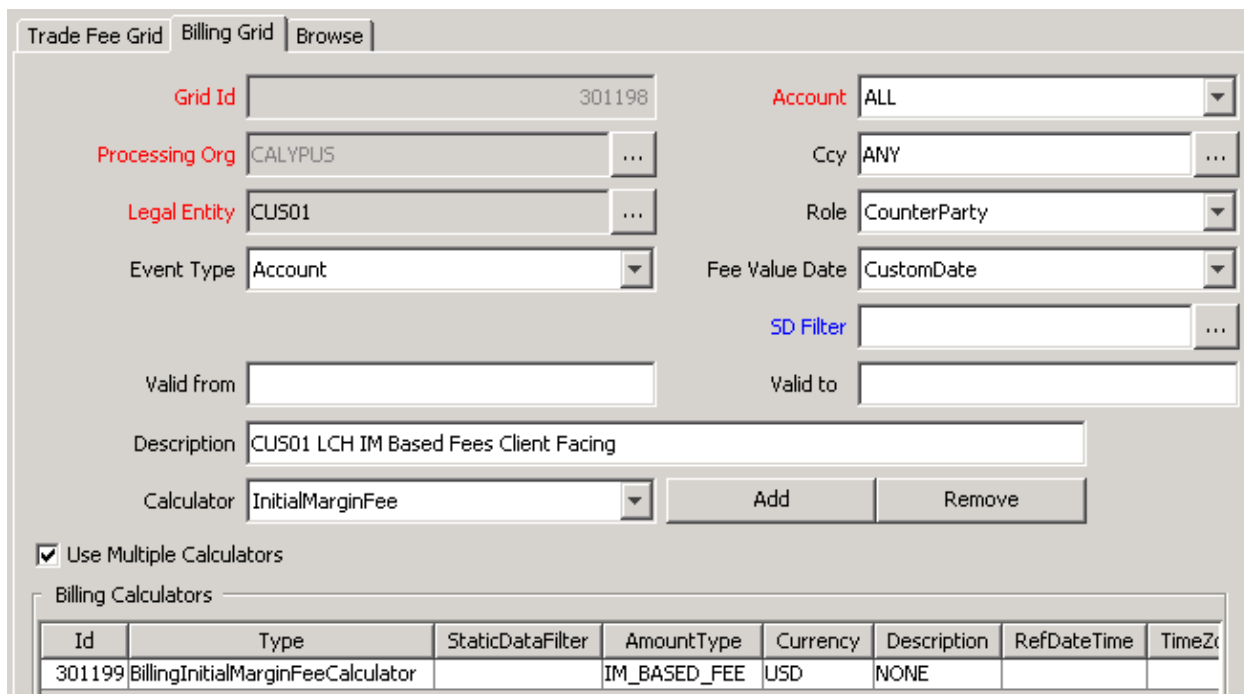
You also need to add `BillingInitialMarginFeeCalculator` to the domain "billingCalculator".

The billing role of CCP-Facing trades is set to the role defined in the domain "Clearing.BillingFeeCCPReceiverRole". If not set, the fee is generated using the role from the billing grid.

Setup details are described in the following sections.

### 8.3.1 Billing Grid

Choose **Main Entry > Configuration > Fees, Haircuts, & Margin Calls > Fee Grid**, and select the Billing Grid panel to define billing grids.



Trade Fee Grid | **Billing Grid** | Browse

Grid Id: 301198

Processing Org: CALYPUS

Legal Entity: CUS01

Event Type: Account

Account: ALL

Ccy: ANY

Role: CounterParty

Fee Value Date: CustomDate

SD Filter:

Valid from:

Valid to:

Description: CUS01 LCH IM Based Fees Client Facing

Calculator: InitialMarginFee

Add Remove

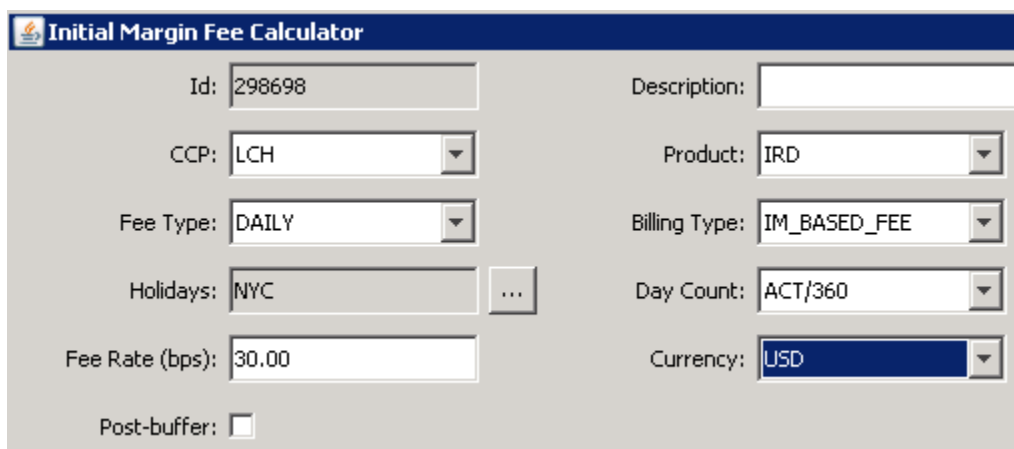
☒ Use Multiple Calculators

Billing Calculators

| Id     | Type                              | StaticDataFilter | AmountType   | Currency | Description | RefDateTime | TimeZ |
|--------|-----------------------------------|------------------|--------------|----------|-------------|-------------|-------|
| 301199 | BillingInitialMarginFeeCalculator |                  | IM_BASED_FEE | USD      | NONE        |             |       |

Enter the criteria as needed.

Select the calculator BillingInitialMarginFeeCalculator and click **Add**.



**Initial Margin Fee Calculator**

Id: 298698

Description:

CCP: LCH

Product: IRD

Fee Type: DAILY

Billing Type: IM\_BASED\_FEE

Holidays: NYC

Day Count: ACT/360

Fee Rate (bps): 30.00

Currency: USD

Post-buffer: ☐

The Daily fee type uses the previous day's IM Requirement to calculate each day's Fee, and carries the calculation forward to include the non-business days that immediately follow a given date. For example, the Fee calculated for a Friday will be generated for 3 days to cover Friday, Saturday and Sunday.

The Daily fee type inserts a unique Fee into the Billing Trade for each day that the scheduled task is run. The sum of these Daily Fees will be the Monthly Total. The Fee currency for the Daily Fee is expected to be in the currency of the Requirement, so there is no FX Conversion logic.

You can also select the currency as needed to define different IM requirements by currency.



If you check "Post-Buffer" the base amount to compute the fee is the Net Balance of the margin call contract (which takes the buffers into account). Otherwise, it is the pricer measure MARGIN\_CALL.

The ProductType attributes needs to match the "Product" field specified for the BillingInitialMarginFeeCalculator.

| Account Attributes Window MAPPING CUS01 CME-SWAP (141221) |        |
|---|--------|
| Name  | Value  |
| IS_IEF4   | true   |
| ProductType   | IRD    |
| AccountType   | Client |
| Clearing Book   | CUS01  |

### 8.3.2 Fee Billing Rule

The billing rule allows defining the billing frequency, and a billing threshold if needed.

Define the billing rule using **Main Entry > Configuration > Fees, Haircuts & Margin Calls > Fee Billing Rule** (menu action `refdata.FeeBillingRuleWindow`).

**Fee Billing Rule Window - Version - 5**

Id: 302700 SD Filter:

Processing Org: CALYPUS Role: CounterParty

Legal Entity: CUS01 Effective To:

Effective From: 01/01/2009 Billing Ccy: USD

Billing Asset Type: IMMEDIATE Holidays:

Billing Date Rule: @End of Month Sett. Date Rule: @7th Business Day of Month

Adjust. Days: 0 ☐ Bus. Days Billing Asset Threshold: 0

Billing Threshold: 0 Input Date Type: TradeDate

Defaults Trade Billing Values

|       |        |          |              |
|-------|--------|----------|--------------|
| Book  | Bundle | KwdAgent | XferType     |
| CUS01 |        |          | IM_BASED_FEE |

- » Click **Add Attributes** to add the EntryType attribute.

| Name                | Value        |
|---------------------|--------------|
| Billing Fee Type    | IM_BASED_FEE |
| BillingOnly         | true         |
| DefaultBook         | CUS01        |
| DefaultTransferType | IM_BASED_FEE |
| EntryType           | IM_BASED_FEE |

Set EntryType = User-defined fee, "IM\_BASED\_FEE" in this example.

### 8.3.3 Fee Generation

Configure the CLEARING\_BILLING scheduled task.

|                                      |  |
|--------------------------------------|--|
| <b>Task Description</b>              |  |
| Task Type:                           | CLEARING_BILLING   |
| External Reference:                  | 0.50 CALYPUS - LCH   |
| Comments:                            | Generates Account Event to Trigger Generation of IM Based Fees |
| Description:                         | Generates Account Event to Trigger Generation of IM Based Fees |
| <b>Execution Parameters</b>          |  |
| Attempts:                            | 1  |
| Retry After:                         | 0 minutes  |
| Expected Execution Time              |  |
| JVM Settings:                        | -Xms512m -Xmx1024m -XX:MaxPermSize=256m                        |
| Log Settings:                        |  |
| <b>Task Notification Options</b>     |  |
| <input type="checkbox"/> Send Emails | <input type="checkbox"/> Publish Business Events               |
| To User:                             |  |
| <b>+ Common Attributes</b>           |  |
| <b>- Task Attributes</b>             |  |
| CCP                                  | LCH  |
| PRODUCT TYPE                         | IRD  |

- » Select the CCP for which you want to generate the fees.
- » Select the product type as needed.

[NOTE: For the CME IM fee, the scheduled task should be run only at the end of the month]

If the business holidays are set, and the valuation date is a holiday, the scheduled task fails. You can monitor the exception in the Task Station:

- Add EX\_CLEARING\_BILLING to the domain "eventType".
- Add CLEARING\_BILLING to the domain "exceptionType".

The scheduled task looks up the clearing account and generates PSEventAccountBilling events based on the billing grid.

The Billing engine subscribes to PSEventAccountBilling events and generates billing trades based on the billing rule.

#### Version 14.0+

Make sure that the Billing engine is set in the parameter "engines.startup" of "<calypso home>/deploy/EngineStartupConfig.properties":

```
engines.startup=TransferEngine,MessageEngine,InventoryEngine,AccountingEngine,LiquidationEngine,PositionEngine,TaskEngine,LifeCycleEngine,BillingEngine
```

You can start the Billing engine as part of the Engine server using "<calypso home>/startEngineserver.bat" on Windows platforms, or "<calypso home>/startEngineserver.sh" on \*nix platforms.

**Version 14.1+**

The Billing engine is configured in the Engine Manager of Web Admin: event subscription and engine parameters. You may need to add this engine if it is not available for configuration: Create a new engine called BillingEngine, with class name `com.calypso.engine.billing.BillingEngine`.

The Billing engine can be started from the Engine Manager in Web Admin.

➤ Please refer to Calypso Web Admin documentation for complete details.

The book is set on the billing trades according to the following logic:

- The book specified on the billing rule is selected by default.
  - If not set, the "Funding Book" legal entity attribute on the PO is selected.
  - If not set, the standard clearing book lookup method is used.
- See [Defining Books](#) for details.

Sample billing trade:

**Billing(8.03 USD) -PO is Calypso Clearing US FCM (298699) - Version : 0 Mod User :() [130007SP2/CLEARING\_25]...**

Trade Back Office Billing Analytics Pricing Env Market Data Utilities Help Template

Billing(8.03 USD) -PO is Calypso Clearing US FCM (298699) - Version

Trade Details Fees Billing Fees

From CUSTOMER\_A ... CounterParty Book IM Based F... Status VERIFIED ID 298699

To CALYPSO\_US ... ProcessingOrg Trade Date 04/01/2013 7:27:40 AM Settle Date 05/10/2013

Start Date 04/01/2013 End Date 04/30/2013

Receive Transfer Type IM Billing Fee Account Id 114213 CUST\_A@FCM\_CME\_IRD

Fee Billing Id 132704

Principal 8.03 Ccy USD

Adjustment 0.00 Template NONE

---

**Billing(8.03 USD) -PO is Calypso Clearing US FCM (298699) - Version : 0 Mod User :() [130007SP2/CLEARING\_25]...**

Trade Back Office Billing Analytics Pricing Env Market Data Utilities Help Template

Trade Details Fees Billing Fees

Legal Entity

Billing Event Billing Grid

| Date       | Value Date | Amount Type | Amount | Currency | Converted Amount | Manual Amount            | Override Amount                     | Billing Event |
|------------|------------|-------------|--------|----------|------------------|--------------------------|-------------------------------------|---------------|
| 04/30/2013 | 04/08/2013 | AMOUNT      | 8.03   | USD      | 8.03             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Account       |

## 8.4 Security Collateral Fees

Billing events are generated by the scheduled task `CLEARING_BILLING` based on margin call positions. The Billing engine subscribes to the billing events to generate the fees (billing trades) based on billing grids and fee billing rules.

The Billing Grid calculator "BondInvestmentFeeCalculator" computes fees of user-defined type, on a periodic basis, using the scheduled task CLEARING\_BILLING and the Billing engine.

The scheduled task CLEARING\_BILLING will only process accounts for which the Billing checkbox is checked.

Add the fee type that you want to generate to the domain "BillingFeeType". For example, "IEF4\_Fees".

You also need to add BondInvestmentFeeCalculator to the domain "billingCalculator".

The billing role of CCP-Facing trades is set to the role defined in the domain "Clearing.BillingFeeCCPReceiverRole". If not set, the fee is generated using the role from the billing grid.

Setup details are described in the following sections.

## 8.4.1 Billing Grid

From the Calypso Navigator, navigate to **Configuration > Fees, Haircuts, & Margin Calls > Fee Grid**, and select the Billing Grid panel to define billing grids.

**Fee Grid Window - Version - 9**

Trade Fee Grid | **Billing Grid** | Browse

Grid Id: 293697      Account: ALL

Processing Org: ALL      Ccy: ANY

Legal Entity: CU501      Role: CounterParty

Event Type: Account      Fee Value Date: CustomDate

SD Filter: SERVICES CME IRD

Valid from:      Valid to:

Description: Corp Bond

Calculator: BondInvestmentFeeCalculator      Add      Remove

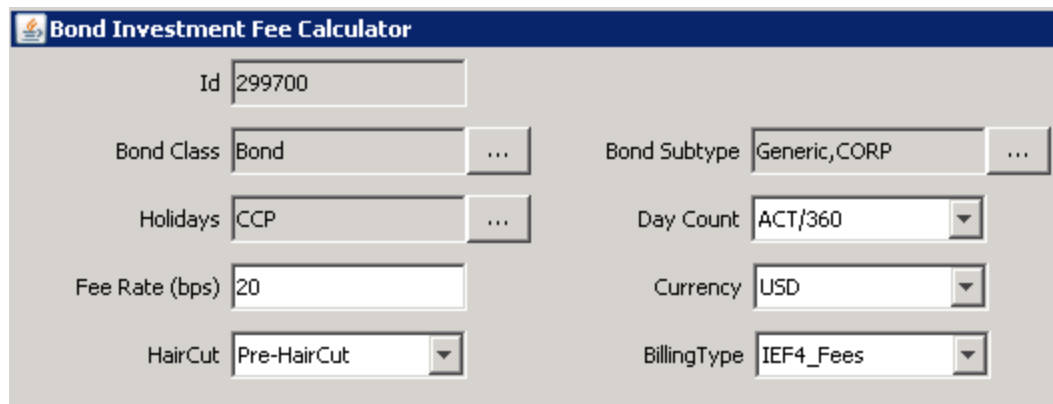
☐ Use Multiple Calculators

Billing Calculators

| Id     | Type                        | StaticDataFilter | AmountType | Currency | Description | RefDateTime | TimeZone |
|--------|-----------------------------|------------------|------------|----------|-------------|-------------|----------|
| 293698 | BondInvestmentFeeCalculator |                  | AMOUNT     | USD      | NONE        |             |          |

Enter the criteria as needed.

Select the calculator BondInvestmentFeeCalculator and click **Add**.



**Bond Investment Fee Calculator**

Id: 299700

Bond Class: Bond ... Bond Subtype: Generic,CORP ...

Holidays: CCP ... Day Count: ACT/360

Fee Rate (bps): 20 Currency: USD

HairCut: Pre-HairCut BillingType: IEF4\_Fees

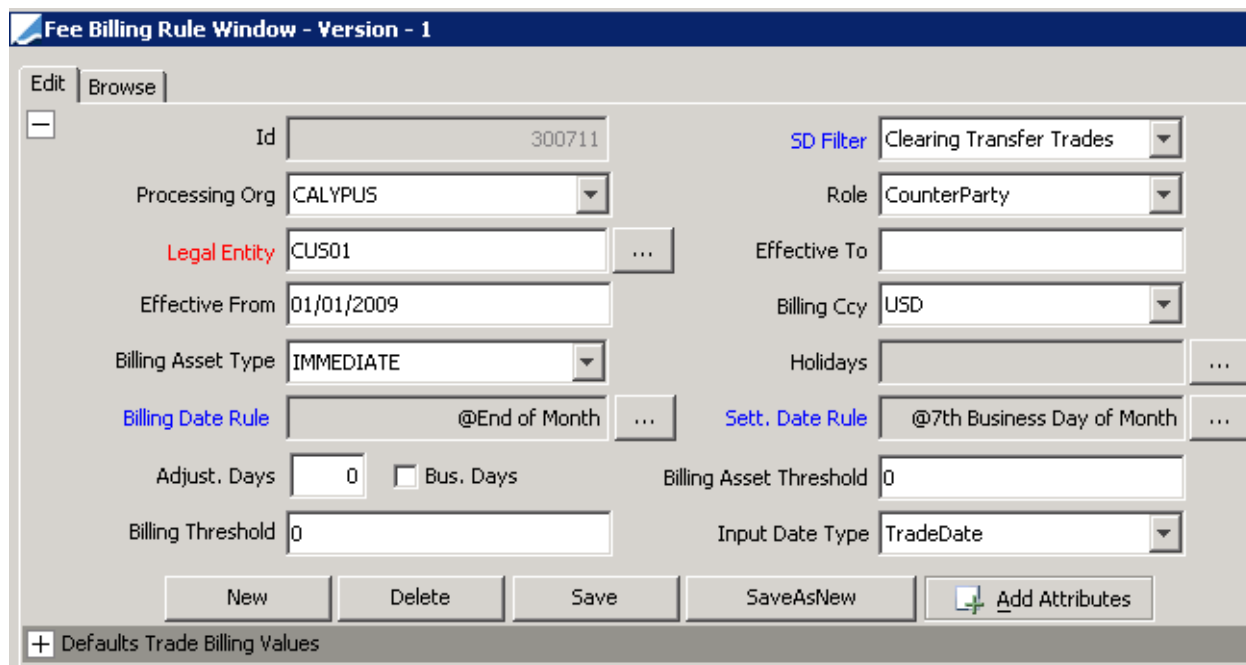
- » Enter the details of the calculator.
- » Set the billing type to the user-defined fee, IEF4\_Fees in this example.
- » Then click **Apply**.

Save the billing grid when you are done.

## 8.4.2 Fee Billing rule

The billing rule allows defining the billing frequency, and a billing threshold if needed.

Define the billing rule using **Main Entry > Configuration > Fees, Haircuts & Margin Calls > Fee Billing Rule** (menu action `refdata.FeeBillingRuleWindow`).



**Fee Billing Rule Window - Version - 1**

Edit | Browse

Id: 300711 SD Filter: Clearing Transfer Trades

Processing Org: CALYPUS Role: CounterParty

Legal Entity: CUS01 ... Effective To:

Effective From: 01/01/2009 Billing Ccy: USD

Billing Asset Type: IMMEDIATE Holidays: ...

Billing Date Rule: @End of Month ... Sett. Date Rule: @7th Business Day of Month ...

Adjust. Days: 0 ☐ Bus. Days Billing Asset Threshold: 0

Billing Threshold: 0 Input Date Type: TradeDate

New Delete Save SaveAsNew Add Attributes

+ Defaults Trade Billing Values

- » Click **Add Attributes** to add the EntryType attribute.

**Attributes Window**

Domain ...

| Name                | Value       |
|---------------------|-------------|
| Billing Fee Type    | IEF4_Fees   |
| BillingOnly         | true        |
| DefaultBook         | CUS01       |
| DefaultTransferType | ▼ IEF4_Fees |
| EntryType           | IEF4_Fees   |

Set EntryType = User-defined fee, "IEF4\_Fees" in this example.

### 8.4.3 Fee Generation

Configure the CLEARING\_BILLING scheduled task.

**Task Description**

Task Type: CLEARING\_BILLING

External Reference: 0.50 CALYPUS - CME IRD

Comments: Generates Account Event to Trigger Clearing Related Billing Fees

Description: Generates Account Event to Trigger Clearing Related Billing Fees

---

**Execution Parameters**

Attempts: 1    Retry After: 0 minutes    Expected Execution Time

JVM Settings: -Xms512m -Xmx1024m -XX:MaxPermSize=256m

Log Settings:

---

**Task Notification Options**

☐ Send Emails    ☐ Publish Business Events    To User: [Dropdown]

---

**Common Attributes**

**Task Attributes**

|              |     |
|--------------|-----|
| CCP          | CME |
| PRODUCT TYPE | IRD |

- » Select the CCP for which you want to generate the fees.
- » Select the product type as needed.

If the business holidays are set, and the valuation date is a holiday, the scheduled task fails. You can monitor the exception in the Task Station:

- Add EX\_CLEARING\_BILLING to the domain "eventType".
- Add CLEARING\_BILLING to the domain "exceptionType".

The scheduled task PSEventAccountBilling events based on the billing grid.

The Billing engine subscribes to PSEventAccountBilling events and generates billing trades based on the billing rule.

**Version 14.0+**

Make sure that the Billing engine is set in the parameter "engines.startup" of "<calypso home>/deploy/EngineStartupConfig.properties":


```
engines.startup=TransferEngine,MessageEngine,InventoryEngine,AccountingEngine,LiquidationEngine,PositionEngine,TaskEngine,LifeCycleEngine,BillingEngine
```

You can start the Billing engine as part of the Engine server using "<calypso home>/startEngineserver.bat" on Windows platforms, or "<calypso home>/startEngineserver.sh" on \*nix platforms.

### **Version 14.1+**

The Billing engine is configured in the Engine Manager of Web Admin: event subscription and engine parameters. You may need to add this engine if it is not available for configuration: Create a new engine called BillingEngine, with class name `com.calypso.engine.billing.BillingEngine`.

The Billing engine can be started from the Engine Manager in Web Admin.

 Please refer to Calypso Web Admin documentation for complete details.

## Section 9. Message Configurations

From the Calypso Navigator, navigate to **Configuration > Messages & Matching > Message Set-up** for defining messages.

### 9.1 CONSENT Messages

The CONSENT message is sent to the CCP once a trade has been approved / rejected in Calypso. Upon receipt of the CONSENT message, the CCP will clear / cancel the trade.

#### 9.1.1 Message Setup

Edit

Browse

Product Type

ALL

Event Type

CREDIT\_CONSENTED\_TRADE

Message Type

CONSENT

Processing Org

CALYPUS

PO Contact Type

Default

Receiver

ALL

Receiver Role

CounterParty

Rec Contact Type

Default

Grouping

Language

English (United States)

Address Type

CME

Gateway

MQ

Format Type

XML

Template

CMEBridgeConsentGranted

SD Filter

isCMEFeedTrade

Matching

☐

Do not Send Message

☐

Inactive

☐

Config Id

141787

Delete

Save

Save As New

| Id     | Product | Event                  | Message ... | ProcessingOrg | PO Contact Type | Receiver | Receiver Role |
|--------|---------|------------------------|-------------|---------------|-----------------|----------|---------------|
| 141786 | ALL     | CREDIT_CONSENTED_TRADE | CONSENT     | CALYPUS       | Default         | ALL      | CounterParty  |
| 141787 | ALL     | CREDIT_CONSENTED_TRADE | CONSENT     | CALYPUS       | Default         | ALL      | CounterParty  |
| 280219 | ALL     | CREDIT_CONSENTED_TRADE | CONSENT     | CALYPUS       | Default         | ALL      | CounterParty  |



Edit | Browse

|                  |                        |  |                         |
|------------------|------------------------|--|-------------------------|
| Product Type     | ALL                    | Language                                     | English (United States) |
| Event Type       | CONSENT REJECTED_TRADE | Address Type                                 | CME                     |
| Message Type     | CONSENT                | Gateway                                      | MQ                      |
| Processing Org   | CALYPUS                | Format Type                                  | XML                     |
| PO Contact Type  | Default                | Template                                     | CMEBridgeConsentRefused |
| Receiver         | ALL                    | SD Filter                                    | isCMEFeedTrade          |
| Receiver Role    | CounterParty           | <input type="checkbox"/> Matching            |                         |
| Rec Contact Type | Default                | <input type="checkbox"/> Do not Send Message |                         |
| Grouping         |                        | <input type="checkbox"/> Inactive            |                         |

Config Id: 141780    Delete    Save    Save As New

| Id     | Product | Event                  | Message Type | ProcessingOrg | PO Contact Type | Receiver | Receiver Role |
|--------|---------|------------------------|--------------|---------------|-----------------|----------|---------------|
| 141780 | ALL     | CONSENT REJECTED_TRADE | CONSENT      | CALYPUS       | Default         | ALL      | CounterParty  |
| 141783 | ALL     | CONSENT REJECTED_TRADE | CONSENT      | CALYPUS       | Default         | ALL      | CounterParty  |
| 280220 | ALL     | CONSENT REJECTED_TRADE | CONSENT      | CALYPUS       | Default         | ALL      | CounterParty  |

## 9.1.2 Message Sender Config

Message Sender Config

Sender Config | Copy Config

|                    |            |              |     |
|--------------------|------------|--------------|-----|
| Message Status     | TO_BE_SENT | Product Type | ALL |
| Advice Type        | CONSENT    | Address Type | LCH |
| Static Data Filter |            | Gateway      | MQ  |

☒ Save    Master and Copies AdviceDocuments will be saved in DB

☒ Send    ☒ Sender By Method    ☒ Sender By Gateway

LCHGatewayMQDocumentSender class will be called

Save    Remove    New

| Id     | Status     | Product | Advice Type               | Address Type | Gateway | SD Filter | Send                                | Save                                | By Gateway                          | By Method                           |
|--------|------------|---------|---------------------------|--------------|---------|-----------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 297213 | TO_BE_SENT | ALL     | CONSENT                   | LCH          | MQ      |           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 297212 | TO_BE_SENT | ALL     | EXCHANGE_FEED_CONSENT_ACK | LCH          | MQ      |           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

## 9.2 CLEARING\_STATEMENT Messages

The CLEARING\_STATEMENT message is the client statement – It is generated by the Message engine once the scheduled task CLEARING\_STATEMENT sends the STATEMENT events.

| Id     | Product    | Event     | Message Type       | ProcessingOrg | PO Contact Type | Receiver |
|--------|------------|-----------|--------------------|---------------|-----------------|----------|
| 130290 | MarginCall | STATEMENT | CLEARING_STATEMENT | ALL           | Default         | ALL      |

[NOTE: Receiver Role = Client]

We are using the role "Client" in this setup. It can also be "ExtCounterParty".

➤ See [On-Boarding an Individual Client](#) for details.

You can select any HTML template – It will be overridden by the CLEARING\_STATEMENT message formatter to use an XSL template.

If you also want to generate a PDF statement, add the following message configuration:

- Format Type = PDF
- Template = "CMFMCClearingStatementPDF.html"

## 9.2.1 Default Templates

The default templates are located in "resources/com/calypso/templates": ClearingStatement.xml, and CondensedClearingStatement.xml.

The XSL templates can be customized as needed.

For example, you can easily replace the "logo" image, and any disclaimer in the "footer".

```

<p class="FOOTER">
    Statement generated by Calypso Technology, 2013.
</p>
```

The actual content of the client statements is defined in the files "resources/config/ClearingStatementFactory.xml" and "resources/config/CondensedClearingStatementFactory.xml".

[NOTE: If the "Excess/Deficit Including Pending Collateral" row name is customized in "ClearingStatementFactory.xml", all occurrences of such name must also be replaced in "ClearingStatement.xml"]

## 9.2.2 Defining a Template by Legal Entity

It is possible to override the default location of the template, and set it by legal entity, using the configuration file "resources/com/calypso/tk/clearing/factory/ResourceClearingFactory.Statement.xml".

A sample configuration file is provided in

"resources/com/calypso/tk/clearing/factory/ResourceClearingFactory.Statement.xml.sample". You need to rename it to

"resources/com/calypso/tk/clearing/factory/ResourceClearingFactory.Statement.xml" in order to use it.

If this file does not exist, the default template will be used instead.

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:util="http://www.springframework.org/schema/util"
    xsi:schemaLocation="
        http://www.springframework.org/schema/util
        http://www.springframework.org/schema/util/spring-util-3.0.xsd
        http://www.springframework.org/schema/beans
        http://www.springframework.org/schema/beans/spring-beans-3.0.xsd"
    default-init-method="init" default-destroy-method="destroy">

    <!-- statementConfigurationPaths has to be a list of valid Spring resource
    paths. See http://docs.spring.io/spring/docs/3.0.x/spring-framework-
    reference/html/resources.html#resources-app-ctx for more info -->
    <!-- statementTemplatePath has to be either an absolute file path, or a
    classpath, with no classpath: or file: prefix -->

    <!-- SAMPLES

    <bean id="calypsoUKresourceLocations"

        class="com.calypso.tk.bo.clearing.statement.ClearingStatementResourcesLocator" >
        <meta key="LegalEntity" value="CALYPSO_UK"/>
        <property name="statementTemplatePath"
            value="com/calypso/templates/custom_statement.xml" />
        <property name="statementConfigurationPaths">
            <list>
            <value>classpath:config/CustomUKClearingStatementFactory.xml</value>
            <value>config/OtherCustomUKClearingStatementFactory.xml</value>
            </list>
```

```

        </property>
    </bean>

    <bean id="customerAresourceLocations"
class="com.calypso.tk.bo.clearing.statement.ClearingStatementResourcesLocator" />
        <meta key="LegalEntity" value="CUSTOMER_A" />
        <property name="statementTemplatePath"
value="/path/to/calypso/resources/com/calypso/templates/custom_statement.xml" />
        <property name="statementConfigurationPaths">
            <list>
<value>file:///path/to/calypso/resources/config/CustomerAClearingStatementFactory.xml<
/val
            </list>
        </property>
    </bean>

    END SAMPLES -->
</beans>

```

### 9.3 CVR\_WORKSHEET Messages

This message type is used to generate the Collateral Valuation report.

It is not necessary to setup a message configuration, but it is necessary to define a message workflow for this type of message.

The CVR\_WORKSHEET message workflow can be imported using "<calypso home>/client/resources/CVR\_WORKSHEET.wf".

If you are clearing with LCH, you need to use the file "<calypso home>/client/resources/CVR\_WORKSHEET\_LCH.wf" instead. It adds the transition highlighted below for managing incoming collateralAllocation messages.

| Orig Status | Action    | Resulting Status | Subtype  | Product Type | Processing Org |
|-------------|-----------|------------------|--|--------------|----------------|
| ACCEPTED    | ACCEPT    | ACCEPTED         |  |              |                |
| ACCEPTED    | ACK       | ACCEPTED         |  |              |                |
| ACKED       | ACCEPT    | REJECTED         |  |              |                |
| ACKED       | REJECT    | REJECTED         |  |              |                |
| EDITABLE    | CANCEL    | CANCELED         | CVR_WORKSHEET  | ALL          | ALL            |
| EDITABLE    | EXPORT    | EXPORTED         | CVR_WORKSHEET  | ALL          | ALL            |
| EDITABLE    | UPDATE    | EDITABLE         | CVR_WORKSHEET  | ALL          | ALL            |
| EXPORTED    | AUTHORIZE | TO_BE_SENT       | CVR_WORKSHEET<br>Rule: PrepareCVRForSend<br>Filter:<br>isLCHCVRValidToSend | ALL          | ALL            |
| NONE        | NEW       | EDITABLE         | CVR_WORKSHEET  | ALL          | ALL            |
| REJECTED    | ACK       | REJECTED         | CVR_WORKSHEET  | ALL          | ALL            |
| REJECTED    | REJECT    | REJECTED         | CVR_WORKSHEET  | ALL          | ALL            |
| SENT        | ACCEPT    | ACCEPTED         | CVR_WORKSHEET  | ALL          | ALL            |
| SENT        | ACK       | ACKED            | CVR_WORKSHEET  | ALL          | ALL            |
| SENT        | REJECT    | REJECTED         | CVR_WORKSHEET  | ALL          | ALL            |
| TO_BE_SENT  | SEND      | SENT             | CVR_WORKSHEET  | ALL          | ALL            |

Static data filter "isLCHCVRValidToSend"

Static Data Filter Window [140020SP2/LAPTOP\_REL14/calypso\_user]

Name:  Attributes... Simulate...

Comment:

Groups:  ... Pending Modifs

| Attribute                                  | Criteria      |       | Filter Value(s) |
|--|---------------|-------|-----------------|
| MSG_ATTRIBUTE.CVRWorksheetAdviceDocumentID | ▼ FLOAT_RANGE | Range | 1.0, Infinity   |
| Message Receiver                           | ▼ IN          | Add   | LCH             |

It is also necessary to define a message sender configuration in order to send the report to LCH through MQ Series.

Message Sender Config

Sender Config Copy Config

Message Status:  Product Type:

Advice Type:  Address Type:

Static Data Filter:  ... Gateway:

☐ Save

☒ Send ☒ Sender By Method ☒ Sender By Gateway

LCHGatewayMQDocumentSender class will be called


Save Remove New

Once a CVR report is exported, from the CVR report or using the scheduled task CLEARING\_EXPORT\_CVR\_WORSHEET, it is sent to LCH using the MQ connector LCHCVR.

MQ Series is configured using the following files:

- "`<calypso home>/client/resources/LCHCVRbridge_config.properties.sample`" (mandatory to send the outgoing CVR messages to LCH)
- "`<calypso home>/client/resources/LCHCVRbridgeservice.properties.sample`" (optional, used to receive response messages)

[NOTE: Resource files need to be copied to `<calypso home>/custom-extensions/custom-projects/custom-shared-lib/src/calypso/resources`. You may need to create this folder if it does not already exist. You will then need to deploy the files to your applications servers]

 Please refer to the *Calypso Installation Guide* for details on deploying resource files.

### ***LCHCVRbridge\_config.properties***

Rename "LCHCVRbridge\_config.properties.sample" to "LCHCVRbridge\_config.properties", and modify as needed.

```
#
# JMS properties file
#
# REFER TO EXCHANGE FEED DOCUMENTATION FOR MORE INFO
#
# JMSQueueIEAdaptor properties
#
# Note: if queue.ackType is not set to auto then
#       failed messages are not acknowledged to JMS and
#       will be reconsumed when the engine restarts
#
# Queue-specific properties are prefixed by the queue name
#
input.queue.name=JQUEUE.LCH.CALYPSO
JQUEUE.LCH.CALYPSO.queue.ackType=auto
JQUEUE.LCH.CALYPSO.queue.persist=false
JQUEUE.LCH.CALYPSO.queue.transacted=false

output.queue.name=JQUEUE.CALYPSO.LCH
JQUEUE.CALYPSO.LCH.queue.ackType=auto
JQUEUE.CALYPSO.LCH.queue.persist=false
JQUEUE.CALYPSO.LCH.queue.transacted=false

jms.queue.hostname=localhost
jms.queue.port=1414
jms.queue.connectionUserName=
jms.queue.connectionPassword=
jms.queue.transportType=MQJMS_TP_CLIENT_MQ_TCPIP
jms.queue.queueManager=QM.LCH.CALYPSO
jms.queue.channel=SYSTEM.ADMIN.SVRCONN
```

### ***LCHCVRbridgeservice.properties***

Rename "LCHCVRbridgeservice.properties.sample" to "LCHCVRbridgeservice.properties", and modify as needed.

```
bridge.counterparty.attribute.identifier=LCH_CPTY

#####
# Bridge original, work in progress and #
# final transformation directory of the #
# incoming message.                    #
# If this option is not set,            #
# <CALYPSO_HOME>/<Connection>          #
# will be used by default               #
#####
#file.bridge.log.directory=C:\\LCH

REQUESTCONSENT_SWAP_BRIDGE_XSLT=LCH_REQUESTCONSENT_SWAP.xslt
CLEARINGCONFIRMED_SWAP_BRIDGE_XSLT=LCH_CLEARINGCONFIRMED_SWAP.xslt
SWAP_TRANSFORMER_CLASS=com.calypso.tk.bo.bridge.transformer.LCHSWAPMappingTransformer
KEYWORDS_REQUESTCONSENT_SWAP_XSLT=KEYWORDS_LCH_REQUESTCONSENT_SWAP.xslt
KEYWORDS_CLEARINGCONFIRMED_SWAP_XSLT=KEYWORDS_LCH_CLEARINGCONFIRMED_SWAP.xslt

REQUESTCONSENT_FRA_BRIDGE_XSLT=LCH_REQUESTCONSENT_FRA.xslt
```

```

CLEARINGCONFIRMED_FRA_BRIDGE_XSLT=LCH_CLEARINGCONFIRMED_FRA.xslt
FRA_TRANSFORMER_CLASS=com.calypso.tk.bo.bridge.transformer.LCHFRAMappingTransformer
KEYWORDS_REQUESTCONSENT_FRA_XSLT=KEYWORDS_LCH_REQUESTCONSENT_FRA.xslt
KEYWORDS_CLEARINGCONFIRMED_FRA_XSLT=KEYWORDS_LCH_CLEARINGCONFIRMED_FRA.xslt

RULE_HANDLER=com.calypso.tk.bo.bridge.handler.LCHCVRRuleHandler

# BRIDGE BO Messages default sender and receiver.
BridgeMessageDefaultSender=LCH
BridgeMessageDefaultReceiver=CALYPSO

ThreadPoolSize=5
# Look for file changes every xx-seconds.
interval=10
#####
# Message validator list                                #
# A list of xslt files located in                        #
# /resources/calypso/mapping/                          #
# for incoming message validation by                    #
# message structure                                     #
#####
ValidatorFiles=exchange_feed_clearing_confirmed_check_fpml5.3.xslt,exchange_feed_clearing_status_check_fpml5.3.xslt,exchange_feed_request_consent_check_fpml5.3.xslt,exchange_feed_consent_acknowledgement_check_fpml5.3.xslt,exchange_feed_clearing_refused_check_fpml5.3.xslt,exchange_feed_service_notification_check_fpml5.3.xslt,exchange_feed_position_report_check_fpml5.3.xslt,exchange_feed_lch_data_document_check_fpml5.3.xslt,exchange_feed_message_rejected_check_fpml5.3.xslt

```

The clearing member is identified in the output file using the FCM BIC (external name of the house clearing account).

## 9.4 BRIDGE\_ACK Messages

BRIDGE\_ACK messages are sent to acknowledge that collateralAllocation BRIDGEMSG messages have been received.

### 9.4.1 Message Setup

You need to add "LCHCVRResponseAck.html" to the domain "XML.Templates" if it is not available for selection.

|        |                   |
|--------|-------------------|
| Name:  | XML.Templates     |
| Value: | LCHCVRResponseAck |

Edit **Browse**

Product Type: ALL  
 Event Type: EX\_BRIDGE\_ACK  
 Message Type: BRIDGE\_ACK  
 Processing Org: ALL  
 PO Contact Type: Default  
 Receiver:  ...  
 Receiver Role: CounterParty  
 Rec Contact Type: Default  
 Grouping:  ...  
 Config Id: 67222

Language: English (United States)  
 Address Type: LCHCVR ...  
 Gateway: MQ  
 Format Type: XML  
 Template: LCHCVRResponseAck ...  
 SD Filter: isLCHCVRMessage ...  
☐ Matching  
☐ Do not Send Message  
☐ Inactive

Delete Save Save As New

| Id    | Product | Event         | Message Type | ProcessingOrg | PO Contact Type | Receiver | Receiver Role |
|-------|---------|---------------|--------------|---------------|-----------------|----------|---------------|
| 67222 | ALL     | EX_BRIDGE_ACK | BRIDGE_ACK   | ALL           | Default         | ALL      | CounterParty  |

## 9.4.2 Message Sender Config

Message Sender Config

Sender Config **Copy Config**

Message Status: TO\_BE\_SENT  
 Advice Type: BRIDGE\_ACK  
 Static Data Filter: isLCHCVRMessage ...  
 Product Type: ALL  
 Address Type: LCHCVR  
 Gateway: MQ

☒ Save Master and Copies AdviceDocuments will be saved in DB

☒ Send ☒ Sender By Method ☒ Sender By Gateway

LCHCVRGatewayMQDocumentSender class will be called

Save Remove New



### 9.4.3 Message Workflow

The BRIDGE\_ACK message workflow can be created using the file "<calypso home>/client/resources/workflow/bridge\_ack.wf".

| Orig Status | Action    | Resulting Status | Subtype    | Product Type | Processing Org |
|-------------|-----------|------------------|------------|--------------|----------------|
| NONE        | NEW       | PENDING          | BRIDGE_ACK | ALL          | ALL            |
| PENDING     | AUTHORIZE | TO_BE_SENT       | BRIDGE_ACK | ALL          | ALL            |
| SENT        | SEND      | SENT             | BRIDGE_ACK | ALL          | ALL            |
| TO_BE_SENT  | SEND      | SENT             | BRIDGE_ACK | ALL          | ALL            |

## 9.5 CVR\_LE\_DATA Messages

This message type is used to generate the report LSOC CVR Static Data.

### 9.5.1 Message Setup

Edit | Browse

Product Type

MarginCall

Event Type

VERIFIED\_TRADE

Message Type

CVR\_LE\_DATA

Processing Org

ALL

PO Contact Type

Default

Receiver

ALL

Receiver Role

ExtCounterParty

Rec Contact Type

Default

Grouping

Language

English

Address Type

ITD\_STATEMENT\_FILE

Gateway

FILE

Format Type

XML

Template

ClearingITDStatement.xml

SD Filter

isITDMarginCallTradeType

Matching

☐

Do not Send Message

☐

Inactive

☐

Config Id

286200

Delete

Save

Save As New

### 9.5.2 Message Workflow

| Orig Status | Action  | Resulting Status | Subtype     | Product Type | Processing Org |
|-------------|---------|------------------|-------------|--------------|----------------|
| NONE        | NEW     | PENDING          | CVR_LE_DATA | ALL          | ALL            |
| PENDING     | TO_SEND | TO_BE_SENT       | CVR_LE_DATA | ALL          | ALL            |
| TO_BE_SENT  | SEND    | SENT             | CVR_LE_DATA | ALL          | ALL            |
| TO_BE_SENT  | CANCEL  | CANCELED         | CVR_LE_DATA | ALL          | ALL            |
| SENT        | CANCEL  | CANCELED         | CVR_LE_DATA | ALL          | ALL            |
| SENT        | RESEND  | SENT             | CVR_LE_DATA | ALL          | ALL            |

## 9.6 CFTC\_REPORTING Messages

This message type is used to generate the reports Liquidating Deficit and Aged Margin Calls.

It is not necessary to setup a message configuration, but it is necessary to define a message workflow for this type of message.

| Orig Status | Action | Resulting Status | Subtype        | Product Type | Processing Org |
|-------------|--------|------------------|----------------|--------------|----------------|
| NONE        | NEW    | CREATED          | CFTC_REPORTING | ALL          | ALL            |
| CREATED     | CANCEL | CANCELED         | CFTC_REPORTING | ALL          | ALL            |

## Section 10. Scheduled Tasks Setup

The following scheduled tasks need to be configured for each CCP.

They download the CCP files using the following property file:

- `"<calypso home>/client/resources/config/clearingconnection.properties"`

See [Clearing Member Setup](#) for details.

Once the files are retrieved from the CCP, they are stored in the folder specified in the property file `"<calypso home>/client/resources/config/clearing.properties"` if it exists.

Otherwise, they are stored by default under `"<user home>\Calypso\clearing"` on the server where the Scheduler engine is running, and for the user running the Scheduler engine.

From the Calypso Navigator, navigate to **Configuration > Scheduled Tasks** (menu action `scheduling.ScheduledTaskListWindow`) to configure the scheduled tasks. Choose this menu item to bring up the Scheduled Task Definitions & Scheduling window.

### 10.1 Flow Types and Fees

The scheduled tasks create Clearing Transfer trades to reflect the clearing activity. Clearing Transfer trades are of type CASH\_SETTLEMENT.

CASH\_SETTLEMENT Clearing Transfer trades represent the cashflow amounts that impact the cash accounts. They are used for payment purposes and these amounts have a direct impact on the Cash Account balances posted to the client statements.

They are associated with the following fees:

- CS\_PA1 - Price Alignment Interest. Interest paid on Mark-to-Market amounts. Taken from the CCP file.
- CS\_COUPON - Interest associated with the swap trades (CME). Taken from the CCP file.
- CS\_INTERESTS - Interest associated with the swap trades (LCH). Taken from the CCP file.
- CS\_FRA\_PAYMENT - Settlement associated with the FRA trades. Taken from the CCP file.
- CS\_CASH\_DELIVERY - Cash associated with the FX NDF trades. Taken from the CCP file.
- CS\_VARIATION - Variation margin taken from the CCP file (EOD or intraday for LCH GBP FRAs)
- CS\_FEES - CME only - Fees associated with the trades. Taken from the CCP file.
- CS\_CONSIDERATN - LCH only - Fees associated with the swap trades. Taken from the CCP file.
- CS\_NPV\_ADJUSTED - Adjusted NPV. Taken from the CCP file.
- CS\_NPV\_REV - Reversal of CS\_NPV\_ADJUSTED, the day after.

We recommend that CASH\_SETTLEMENT trades be settled automatically on their value date since the CCP takes/pays the money from/to the clearing member's nostro account, and this must be reflected on the client's cash accounts. To do so, you just need to add the rule CheckToBeSettled in the transfer workflow on the transition VERIFIED - AUTO\_SETTLE - SETTLED.

#### One Transfer for Each Fee

In order to generate proper information for the client statement, the system must generate one transfer for each fee of the trade.

**Note that in this case, the fee definitions MUST have the Transfer option checked, except for fee CS\_VARIATION.**

Example for CS\_PA1:

**All of these fees are created by the system upon installation.**

## 10.2 Settlement Lag

For the generation of all Clearing Transfer trades, the Trade date is the Value Date of the Scheduled Task.

### Settlement Date

(1) For all flow types, the Settle Date is set based on the Settle Date of the Flow tag if one is provided. If a Settle Date is not provided, this date is calculated by adding the number of business days defined in the Currency Settlement Lag of the flow's settlement currency according to that currency's holiday calendar.

(2) If the CCP legal entity attribute "UseAlternateSettleDateMethod" is false or null the system follows the logic defined in (1). If set to true, the following logic applies:

T+2 currencies

- SETTLE DATE=Trade Date + 2 days (excluding weekends)
- If SETTLE DATE falls under currency Holiday, then it is set to the next business day for that currency.

T+1 currencies

- SETTLE DATE=Trade Date + 1 day (excluding weekends)
- If SETTLE DATE falls under currency Holiday, then it is set to the next business day for that currency.

"UseAlternateSettleDateMethod" should be set to true for LCH and false for CME.

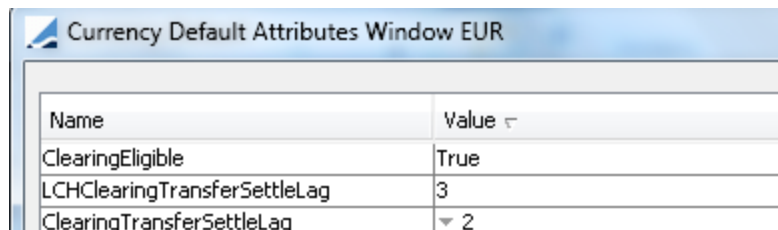
Settlement Date = Trade Date + Settlement Lag

The Settlement Lag of all Clearing Transfers is driven by the currency of the transfer in the following manner:

- If a settlement lag is specified in the currency attribute "<CCP name>ClearingTransferSettleLag", it is used in priority.
- Otherwise, we use the settlement lag specified in the currency attribute "ClearingTransferSettleLag" if any.
- Otherwise, the settlement lag is 1 business day.

**[NOTE: If you only set ClearingTransferSettleLag, it will apply to all CCPs]**

Sample setup (remember that attribute names are case-sensitive):



| Name                         | Value |
|------------------------------|-------|
| ClearingEligible             | True  |
| LCHClearingTransferSettleLag | 3     |
| ClearingTransferSettleLag    | 2     |

In this example, the settlement date for CME clearing transfer trades would be Trade Date + 2, and the settlement date for LCH Clearing Transfer trades would be Trade Date + 3.

*This sample setup is not realistic – It is only used to illustrate the configuration capability.*

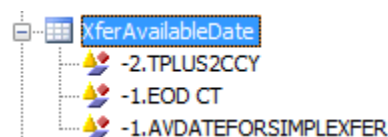
## 10.3 Available Date

The Inventory positions MUST be based on the Available Date.

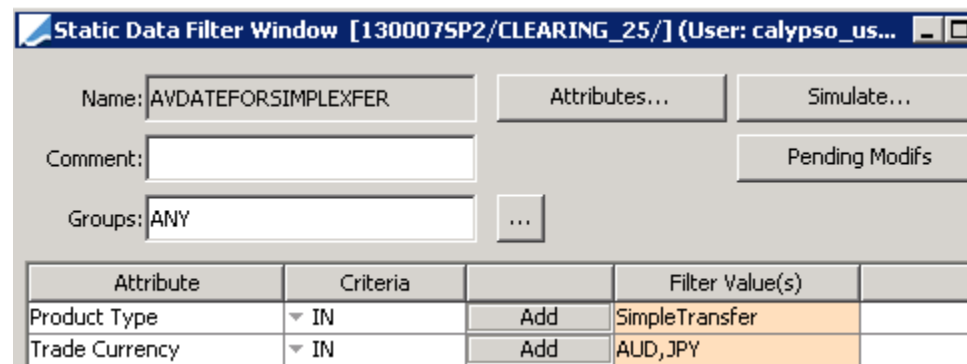
As a result, you need to define how the Available Date is set for the various trades involved in the clearing activity.

By default, the Available Date is set to the Trade Date. This behavior can be customized using the domain "XferAvailableDate" to determine the Available Date based on the Settlement Date +/- a number of days for a given static data filter. You need to setup the following:

- Value = "-1.AVDATEFORSIMPLEXFER" where "AVDATEFORSIMPLEXFER" is a static data filter that filters simple transfers in AUD and JPY – The available date will be set to the settlement date -1 day.
- Value = "-1.EOD CT" where "EOD CT" is a static data filter that filters non GBP FRAs clearing transfers in currencies different from AUD and JPY – The available date will be set to the settlement date -1 day.
- Value = "-2.TPLUS2CCY" where "TPLUS2CCY" is a static data filter that filters clearing transfer trades in AUD and JPY - The available date will be set to the settlement date -2 days.



Static Data Filters



| Attribute      | Criteria |     | Filter Value(s) |
|----------------|----------|-----|-----------------|
| Product Type   | IN       | Add | SimpleTransfer  |
| Trade Currency | IN       | Add | AUD,JPY         |

**Static Data Filter Window [130007SP2/CLEARING\_25/] (User: calypso\_us...)**

Name: EOD CT      Attributes...      Simulate...

Comment:      Pending Modifs

Groups: ANY      ...

| Attribute                  | Criteria |     | Filter Value(s)  |  |
|----------------------------|----------|-----|------------------|--|
| KEYWORD.RelatedProductType | ▼ NOT_IN | Add | GBP_FRA          |  |
| Product Type               | ▼ IN     | Add | ClearingTransfer |  |
| Trade Currency             | ▼ NOT_IN | Add | AUD,JPY          |  |

**Static Data Filter Window [130007SP2/CLEARING\_25/] (User: calypso\_us...)**

Name: TPLUS2CCY      Attributes...      Simulate...

Comment:      Pending Modifs

Groups: ANY      ...

| Attribute             | Criteria |     | Filter Value(s)         |  |
|-----------------------|----------|-----|-------------------------|--|
| IN Static Data Filter | ▼ IN     | Add | Clearing Transfer Trade |  |
| Trade Currency        | ▼ IN     | Add | AUD,JPY                 |  |

## 10.4 CLEARING\_SOD\_MARGINCALL

This scheduled task can be executed at the start of day to manage the SOD pass-through function. It allows comparing the client Margin Call Positions with the CCP cash balances provided by report REP00030, and generating Margin Call Trades facing the CCP in the respective IM Margin Call Contract.

The domain "Clearing.SOD.IgnoreAccount" can be used to filter out the accounts to be ignored by this process.

The margin call attribute CCP\_SEGREGATION\_ACCOUNT must be set to the "Account" field of report REP00030.

|                                      |  |
|--------------------------------------|--|
| <b>Task Description</b>              |  |
| Task Type:                           | CLEARING_SOD_MARGINCALL                          |
| External Reference:                  | Clearing SOD Margin Call                         |
| Comments:                            |  |
| Description:                         | Clearing SOD Margin Call                         |
| <b>Execution Parameters</b>          |  |
| Attempts:                            | 1  |
| Retry After:                         | 0 minutes  |
| JVM Settings:                        | -Xms512m -Xmx1024m -XX:MaxPermSize=256m          |
| Log Settings:                        |  |
| <b>Task Notification Options</b>     |  |
| <input type="checkbox"/> Send Emails | <input type="checkbox"/> Publish Business Events |
| To User:                             |  |
| <b>+ Common Attributes</b>           |  |
| <b>- Task Attributes</b>             |  |
| CCP                                  | LCH  |
| Product                              | IRD  |
| Skip download                        | Never  |
| Position Type                        | ACTUAL   |
| Collateral Context                   | default  |

### Attributes

- » CCP - Select LCH.
- » Product - Select IRD.
- » Skip download - Select Always, If already downloaded, or Never.

You can skip the download of the CCP files if the files have already been downloaded, or if you download them using another process.

- » Position Type – Select ACTUAL or THEORETICAL.
- » Collateral Context - Select a collateral context as needed.

The margin call trades are created with Keyword.CCPSettlementType="SOD". The counterparty role is set to the OrdererRole if set on the margin call contracts, or CounterParty otherwise.

The domain "Clearing.SOD.IgnoreXferStatusOnRerun" can be used to store transfer status codes to prevent "SOD" trades modifications. The scheduled task will not modify existing "SOD" trades if their transfers are in these statuses codes.

## 10.5 CLEARING\_INTRADAY\_MARGIN

This scheduled task can be executed at any time during the day to generate intraday margin calls for LCH. You may set it up to run every half hour for example.

You need to configure the scheduled task for LCH, and for IRD products.

| Task Attributes |      |
|-----------------|------|
| Ledger Type     | COV  |
| CCP             | LCH  |
| Product         | IRD  |
| Mode            | Both |

### Attributes

- » Ledger Type – Select COV, NON-COV, or ALL.
- » CCP – Select LCH.
- » Product – Select IRD.
- » Select the mode: Client, House, or Both.  
This only applies to LCH – Select Client to import client files only, House to import house files only, or Both to import both.

This scheduled task downloads the “Report 33a” from LCH and generates margin call trades of type ITD\_COLLATERAL for each PPS Call entry that is after the time specified in the domain “Clearing.LCH.ExcludeBankingCallTime” with the 24 hour format “hh:mm”. For example 09:30 is 09:30 am. Any entries before that time will be excluded.

The margin call trades are associated with the IM contracts (client for “C” PPS Call entries, or house for “H” PPS Call entries) of the clearing member facing the CCP, and can be viewed in the Collateral Manager as “previous margin”, so that they will not be called again during the EOD process.

The following keywords are populated on the ITD\_COLLATERAL trades:

- CCPAccountReference = CCP\_REFERENCE from additional info of IM MCC which can be “C” or “H” or position account id for ISA
- IS\_CLIENT=False (since it is CCP facing trade)
- RelatedProductType = IRD (PRODUCT\_TYPE from additional info of IM MCC)
- CCPSettlementType = ITD
- CCPLedgerType = COV for cash cover IM, or NON-COV for non-cash cover (interest and fees)



## 10.6 Intraday Settlement

GBP FRAs are supported with or without intraday processing (same day settlement). The following options are provided:

- **Option 1** - To import GBP FRAs intraday (gross settlements), you need to use the scheduled task CLEARING\_INTRADAY\_SETTLEMENT as described below (only to LCH).
- **Option 2** - To import GBP FRAs intraday (gross settlements or net settlements), you need to use the Intraday CDML process as described below (only applies to LCH).
- **Option 3** - Otherwise, if you want to import GBP FRAs with settlement at T+1 (like other FRA trades), use the standard CDML process.

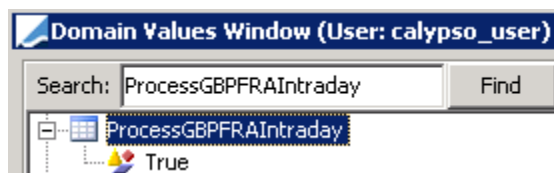
See [CDML Files Processing](#) for details on **Option 3**.

### 10.6.1 Intraday Setup Requirements

This applies to **Option 1** and **Option 2**.

#### Domain "ProcessGBPFRAIntraday"

You need to add the value True to the domain "ProcessGBPFRAIntraday" to import GBP FRAs intraday. It is not set by default (no intraday processing).

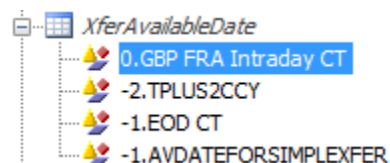


#### Domain "XferAvailableDate"

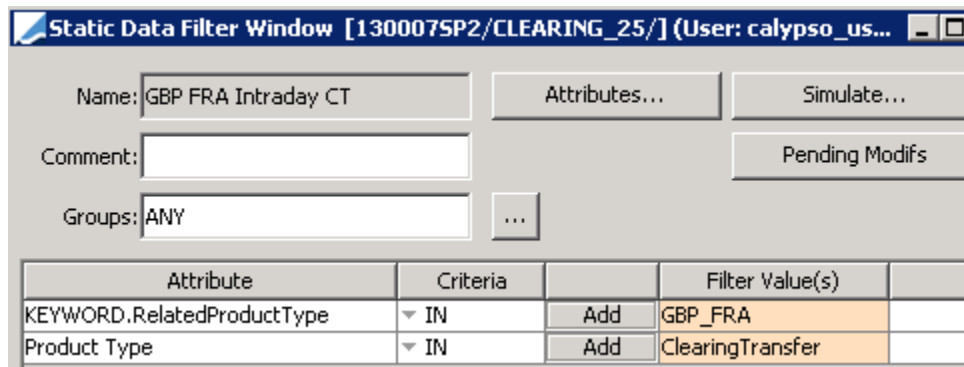
The Available Date is populated differently for GBP FRA trades and the other trades in order to allow trades that settle on different days to be included in the Client Statement.

You need to setup the following for GBP FRA trades:

- Value = "0.GBP FRA Intraday CT" where "GBP FRA Intraday CT" is a static data filter that filters GBP FRAs
  - The available date will be set to the settlement date.



Static Data Filter



## 10.6.2 Scheduled Task CLEARING\_INTRADAY\_SETTLEMENT

This applies to [Option 1](#).

### Clearing Member Setup

You need to set the legal entity attribute SKIP\_ITD\_FLOW = true on the Clearing Member Processing Org. In this case, the system will not process NPVAdjustment in reports 91 and 16. It is false by default.

### Scheduled Task Setup

To import GBP FRAs intraday, you need to configure a scheduled task CLEARING\_INTRADAY\_SETTLEMENT.

This scheduled task creates CASH\_SETTLEMENT clearing transfer trades with CS\_FRA\_PAYMENT and CS\_VARIATION\_MARGIN fees.

|                            |  |                   |
|----------------------------|--|-------------------|
| Task Type                  | CLEARING_INTRADAY_SETTLEMENT   |                   |
| External Reference         | GBPFRA   |                   |
| Description                | Clearing Intraday Settlement for GBP FRA   |                   |
| Attempts                   | 1  |                   |
| Retry After, In Minutes    | 0  |                   |
| Memory Settings            | Min Memory 512 m   | Max Memory 1024 m |
| Allow Task To              | <input type="checkbox"/> Send Emails <input type="checkbox"/> Publish Business Events         To user: <span></span> |                   |
| <b>+ Common Attributes</b> |  |                   |
| <b>- Task Attributes</b>   |  |                   |
| CCP                        | LCH  |                   |
| Product                    | IRD  |                   |
| Mode                       | Both   |                   |
| Skip download              | If already downloaded  |                   |

### Attributes

- » CCP - Select the CCP: LCH (only LCH is currently supported)
- » Product - Select the product: IRD.
- » Mode: Select Client, House, or Both.  
This only applies to LCH – Select Client to import client files only, House to import house files only, or Both to import both.
- » Skip download - Select Always, if already downloaded, or Never.  
You can skip the download of the CCP files if the files have already been downloaded, or if you download them using another process.

This scheduled task processes the files 104 and 104c:

- CS\_FRA\_PAYMENT fee = "FRASettlementAmount" column
- CS\_VARIATION fee = "PreviousTradeLevelNPV" column

The trade keyword RelatedProductType is set to GBP\_FRA.

For intraday GBP FRAs, all the fees attached to the CASH\_SETTLEMENT clearing transfer trades have Fee Date = Fee Start Date = Fee End Date = Fee Known Date = Trade Settle Date.

## 10.6.3 Intraday CDML Process

This applies to [Option 2](#).

### Margin Call Contract Setup

To settle all the flows intraday, you have to define a dedicated Margin Call VM contract identified with attribute SETTLEMENT\_TYPE = ITD.

The logic is the following:

- If set to ITD, the contract will only be applicable to process intra-day clearing transfers flows
- If not set, the contract will be applicable for both, ITD and EOD clearing transfers flows

### CCP facing MCC

LCH will always consider the NET settlement. The contract will be similar to a regular VM contract with following exceptions:

| Where                   | Field                 | Value                            |
|-------------------------|-----------------------|----------------------------------|
| MCC Additional Info tab | SETTLEMENT_TYPE       | ITD                              |
| MCC Additional Info tab | INCLUDED_VM_FLOWS     | <i>Not set.</i>                  |
| MCC Details tab         | Position Date         | POSITION_DATE_LAST_KNOWN         |
| MCC Dates & Times tab   | Valuation Time Offset | <i>Daily Valuation date rule</i> |

### Client facing MCC

Net Settlement Setup

| Where                   | Field                 | Value                            |
|-------------------------|-----------------------|----------------------------------|
| MCC Additional Info tab | SETTLEMENT_TYPE       | ITD                              |
| MCC Additional Info tab | INCLUDED_VM_FLOWS     | <i>Not set.</i>                  |
| MCC Details tab         | Position Date         | POSITION_DATE_LAST_KNOWN         |
| MCC Dates & Times tab   | Valuation Time Offset | <i>Daily Valuation date rule</i> |

Gross Settlement Setup

| Where                   | Field                 | Value                            |
|-------------------------|-----------------------|----------------------------------|
| MCC Additional Info tab | SETTLEMENT_TYPE       | ITD                              |
| MCC Additional Info tab | INCLUDED_VM_FLOWS     | CS_COUPON, CS_FRA_PAYMENT        |
| MCC Details tab         | Position Date         | POSITION_DATE_LAST_KNOWN         |
| MCC Dates & Times tab   | Valuation Time Offset | <i>Daily Valuation date rule</i> |

Example of CCP / client MCC settling all the flows (NET) coming from report 305 intra-day:

|                        |             |
|------------------------|-------------|
| INCLUDED_VM_FLOWS      |             |
| INTEREST_DATERULEONLY  |             |
| LAST_NOTIFICATION_DATE |             |
| LAST_NOTIFICATION_ID   |             |
| LOCATION               | PORTFOLIO A |
| MARGIN_TYPE            | VM          |
| MCC_CASH_LOCATION      |             |
| MCC_SEC_LOCATION       |             |
| NOTIFY_ON_CLAIM        | true        |
| PRIORITY               | 1           |
| PRODUCT_TYPE           | IRD         |
| REINVEST_COUPON        |             |
| SEND_STATEMENT         | true        |
| SEPARATE_VM_SETTLEMENT |             |
| SETTLEMENT_CUT_OFF     | 0           |
| SETTLEMENT_STRATEGY    |             |
| SETTLEMENT_TYPE        | ITD         |
| SET_DEFAULT_BOOK       | true        |

Example of client MCC settling only coupons and FRA payments intraday and NPV reversal at the end of day (GROSS):

|                          |                           |
|--------------------------|---------------------------|
| IGNORE_ALLOW_EX_DIVIDEND |                           |
| IM_IMPORT_CURRENCY       |                           |
| INCLUDED_VM_FLOWS        | CS_COUPON, CS_FRA_PAYMENT |
| INTEREST_DATERULEONLY    |                           |
| LAST_NOTIFICATION_DATE   |                           |
| LAST_NOTIFICATION_ID     |                           |
| LOCATION                 | PORTFOLIO A               |
| MARGIN_TYPE              | VM                        |
| MCC_CASH_LOCATION        |                           |
| MCC_SEC_LOCATION         |                           |
| NOTIFY_ON_CLAIM          | true                      |
| PRIORITY                 | 1                         |
| PRODUCT_TYPE             | IRD                       |
| REINVEST_COUPON          |                           |
| SEND_STATEMENT           | true                      |
| SEPARATE_VM_SETTLEMENT   |                           |
| SETTLEMENT_CUT_OFF       | 0                         |
| SETTLEMENT_STRATEGY      |                           |
| SETTLEMENT_TYPE          | ITD                       |
| SET_DEFAULT_BOOK         | true                      |

### Scheduled Tasks Setup

CLEARING\_TRANSLATE\_TO\_CDML scheduled task needs to be set to import the new report 305/ 305c with Intraday = true.

|                  |                             |
|------------------|-----------------------------|
| Task Attributes  |                             |
| Base Folder      | C:\calypso\gateway\EODFiles |
| CDML Processing  | Generation plus Import      |
| Intraday         | true                        |
| Ignore Producers |                             |

CLEARING\_PROCESS\_FROM\_CDML should be chained to CLEARING\_TRANSLATE\_FROM\_CDML and run intraday to generate intra-day Clearing Transfer Trades

|                  |     |
|------------------|-----|
| Task Attributes  |     |
| CCP              | LCH |
| Clearing Service | IRD |
| CDML Report Type | All |
| Process Mode     | All |

To avoid double accounting, the system will back out the previous day's NPV of EOD trade valuation reports 91 and 16 for the trades that have settled Intra-Day.

## 10.7 CLEARING\_HOLIDAY\_PROCESSING

The scheduled task `CLEARING_HOLIDAY_PROCESSING` allows generating Clearing Transfer trades, Collateral Exposure trades and PL Marks, on an ad-hoc basis, when the CCP does not provide EOD files because of a CCP holiday.

It should be run on CCP holidays when the CCP does not provide the EOD files.

|                         |  |  |
|-------------------------|--|--|
| Task Type               | CLEARING_HOLIDAY_PROCESSING  |  |
| External Reference      | Holiday Processing   |  |
| Comments                |  |  |
| Description             |  |  |
| Attempts                | 1  |  |
| Retry After, In Minutes | 0  |  |
| JVM Settings            | -Xms512m -Xmx1024m -XX:MaxPermSize=256m  |  |
| Allow Task To           | <input type="checkbox"/> Skip Execute <input type="checkbox"/> Send Emails <input type="checkbox"/> Publish Business |  |
| + Common Attributes     |  |  |
| - Task Attributes       |  |  |
| CCP                     | CME  |  |
| Product                 | IRD  |  |
| Mode                    | Client   |  |
| Processing For          | PL MARKS   |  |

### Attributes

- » CCP - Select the CCP.
- » Product - Select the product.
- » Mode: Select Client, House, or Both.
- » Processing For - Select the type of processing: CLEARING TRANSFER, COLLATERAL EXPOSURE, or PL MARKS.

For `CLEARING TRANSFER`, the scheduled task creates Clearing Transfers trades for the given valuation date. It copies the NPV from the previous business day, and generates reversals accordingly.

For `COLLATERAL EXPOSURE`, the scheduled task creates Collateral Exposure trades for the given valuation date. It copies the following measure from the previous business day:

- MAINTENANCE\_REQUIREMENT
- MARGIN\_CALL
- INITIAL\_MARGIN
- LIQUIDITY\_MARGIN
- ADDITIONAL\_MARGIN
- BASIS\_RISK\_MARGIN
- CREDIT\_MULTIPLIER\_MARGIN

For `PL MARKS`, the scheduled task copies PL MARKS for the given valuation date from the previous business day.

## 10.8 CLEARING\_IMPORT\_MARKET\_DATA

You can import the following quotes using the scheduled task CLEARING\_IMPORT\_MARKET\_DATA.

### 10.8.1 LCH PAI Quotes

PAI quotes are imported from report LCH REP000016c.

For PAI Quotes, the Interface Value in the Calypso Mapping Window should simply be in the format "CCYPAI", for instance USDPAI, CADPAI, etc. We will associate a single PAI rate per currency.

|                  |                     |
|------------------|---------------------|
| Name:            | LCH/Quotes          |
| Interface Value: | CADPAI              |
| Calypso Value:   | MM.CAD.CORRA.0D.LCH |

CLEARING\_IMPORT\_MARKET\_DATA import:

|                     |        |
|---------------------|--------|
| + Common Attributes |        |
| - Task Attributes   |        |
| CCP                 | LCH    |
| Market Data Types   | Quotes |

Market Data Types = Quotes

### 10.8.1 LCH LDR/CDR/HDR Rates

The LDR/CDR/HDR rates are imported from report LCH REP00017.

For LDR/CDR/HDR Rates, the Interface Value should be in the format CCY~INDEX~OIS0D~LDR/CDR/HDR, for instance DKK~DENTNIN~OIS0D~LDR.

|                  |                        |
|------------------|------------------------|
| Name:            | LCH/Quotes             |
| Interface Value: | CAD~CORRA~OIS0D~LDR    |
| Calypso Value:   | MM.CAD.CORRA.0D.LCHLDR |

CLEARING\_IMPORT\_MARKET\_DATA import:

|                     |            |
|---------------------|------------|
| + Common Attributes |            |
| - Task Attributes   |            |
| CCP                 | LCH        |
| Market Data Types   | Rate Index |

Market Data Types = Rate Index

### 10.8.1 LCH LDR/CDR/HDR Spreads

The LDR/CDR/HDR spreads are imported from report LCH REP00042.

For LDR/CDR/HDR spreads, the Interface Value should be in the format CCY~INDEX~OIS0D~LDR/CDR/HDRSpread, for instance CAD~CORRA~OIS0D~HDRSpread.

|                  |                           |
|------------------|---------------------------|
| Name:            | LCH/Quotes                |
| Interface Value: | CAD~CORRA~OIS0D~HDRSpread |
| Calypso Value:   | MM.CAD.CORRA.1D.HDRSpread |
| Reverse Default: | <input type="checkbox"/>  |

CLEARING\_IMPORT\_MARKET\_DATA import:

|                     |            |
|---------------------|------------|
| + Common Attributes |            |
| - Task Attributes   |            |
| CCP                 | LCH        |
| Market Data Types   | Rate Index |

Market Data Types = Rate Index

## 10.8.2 LCH Bond Prices

The bond prices are imported from report LCH REP00034 based on the bonds' ISIN code. No data mapping is required.

[NOTE: The prices are imported into the quote set of the pricing environment defined in the scheduled task]

CLEARING\_IMPORT\_MARKET\_DATA import:

|                     |                   |
|---------------------|-------------------|
| + Common Attributes |                   |
| - Task Attributes   |                   |
| CCP                 | LCH               |
| Market Data Types   | Collateral Quotes |

Market Data Types = Collateral Quotes

## 10.8.3 CME FX NDF Rate Resets

The FX NDF rate resets are imported from report CME FXNDF.

The mapping between the FX Reset and the quote is done for CME/Quotes in the Calypso Mapping window as:

- Interface Value = FX.<ccy1>.<ccy2>.<CME FX reset>.<source>
- Calypso Value = FX.<ccy1>.<ccy2>.<Calypso FX Reset>.<source>

Example:

|                  |                        |
|------------------|------------------------|
| Name:            | CME/Quotes             |
| Interface Value: | FX.USD.CNY.USDCNY.SAEC |
| Calypso Value:   | FX.USD.CNY.CNY01.SAEC  |

[NOTE: The quotes are imported into the quote set of the pricing environment defined in the scheduled task]

CLEARING\_IMPORT\_MARKET\_DATA import:

|                     |                |
|---------------------|----------------|
| + Common Attributes |                |
| - Task Attributes   |                |
| CCP                 | CME            |
| Market Data Types   | FX Rate Resets |

Market Data Types = FX Rate Resets

Please consider QUOTE\_ALLOW\_IN\_FUTURE=false and QUOTE\_MAX\_DAY\_FUTURE environment property so that the system will not populate values in the future. Also, make sure that you add the appropriate default source in FX Rate Definition window (SAEC for example).

## 10.8.4 LCH / Comder FX Spot Rates by Currency Pair

FX Spot quotes are imported from reports FXMD0001 (LCH) and SpotQuote (Comder).

Calypso Mapping window:

|                  |            |
|------------------|------------|
| Name:            | LCH/Quotes |
| Interface Value: | AUD/EUR    |
| Calypso Value:   | FX.EUR.AUD |

CLEARING\_IMPORT\_MARKET\_DATA import:

|                     |        |
|---------------------|--------|
| + Common Attributes |        |
| - Task Attributes   |        |
| CCP                 | LCH    |
| Market Data Types   | Quotes |

Market Data Types = Quotes

## 10.8.5 LCH / Comder NDF Fixing Rates

NDF fixing rates are imported from reports FXMD0010 (LCH) and SpotQuote (Comder).

You need to define the FX Resets using [Configuration > Foreign Exchange > FX Rate Definitions](#).

CLEARING\_IMPORT\_MARKET\_DATA import:

|                     |            |
|---------------------|------------|
| + Common Attributes |            |
| - Task Attributes   |            |
| CCP                 | LCH        |
| Market Data Types   | Quotes NDF |

Market Data Types = Quotes NDF



## 10.9 CDML Files Processing

The CDML files processing is a two-step process.

You first need to store the files into the system using the scheduled task `CLEARING_TRANSLATE_TO_CDML`. Then you can process the files using the scheduled task `CLEARING_PROCESS_FROM_CDML`.

The scheduled tasks `CLEARING_TRANSLATE_TO_CDML` and `CLEARING_PROCESS_FROM_CDML` use the timezone defined in the scheduled task.

### 10.9.1 Supported Files

| CCP           | Trade Valuation  | Initial Margin   |
|---------------|--|--|
| <b>CME</b>    | IRSTR  | IRSMR3   |
| <b>COMDER</b> | FXNDF_Trades_Cleared<br>FXNDF_Maturing_Today<br>IRD_Trades_Cleared<br>Outstanding_cashflows  | EOD_IM_Report  |
| <b>EUREX</b>  | RPTCB202<br>RPTCC203<br>RPTCD200<br>RPTCI280   | RPTCC204   |
| <b>ICE</b>    | MARK TO MARKET MARGIN DETAIL report (NPV).<br><br>MARK TO MARKET MARGIN INTEREST DETAIL report (PAI).<br><br>TRADE PAYMENT DETAIL report (Upfront fees, Coupons, Credit Events). | Client gross Margin  |
| <b>LCH</b>    | 91xce(client)<br>91xe(house)<br>REP00002c (client)<br>REP00002 (house)<br>REP000105c (client)<br>REP105 (house)<br>REP00084c (client)<br>305 / 305c                              | REP00086c (client)<br>REP00086 (house)<br>REP00050g (client) |
| <b>LCH FX</b> | FREP0009 (CLIENT)<br>FRP0009 (HOUSE)   | FREP0026c (client)<br>FREP0014 (house)                       |

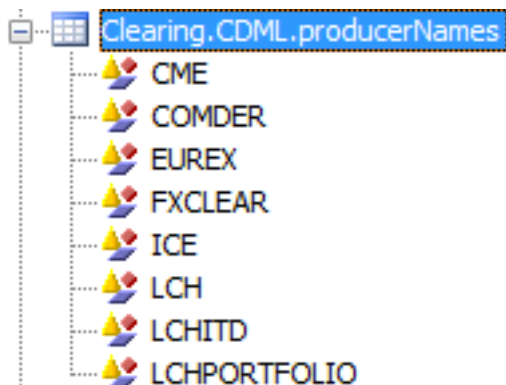
### 10.9.2 CLEARING\_TRANSLATE\_TO\_CDML

The scheduled task scans the subfolders (that represent the CCPs) and tries to find pre-defined sets of CCPs EOD reports needed to generate the CDML reports.

The scheduled task can be run multiple times. If it finds new information (e.g. EOD reports for another CCP), it will add this CCP data to the existing CDML report and will create a new version of the report.

This process can run in two modes:

- "Generation plus Import" - The system takes the raw CCP files and translates them into CDML files. The raw CCP files must be stored in subfolders (of the Base Folder) by CCP short name. The file producers must be defined in the domain "Clearing.CDML.producerNames".



Each producer requires its own set of EOD files to be able to generate CDML reports.

- "Import Only" - To import CDML files already translated into the system.

|                            |  |
|----------------------------|--|
| Task Type                  | CLEARING_TRANSLATE_TO_CDML   |
| External Reference         | IMPORT   |
| Comments                   |  |
| Description                |  |
| Attempts                   | 1  |
| Retry After, In Minutes    | 0  |
| JVM Settings               | -Xms512m -Xmx1024m -XX:MaxPermSize=256m  |
| Allow Task To              | <input type="checkbox"/> Skip Execute <input type="checkbox"/> Send Emails <input type="checkbox"/> Publish Business |
| <b>+ Common Attributes</b> |  |
| <b>- Task Attributes</b>   |  |
| Base Folder                | \${user.home}/Calypso/clearing/CDML  |
| CDML Processing            | Import Only  |
| Intraday                   | false  |

The timezone in the Common Attributes is mandatory.

### Attributes

- » Base Folder - Enter the location of the files.  
For the mode "Generation plus Import", the raw CCP files need to be organized in subfolders by CCP short name.  
For the mode "Import" only, the folder contains the CDML files to be imported into the system.
- » CDML Processing - Select the type of CDML processing "Import Only" or "Generation plus Import".
- » Intraday - False by default. Set to "true" to execute an intraday producer {CCP}ITD, for example LCHITD - Only applies to mode "Generation plus Import".  
For information on using Intraday = true, see [Intraday CDML Process](#).
- » Ignore Producers: List of producers to be ignored - Only applies to mode "Generation plus Import".

The scheduled task produces two types of XML reports:

- tradeValuationReport
- initialMarginReport

### 10.9.3 CLEARING\_PROCESS\_FROM\_CDML

The scheduled task CLEARING\_PROCESS\_FROM\_CDML consumes the imported tradeValuationReport and initialMarginReport CDML reports.

It creates CASH\_SETTLEMENT Clearing Transfer trades, Collateral Exposure trades, and PL Marks.

| Task Attributes  |  |
|------------------|--|
| CCP              |  |
| Clearing Service |  |
| CDML Report Type |  |
| Process Mode     |  |

The timezone in the Common Attributes is mandatory.

#### Attributes

- » CCP: Select one or more CCPs.
- » Clearing Service: Select one or more clearing services.
- » CDML Report Type: Select All, initialMarginReport, or tradeValuationReport.
- » Process Mode:
  - If you have selected the report type "tradeValuationReport", you can select All, Clearing Transfers, or Cleared Trade Marks, to create Clearing Transfer trades only, PL Marks only, or both (All).
  - If you have selected the report type "initialMarginReport", you can select Collateral Exposures to create Collateral Exposure trades.

### 10.9.4 CLEARING\_INTRADAY\_MARGIN\_REV

This scheduled task creates "return" trades for the intraday margin call trades of type ITD\_COLLATERAL created by the scheduled task CLEARING\_INTRADAY\_MARGIN when you use CDML to create the EOD Initial Margin trades.

It creates "return" trades of type ITD\_COLLATERAL, of opposite direction of the original trades, and with the trade keyword ITDMarginCallReturn=true. There is one return trade for each counterparty and currency.

| Task Attributes |      |
|-----------------|------|
| Ledger Type     | COV  |
| CCP             | LCH  |
| Product         | IRD  |
| Mode            | Both |

#### Attributes

- » Ledger Type – Select COV, NON-COV, or ALL.
- » CCP - Select LCH.
- » Product - Select the product IRD.
- » Mode - Client, House, or Both.  
This only applies to LCH – Select Client to import client files only, House to import house files only, or Both to import both.

## 10.10 COLLATERAL\_MANAGEMENT

It computes the exposure on the initial margin and variation margin, and generates cash margin calls. It requires that you save a Collateral Manager report template to retrieve selection criteria.

From the Calypso Navigator, navigate to **Processing > Collateral Management > Collateral Manager** (menu action `reporting.margincall.MarginCallDesktop`) to define a Collateral Manager report template.

For IM contracts, the scheduled task loads the corresponding Collateral Exposure trades.

For VM contracts, the scheduled task loads the cash accounts associated with the margin call contracts. The exposure is the inventory THEORETICAL Margin\_Call position that has been updated by the CASH\_SETTLEMENT Clearing Transfer trades.

|                         |  |
|-------------------------|--|
| Task Type               | COLLATERAL_MANAGEMENT  |
| External Reference      | 0.17 Collateral Mgmt Calypso US (Run T+1)  |
| Comments                | 2.2.0 Testing Setup Refresh  |
| Description             | 2.2.0 Testing Setup Refresh  |
| Attempts                | 1  |
| Retry After, In Minutes | 0  |
| JVM Settings            |  |
| Allow Task To           | <input type="checkbox"/> Skip Execute <input type="checkbox"/> Send Emails <input type="checkbox"/> Publish Business |
| + Common Attributes     |  |
| - Task Attributes       |  |
| Template                | CALYPUS  |
| Collateral Context      |  |
| Price method            |  |
| Optimization            |  |
| Workflow Action         |  |

### Attributes

- » Template - Select a Collateral Manager template to define the selection criteria.  
You can create a Collateral Manager template in the Collateral Manager using **File > Save Template**.
- » Collateral Context - Select a collateral context as needed.

The other attributes may remain empty.

📘 Please refer to Calypso Collateral Management documentation for complete details on this scheduled task.

## 10.11 CLEARING\_STATEMENT

This scheduled task generates Statement events that are sent to the Message engine to generate the actual client statements based on the message configuration for the message type "CLEARING\_STATEMENT". It can be run for all the CCPs that the clients use for clearing. It generates one statement per client.

|                                      |   |
|--------------------------------------|---|
| <b>Task Description</b>              |   |
| Task Type:                           | CLEARING_STATEMENT  |
| External Reference:                  | 0.0001 DAILY CUS01  |
| Comments:                            | 0.0001 DAILY CUS01  |
| Description:                         | 0.0001 DAILY CUS01  |
| <b>Execution Parameters</b>          |   |
| Attempts:                            | 1   |
| Retry After:                         | 0 minutes   |
| Expected Execution                   |   |
| JVM Settings:                        | -XX:MaxPermSize=192M -Djava.util.Arrays.useLegacyMergesort=true |
| Log Settings:                        |   |
| <b>Task Notification Options</b>     |   |
| <input type="checkbox"/> Send Emails | <input type="checkbox"/> Publish Business Events                |
| To User:                             |   |
| CCPs                                 | CME,LCH, ICE CLEAR CREDIT                                       |
| Static Data Filter                   |   |
| Client                               | CUS01   |
| Layout Style                         | Default   |
| Mode                                 | Daily   |
| New Trades for IRS                   | 0001 - CALYPUS New Trades IRD                                   |
| New Trades for FXNDF                 | 0001 - CALYPUS New Trades NDF                                   |
| New Trades for CDX                   |   |
| Open Trades for IRS                  | 0001 - CALYPUS Open Trades IRD                                  |
| Open Trades for FXNDF                | 0001 - CALYPUS Open Trades NDF                                  |
| Open Trades for CDX                  |   |
| Terminated Trades for IRS            | 001 - CALYPUS Terminated Trades IRD                             |
| Terminated Trades for FXNDF          | 0001 - CALYPUS Terminated Trades NDF                            |
| Terminated Trades for CDX            |   |
| Matured Trades for IRS               |   |
| Matured Trades for FXNDF             |   |
| Matured Trades for CDX               |   |
| Account Activity Template            | SWAP-ACTIVITY   |
| Collateral Position Template         | SWAP-MCPOSITION   |
| Collateral Allocation Template       | SWAP-MCALLOCATION   |
| Collateral Context                   | default   |

### Attributes

- » CCPs - Select the CCPs for which you want to consolidate the client statement.
- » Static Data Filter – You can select a static data filter that contains legal entity attributes to select the corresponding clients. This only applies if ALL is selected for the Client attribute.  
In order to allow the static data filter to contain legal entity attributes, you need to add the value ClearingLEAttribute to the domain "CustomStaticDataFilter".
- » Client - Select the client for which you want to generate the client statement, or ALL for all clients (or all clients satisfying the static data filter if set).
- » Layout Style: Select "Default" or "Condensed".

In the Condensed Client Statement, all pending settlements are aggregated in 1 row, and the following sections are included in the Clearing Cash Flows Summary:

- Separate Settlements
  - Initial Margin Summary
  - Summary of Payments
- » Mode - Select the mode: Daily to get the daily activity, Monthly to get the month to date activity, or Parent Daily to get parent level daily activity.
- See [Parent Clearing Statement](#) for "Parent Daily" setup requirements.
- » New Trades for IRS - Select the Trade Browser template for new IRD trades.
  - » New Trades for FXNDF - Select the Trade Browser template for new FX NDF trades.
  - » New Trades for CDX - Select the Trade Browser template for new CDX trades.
  - » Open Trades for IRS - Select the Trade Browser template for open IRD trades.
  - » Open Trades for FXNDF - Select the Trade Browser template for open FX NDF trades.
  - » Open Trades for CDX - Select the Trade Browser template for open CDX trades.
  - » Terminated Trades for IRS - Select the Trade Browser template for terminated IRD trades.
  - » Terminated Trades for FXNDF - Select the Trade Browser template for terminated FX NDF trades.
  - » Terminated Trades for CDX - Select the Trade Browser template for terminated CDX trades.
  - » Matured Trades for IRS - Select the Trade Browser template for matured IRD trades.
  - » Matured Trades for FXNDF - Select the Trade Browser template for matured FX NDF trades.
  - » Matured Trades for CDX - Select the Trade Browser template for matured CDX trades.
  - » Account Activity Template - Select the Account Activity report template.
  - » Collateral Position Template - Select the Collateral Position report template.
  - » Collateral Allocation Template - Select the Collateral Allocation report template.
  - » Collateral Context - Select "default".

The report templates are described below.

### **Performance Enhancements**

To improve the performance, you can set the following JVM parameters:

"-XX:UseConcMarkSweepGC -Xms1g -Xmx4g -XX:MaxPermSize=384m"

You can also set the number of threads to use when generating client statements in the domain "Clearing.Statement.parallel.numThreads".

## **New Trades for IRS Template**

Trade Browser template.

From the Calypso Navigator, navigate to **Deal Management > Trade Browser**.

[NOTE: Make sure that the "Trade Currency" column is selected as part of the Column Configuration]

Example = "001 - Calypso US New Trades IRD"

- Trade Attribute = IS\_CLIENT Contains true
- Processing org = <the clearing member>
- Trade Filter = New Trades
- Product Type = Swap, FRA
- Status = CLEARED, VERIFIED

The criteria of the "New Trades" trade filter are the following – It loads trades cleared today.

## New Trades for FX NDF Template

Same as New Trades for IRS with Product Type = FXNDF.

## New Trades for CDX Template

Same as New Trades for IRS with Product Type = CreditDefaultSwap, CDSIndex.

## Open Trades for IRS Template

Trade Browser template.

From the Calypso Navigator, navigate to **Deal Management > Trade Browser**.

[NOTE: Make sure that the "Trade Currency" column is selected as part of the Column Configuration]

Example = "001 - Calypso US Open Trades IRD"

Criteria

Template Description:

Trade: Start  -  End  +

Settle: Start  -  End  +

Process: Start  -  End  +

Maturity: Start  -  End  +  ☐ Open

Trade Id: ID  ...

Trade Attribute: IS\_CLIENT Contains true

Buy/Sell:  Max Rows#:

Bundle:  Id  ...

CP role: ALL  ...

Processing Org: CALYPSO\_US  ☐ Include Child Legal Entities

☐ Undo Date

Trade Filter: Open Trades

SD Filter:  ...

Filter Set:  ...

Currency:  ...

Product Family:  ...

Product Type: Swap,FRA

Product Id:

Books:  ...

Status: CLEARED,VERIFIED

Action:  ...

- Trade Attribute = IS\_CLIENT Contains true
- Processing org = <the clearing member>
- Trade Filter = Open Trades
- Product Type = Swap, FRA
- Status = CLEARED, VERIFIED

The criteria of the "Open Trades" trade filter are the following – It loads trades cleared before today.

Post Processing Position Spec Counterparty Fund Diary Criteria

Ranges Date / Time Product Criteria Trade Criteria Underlying Security Custom Criteria

New Rule Remove All Rules Collapse / Expand Panels

**MaturityDate is after today**

MaturityDate  is after  today

☐ Include null

**TerminationDate is after today**

TerminationDate  is after  today

☐ Has keyword ☒ Has not keyword

☐ Include null



|                 |               |                  |                |                     |
|-----------------|---------------|------------------|----------------|---------------------|
| Post Processing | Position Spec | Counterparty     | Fund           | Diary Criteria      |
| Ranges          | Date / Time   | Product Criteria | Trade Criteria | Underlying Security |
| Custom Criteria |               |                  |                |                     |

Criterion Name:  ?

Min:  -

Max:  -

## Open Trades for FX NDF Template

Same as Open Trades for IRS with Product Type = FXNDF.

## Open Trades for CDX Template

Same as Open Trades for IRS with Product Type = CreditDefaultSwap, CDSIndex.

## Terminated Trades for IRD Template

Trade Browser template.

From the Calypso Navigator, navigate to [Deal Management > Trade Browser](#).

[NOTE: Make sure that the "Trade Currency" column is selected as part of the Column Configuration]

Example = "001 - Calypso US Terminated Trades IRD"

| Criteria                           |   |
|------------------------------------|---|
| Template Description               | <input type="text"/>  |
| Trade                              | Start <input type="text"/> - <input type="text"/> End <input type="text"/> + <input type="text"/> |
| Settle                             | Start <input type="text"/> - <input type="text"/> End <input type="text"/> + <input type="text"/> |
| Process                            | Start <input type="text"/> - <input type="text"/> End <input type="text"/> + <input type="text"/> |
| Maturity                           | Start <input type="text"/> - <input type="text"/> End <input type="text"/> + <input type="text"/> |
| Trade Id                           | ID <input type="text"/> ... <input type="text"/>  |
| Trade Attribute                    | IS_CLIENT Contains true   |
| Buy/Sell                           | <input type="text"/> Max Rows# <input type="text"/>   |
| Bundle                             | <input type="text"/> Id <input type="text"/>  |
| CP role: ALL                       | <input type="text"/>  |
| Processing Org                     | CALYPSO_US <input type="text"/> <input type="checkbox"/> Include Child Legal Entities             |
| <input type="checkbox"/> Undo Date |   |
| Trade Filter                       | TERM Trades   |
| SD Filter                          | <input type="text"/> ...  |
| Filter Set                         | <input type="text"/> ...  |
| Currency                           | <input type="text"/> ...  |
| Product Family                     | <input type="text"/> ...  |
| Product Type                       | Swap,FRA  |
| Product Id                         | <input type="text"/>  |
| Books                              | <input type="text"/> ...  |
| Status                             | <input type="text"/> ...  |
| Action                             | <input type="text"/> ...  |

- Trade Attribute = IS\_CLIENT Contains true
- Processing org = <the clearing member>
- Trade Filter = TERM Trades
- Product Type = Swap, FRA
- Status = Not set

The criteria of the "TERM Trades" trade filter are the following – It loads trades terminated today.

|                 |               |                  |                |                     |
|-----------------|---------------|------------------|----------------|---------------------|
| Post Processing | Position Spec | Counterparty     | Fund           | Diary Criteria      |
| Ranges          | Date / Time   | Product Criteria | Trade Criteria | Underlying Security |
| Custom Criteria |               |                  |                |                     |

New Rule
 Remove All Rules
 Collapse / Expand Panels

**MaturityDate is on or after today include null** ✕ ⬆

MaturityDate ▼
 is on or after ▼
 today ▼

☒ Include null

**TerminationDate within the last 1 day(s) include null** ✕ ⬆

TerminationDate ▼
 within the last ▼
 1 ▲ ▼
 day(s) ▼

☒ Has keyword
 ☐ Has not keyword

☒ Include null

|                 |               |                  |                |                     |
|-----------------|---------------|------------------|----------------|---------------------|
| Post Processing | Position Spec | Counterparty     | Fund           | Diary Criteria      |
| Ranges          | Date / Time   | Product Criteria | Trade Criteria | Underlying Security |
| Custom Criteria |               |                  |                |                     |

☒ BUY
 ☒ SELL

Internal Reference ☒ IN

Bundle  ... Id ▼  ...

Bundle Attribute  ...

Book ☒ IN  ...

Trader ☒ IN  ...

Status ☒ IN  ...

Sales ☒ IN  ...

Book Attribute  ...

Keyword Value  ...

Keyword Has ▼  ...

## Terminated Trades for FX NDF Template

Same as Terminated Trades for IRS with Product Type = FXNDF.

## Terminated Trades for CDX Template

Same as Terminated Trades for IRS with Product Type = CreditDefaultSwap, CDSIndex.

## Matured Trades for IRD Template

Trade Browser template.

From the Calypso Navigator, navigate to **Deal Management > Trade Browser**.

[NOTE: Make sure that the “Trade Currency” column is selected as part of the Column Configuration]

Example = “001 - Calypso US Matured Trades IRD”

| Criteria   |                      |   |                      |                      |                      |                      |                      |                      |                      |
|--|----------------------|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Template Description <input type="text"/>                |                      |   |                      |                      |                      |                      |                      |                      |                      |
| Trade  | Start                | <input type="text"/>                                  | <input type="text"/> | End                  | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Settle   | Start                | <input type="text"/>                                  | <input type="text"/> | End                  | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Process  | Start                | <input type="text"/>                                  | <input type="text"/> | End                  | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Maturity   | Start                | 09/05/2013  | <input type="text"/> | End                  | 09/05/2013           | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Trade Id   | ID                   | <input type="text"/>                                  | <input type="text"/> |                      |                      |                      |                      |                      |                      |
| Trade Attribute  | IS_CLIENT            | Contains  |                      | true                 |                      |                      |                      |                      |                      |
| Buy/Sell   | <input type="text"/> | Max Ro...   |                      | <input type="text"/> |                      |                      |                      |                      |                      |
| Bundle   | <input type="text"/> | <input type="text"/>                                  | <input type="text"/> |                      |                      |                      |                      |                      |                      |
| CP role: ALL   | CUS01                |   |                      |                      |                      |                      |                      |                      |                      |
| Processing Org   | CALYPUS              | <input type="checkbox"/> Include Child Legal Entities |                      |                      |                      |                      |                      |                      |                      |
| <input type="checkbox"/> Undo Date                       |                      |   |                      |                      |                      |                      |                      |                      |                      |
| Trade Filter <input type="text" value="ALL"/>            |                      |   |                      |                      |                      |                      |                      |                      |                      |
| SD Filter <input type="text"/>                           |                      |   |                      |                      |                      |                      |                      |                      |                      |
| Filter Set <input type="text"/>                          |                      |   |                      |                      |                      |                      |                      |                      |                      |
| Currency <input type="text"/>                            |                      |   |                      |                      |                      |                      |                      |                      |                      |
| Product Family <input type="text"/>                      |                      |   |                      |                      |                      |                      |                      |                      |                      |
| Product Type <input type="text" value="Swap,FRA"/>       |                      |   |                      |                      |                      |                      |                      |                      |                      |
| Product Id <input type="text"/>                          |                      |   |                      |                      |                      |                      |                      |                      |                      |
| Books <input type="text"/>                               |                      |   |                      |                      |                      |                      |                      |                      |                      |
| Status <input type="text" value="EXERCISED,TERMINATED"/> |                      |   |                      |                      |                      |                      |                      |                      |                      |
| Action <input type="text"/>                              |                      |   |                      |                      |                      |                      |                      |                      |                      |

- Maturity Date = <today>
- Trade Attribute = IS\_CLIENT Contains true
- Processing org = <the clearing member>
- Trade Filter = ALL
- Product Type = Swap, FRA
- Status = PENDING, PRICING, VERIFIED, ALLOCATED, ROLLOVERED, MATURED, EXERCISED, TERMINATED

## Matured Trades for FX NDF Template

Same as Matured Trades for IRS with Product Type = FXNDF.

## Matured Trades for CDX Template

Same as Matured Trades for IRS with Product Type = CreditDefaultSwap, CDSIndex.

## Account Activity Template

Account Activity report template.

From the Calypso Navigator, navigate to **Reports > Nostro/Custodian Positions > Account Activity**.

[NOTE: Make sure that the “Currency” column is selected]

Example = “SWAP-ACTIVITY”

Criteria

Template Description

Start 04/18/2013 - 0D End 04/18/2013 + 0D Init Date NONE

Position Date Available ProcessingOrg ... Cash/Sec Cash

Position Class Client Cpty Id ... Currency CAD,CHF,EUR,GBP,JPY ...

Position Type Actual Account Id ... Name

Position Detail Start/End ☒ Detail by Account ☐ Show Only Positions ☐ Netting

Position Value Quantity ☐ Exclude Unchanged Positions ☐ Display

- Start and End = 0D
- Position Date = Available
- Position Class = Client
- Position Type = Actual
- Detail by Account = Checked
- Currency = <list of currencies>

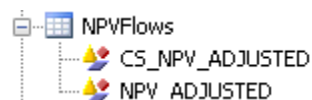
Make sure to select the currencies that you want to monitor.

This is a sample setup. You may choose the settings of the fields based on your business requirements.

You can define the flows that you want to filter out from the Account Activity section of the Client Statement in the domain "NPVFlows" and "NPVReversalFlows".

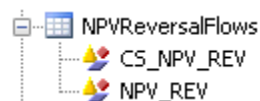
The domain "NPVFlows" contains NPV non-reversal flows, by default:

- CS\_NPV\_ADJUSTED
- NPV\_ADJUSTED



The domain "NPVReversalFlows" contains NPV reversal flows, by default:

- NPV\_REV
- CS\_NPV\_REV



## Collateral Position Template

Margin Call Position Entry report.

From the Calypso Navigator, navigate to **Processing > Collateral Management > Collateral Manager** - Report available under **Window > Report > Position**).

Example = "SWAP-MCPOSITION" (today's actual Margin\_Call positions)

**MarginCallPositionEntry Report (4/18/13 2:26:16 PM) / SWAP-MCPOSITION (User: calypso\_user)**

Report Data View Export Market Data Utilities Help

Criteria

MarginCallEntry

Process Date : Start [ ] - [ ] End [ ] + [ ]

Value Date : Start 04/18/2013 - [ ] OD [ ] End 04/18/2013 + [ ] OD [ ]

Processing Org [ ] ... Contract : [ ] ...

CP role: ALL [ ] ... Contract Types : [ ] ...

Position

Pricing Status : [ ]

Position Type : ACTUAL

Currency : [ ]

Underlying Type : [ ]

- Value Date Start and End = 0D
- Position Type = ACTUAL

## Collateral Allocation Template

Margin Call Allocation Entry report.

From the Calypso Navigator, navigate to **Processing > Collateral Management > Collateral Manager** - Report available under **Window > Report > Allocation**).

Example = "SWAP-MCALLOCATION" (today's margin call trades)

**MarginCallAllocationEntry Report (4/18/13 2:23:50 PM) / SWAP-MCALLOCATION (User: calypso\_user)**

Report Data View Export Market Data Utilities Help

Criteria

MarginCallEntry

Process Date : Start 04/18/2013 - [ ] OD [ ] End 04/18/2013 + [ ] OD [ ]

Value Date : Start [ ] - [ ] End [ ] + [ ]

- Process Date Start and End = 0D

➤ Please refer to the *Calypso Clearing Member User Guide* for sample client statements and complete details.

## 10.12 Parent Clearing Statement

This mode pertains to multi branch account structure wherein buy side has various funds which are clearing trades under parent entity. Buy side generally have each fund acting as cost center hence some flows of VM need to be accounted for at fund level however IM needs to be calculated at parent entity level taking offsetting risk advantage across all funds.

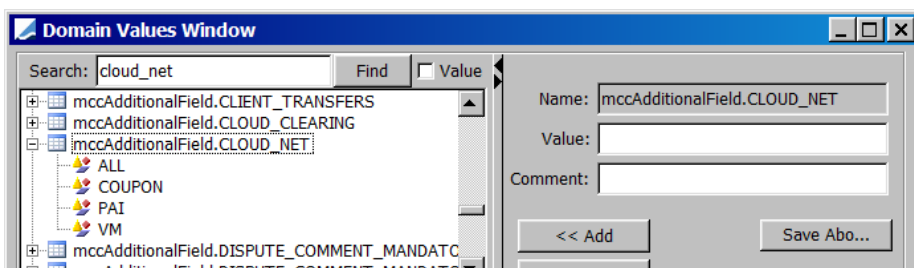
You can decide which flows need to be settled at parent level using the parent SDI functionality with environment property LOOK\_PARENT\_SDI = true and margin call contract attribute CLOUD\_NET. The SDIs can be configured so that the system uses the parent SDIs to settle the flows defined in CLOUD\_NET, and specific netting can be configured for those flows. The child SDIs are used otherwise.

The clearing statement allows reporting these flows using the scheduled task attribute Mode = Parent Daily. This only applies with the Default layout style.

### 10.12.1 Domain Values

Add the following domain values.

Domain "mccAdditionalField.CLOUD\_NET" - Possible list of flows that can be netted. For example: ALL, COUPON, PAI, VM. This is user-defined.



Domain "tradeKeyword":

Value = CLOUD\_NET

Domain "XferAttributes"

Values=CLOUD\_NET

Make sure that CLOUD\_NET is added to the domains "Clearing.MCC.propagateFields" and "PropagateTradeKeyword" so that it can be propagated to margin call trades and transfer attributes to be used in static data filters and netting configurations as needed.

### 10.12.2 Workflow

Make sure that the rule UpdateClearingMarginCallKeywords is set on the MarginCall workflow transition NONE – NEW – XXX.

Make sure that the rule PropagateTradeKeyword is set on the Transfer workflow transition NONE – NEW – XXX.

### 10.12.3 Legal Entities

Define Parent/ Child relationships between Parent fund and child entities as shown below.

Example: FUND\_A child of parent LEADFUND

## 10.12.4 Margin Call Contracts

Set the attribute CLOUD\_NET as needed for contracts that should be settled and netted at parent level.

In the example below, child FUND\_A is settling VM and PAI through its parent entity LEADFUND. Coupons are directly settled by FUND\_A. PAI has as separated netting bucket and VM is netted in a general bucket.

| Contract Id | Description      | Contract Type | Processing Org | Legal Entity | ADDITIONAL_FIELD.CLOUD_NET | Filter | ADDITIONAL_FIELD.INCLUDED_VM_FLOWS | PO Collateral Type | LE Collateral Type | Status | Start Date                 |
|-------------|------------------|---------------|----------------|--------------|----------------------------|--------|------------------------------------|--------------------|--------------------|--------|----------------------------|
| 30405       | FUNDA_VM_USD     | Client        | PO1            | FUND_A       | ALL                        |        |                                    | BOTH               | BOTH               | OPEN   | 6/25/12 3:09:00.000 PM EDT |
| 30901       | FUNDA_PAI_USD    | Client        | PO1            | FUND_A       | PAI                        |        | CS_PAI                             | BOTH               | BOTH               | OPEN   | 6/25/12 3:09:00.000 PM EDT |
| 30902       | FUNDA_COUPON_USD | Client        | PO1            | FUND_A       |                            |        | CS_COUPON                          | BOTH               | BOTH               | OPEN   | 6/25/12 3:09:00.000 PM EDT |

Make sure that the attributes INCLUDED\_VM\_FLOWS and CLOUD\_NET are compatible:

- CLOUD\_NET can be ALL or empty, if INCLUDED\_VM\_FLOWS is empty.
- CLOUD\_NET can be ALL or a subset of INCLUDED\_VM\_FLOWS, or empty, if INCLUDED\_VM\_FLOWS is not empty.

## 10.12.5 Settlement Instructions

### Parent Level

SWIFT SDIs should be set up at Parent level to instruct the payments of all children entities (including the parent itself when acting as a child entity) that are in scope, i.e. for transactions that are settled/ netted at the parent level.

Example:

**Settlement Delivery Instructions [140022SP2/V140TC/]**

Utilities Help

Edit Attributes & Notes Browse

SDI Id 15803

Reference 15803 Cash/Security BOTH

Role Client Contact Default

Beneficiary LEADFUND Processing Org PO1

Benef. Na... Products ANY

Ccy USD SD Filter SDI\_CloudNet

Pay/Rec BOTH Trade CounterParty ALL

Description SWIFT/BONY ☒ Preferred Priority 0

☐ Link SDI

Method SWIFT Add ☐ Direct

Identifier Effective From Effective To ☐ by Trade Date

Agent: BONY [intermediary] [intermediary2] Direct

Code BONY A/C ☐ Msg

Contact Default GL A...

Name Sub A/C R-Ship

Identifier

New Delete Save Save As New Reg. Xfer Close

Show Pending Authorization ☐ Authorization

**Static Data Filter Window [140022SP2/V140TC/]**

Name: SDI\_CloudNet Attributes... Simulate...

Comment: Pending Modifs

Groups: ANY

| Attribute         | Criteria    | Filter Value(s) |
|-------------------|-------------|-----------------|
| KEYWORD.CLOUD_NET | IS_NOT_NULL |                 |

Load New Delete Save Save as Usage Close

### Child Level

The only SWIFT SDIs required at Child level are the SDIs of the settlements that will be directly instructed by the Child fund, i.e. not applicable for Parent netting and settlement.

It is necessary to specify in a filter the applicable flows for the SDI. Note that this SDI needs also to be set up for the parent entity when it acting as a child entity and no netting is required

Example: FUND\_A settles the coupons at Child level.



**Settlement Delivery Instructions [140022SP2/V140TC/]**

Utilities Help

Edit Attributes & Notes Browse

SDI Id 16202

Reference 16202

Role Client

Beneficiary FUND\_A

Benef. Na...

Ccy USD

Pay/Rec BOTH

Description SWIFT/BONY

☐ Link SDI

Method SWIFT Add

Identifier

Cash/Security BOTH

Contact Default

Processing Org PO1

Products ANY

SD Filter NotCloudNetting

Trade CounterParty ALL

☒ Preferred Priority 0

☐ Direct

Effective From

Effective To

☐ by Trade Date

Agent: BONY [intermediary] [intermediary2] Direct

Code BONY A/C

☐ Msg

Contact Default GL A...

Name Sub A/C

Identifier

R-Ship

New Delete Save Save As New Reg. Xfer Close

Show Pending Authorization ☐ Authorization

**Static Data Filter Window [140022SP2/V140TC/]**

Name: NotCloudNetting

Attributes... Simulate...

Comment:

Pending Modifs

Groups: ANY

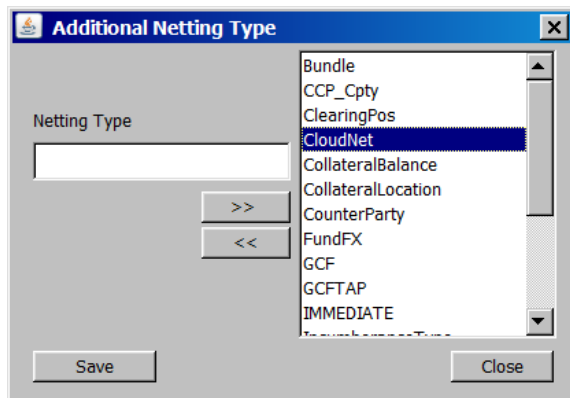
| Attribute         | Criteria | Filter Value(s) |
|-------------------|----------|-----------------|
| KEYWORD.CLOUD_NET | IS NULL  |                 |

Load New Delete Save Save as Usage Close

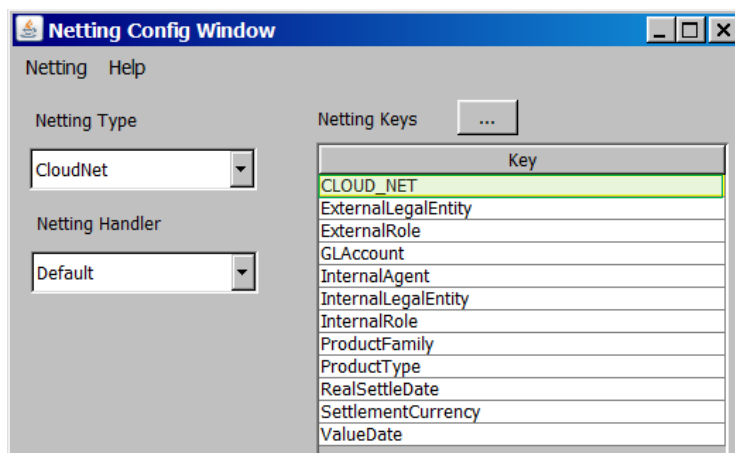
## 10.12.6 Netting Method

This netting method will be used to create the netting buckets as defined on the underlying MCC. For instance, if a Fund has a separate PAI contract where CLOUD\_NET is set to PAI and 2 further separate VM and Coupon contracts where CLOUD\_NET is set to ALL, then the system will create 2 netting buckets: 1 for the netting by flow type for PAI only and the other for the contracts that are tagged as ALL.

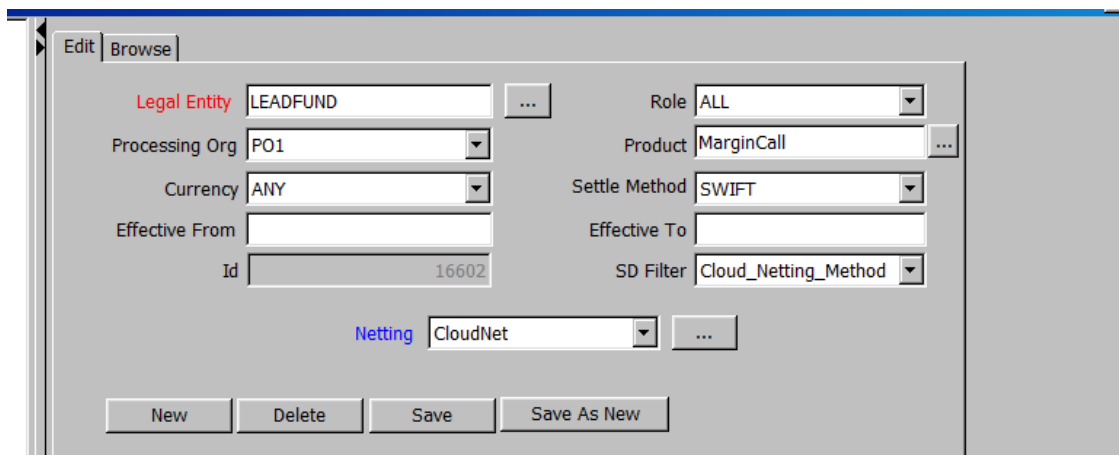
Create new netting type, for instance CloudNet.



You can use the same netting keys as CounterParty netting but add key CLOUD\_NET:



Create a new Netting Method as shown below



Specify in the filter which flow types should be included in this netting method:

Static Data Filter Window [140022SP2/HSBC\_OTC/]

Name: Cloud\_Netting\_Method    Attributes...    Simulate...

Comment:    Pending Modifs

Groups: ANY    ...

| Attribute         | Criteria    | Filter Value(s) |
|-------------------|-------------|-----------------|
| KEYWORD.CLOUD_NET | IS_NOT_NULL |                 |

## 10.12.7 Parent Statement

The CLEARING\_STATEMENT scheduled task is used to trigger the parent statement using Mode = Parent Daily and the following attributes:

- CCPs - List of CCPs in scope for the statement
- Client - Should be set to the Parent Entity(ies) only
- Layout - Default. Condensed is currently not supported for Parent statement
- Trade reports - Currently not supported, should be left empty
- Other reports - Same as default daily statement

| Task Attributes                |                        |
|--------------------------------|------------------------|
| CCPs                           | LCH                    |
| Static Data Filter             |                        |
| Client                         | LEADFUND               |
| Layout Style                   | Default                |
| Mode                           | Parent Daily           |
| New Trades for IRS             |                        |
| New Trades for FXNDF           |                        |
| New Trades for CDX             |                        |
| Open Trades for IRS            |                        |
| Open Trades for FXNDF          |                        |
| Open Trades for CDX            |                        |
| Terminated Trades for IRS      |                        |
| Terminated Trades for FXNDF    |                        |
| Terminated Trades for CDX      |                        |
| Matured Trades for IRS         |                        |
| Matured Trades for FXNDF       |                        |
| Matured Trades for CDX         |                        |
| Account Activity Template      | PO1_STMT_ACTIVITY      |
| Collateral Position Template   | PO1_STMT_MC_POSITION   |
| Collateral Allocation Template | PO1_STMT_MC_ALLOCATION |
| Collateral Context             | EOD_COLLATERAL_CONTEXT |

The Parent Daily Statement is an aggregation of all the flows of the Child entities that are tagged with the MCC attribute CLOUD\_NET. The statement is based on the default daily statement and follows the same logic.

The Parent statement can be distinguished from the child statement by looking at BO Message Attribute “Statement Type”: Set to PARENT\_DAILY for the parent statement and DAILY for the child statement.



Parent Daily Statement on 2017-04-05 for LeadFund

LeadFund

Financial Summary

Clearing Cash Flows Summary

|                        | USD         | Total (USD) |
|------------------------|-------------|-------------|
| Beginning Cash Balance | -459,652.00 | -459,652.00 |
| Commissions/Fees       | 0.00        | 0.00        |

## 10.13 Scheduled Tasks Execution

---

The scheduled tasks are executed by the Calypso Scheduler once you have defined triggers as described in the *Calypso Scheduled Tasks User Guide*.

### **Important Note – Timezones Considerations**

In order to successfully process scheduled tasks which combine the import and processing of EOD files, **you need to run the relevant scheduled tasks for a given day before the EOD of the books where the trades are saved**, based on the book's timezone.

For example, the book's timezone is New York EOD 5pm. To process today's files, you need to run the scheduled tasks before 5pm New York time, regardless of where you run the scheduled tasks from, so that the trades are timestamped as of today, and the settlement date is computed from today.

### **Order of Execution**

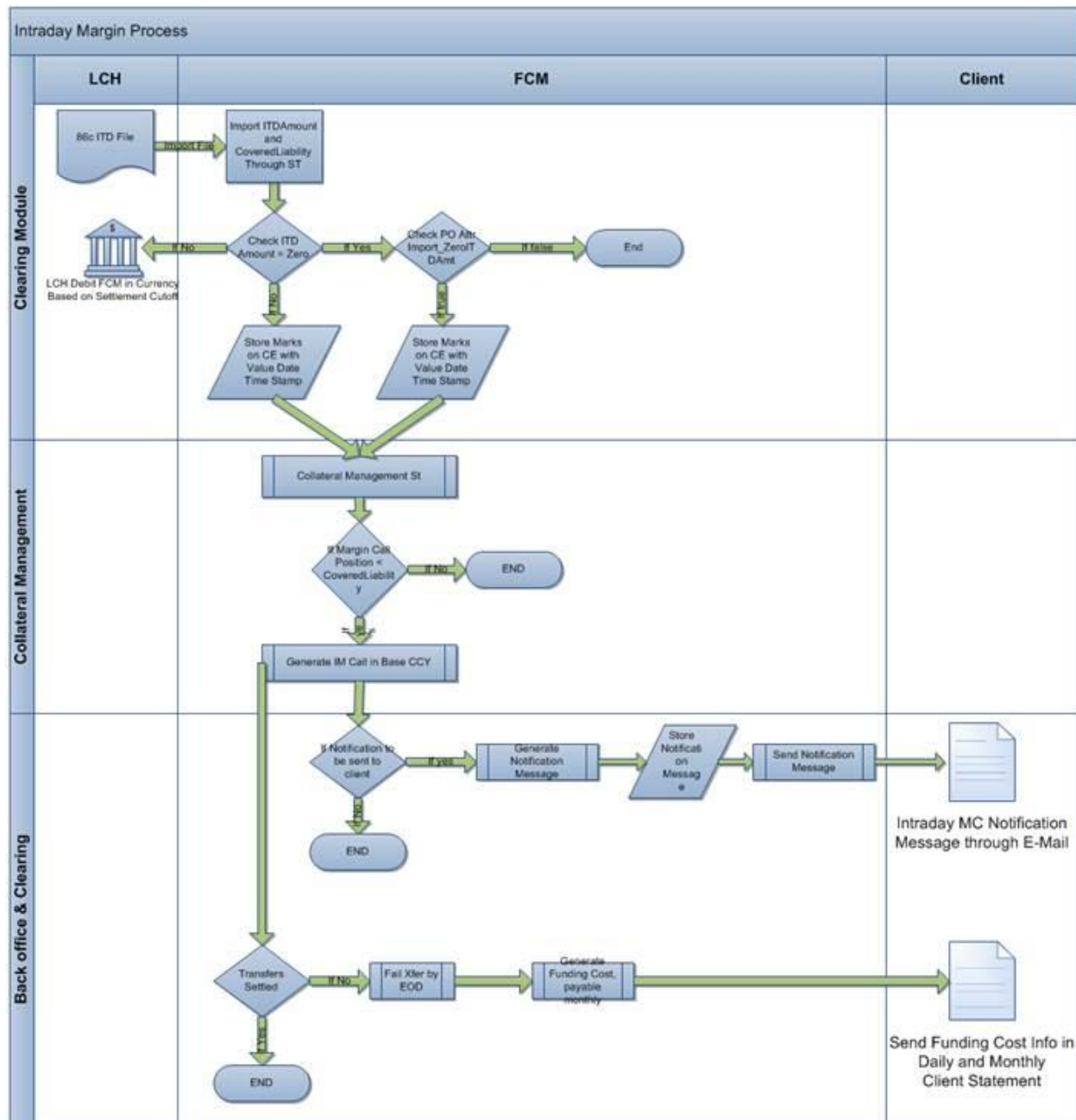
They should be executed in the following order:

- CLEARING\_SOD\_MARGINCALL (start of day)
- CLEARING\_INTRADAY\_MARGIN (every half hour during the day)
- CLEARING\_TRANSLATE\_TO\_CDML
- CLEARING\_PROCESS\_FROM\_CDML
- CLEARING\_INTRADAY\_SETTLEMENT (for intraday GBP FRAs only)
- COLLATERAL\_MANAGEMENT
- CLEARING\_STATEMENT
- ERS\_ANALYSIS

## Section 11. Intraday Margin Calls to Clients

This section describes the setup for making intraday margin calls to clients, and sending XML margin call notifications.

Intraday margin calls to clients follow the diagram below.



### 11.1 PL Mark Mapping

In this process we translate yyyyymmdd\_REP00086c - Intraday Margin Split\_ "n" into CDML format for intraday reporting. 86c Intraday contains CoveredLiability = (**CoveredIM + CoveredLM + Covered AM + CoveredBR + CoveredCM + CoveredNPVChange**)

This report gives information on intraday initial margin requirements at a portfolio level for client activity.

- **Frequency:** Intraday, LCH generates the report every 15 mins
- **Report Structure:** This report contains the following information
  - **MbrMnemonic** = "ShortName"
  - **Account** = "C" representing client activity
  - **ReportingCCY** = Currency in which CoveredLiability is reported
- **Sub Components of CoveredLiability:** We are importing the following components for intraday client reporting purposes along with CoveredLiability in CollateralExposure trades:
  - **CoveredIM** = Initial Margin for all registered trades.
  - **CoveredLM** = Liquidity Margin: Liquidity Risk Multiplier multiplied by the Initial Margin amount. This is taken from the Previous Days Close of Business.
  - **CoveredAM** = Additional Margin for all registered trades.
  - **CoveredBR** = BR for all registered trades.
  - **CoveredCM** = CM within the total liability amount which has registered a call. This is only populated should a backload call or a TriReduce call be made.
  - **CoveredNPVChange** = NPV change for all registered trades -i.e. CoveredNPV – NPVPreviousDay.
  - **ItidCallAmount** = Non-cumulative Intraday call amount.

## 11.2 Configuration Requirements

### 11.2.1 Domain Values

In the domain "Clearing.Statement.ITD.useBaseValue" add the value True or False.

- If true, amounts are converted to the base currency of the collateral context.
- If false, amounts are converted to the contract currency of the LCH IM contracts.

### 11.2.2 Date Rule Setup

The following date rules are needed for the margin call contract for ad-hoc or intraday valuation.

#### *Daily date rule for Valuation Date Frequency*

The screenshot shows the 'Date Rules' configuration window. The 'Name' field is set to 'Daily'. The 'Type' dropdown is set to 'DAILY'. The 'Day' field is '0' and 'Add Days' is '0'. The 'Month' dropdown is set to 'JAN'. There are 'Select All' and 'UnSelect All' buttons. A grid of checkboxes for months (Jan-Dec) is all checked. The 'Add Relative Months' field is '0' and the 'Relative Type' dropdown is set to 'Relative'. The 'WeekDay' dropdown is set to 'NONE', 'Rank' is 'NONE', and 'Date Roll' is 'NO\_CHANGE'. There are radio buttons for 'Bus', 'Cal' (selected), and 'Bus Days'. The 'Holidays' field is 'NYC' with a dropdown arrow. The 'Check Holiday' checkbox is unchecked. A 'Relative' label is at the bottom left.

***VD=0D date rule for Valuation Time Offset***

The **Date Rules** dialog box is configured as follows:

- Name:** VD=0D
- Type:** RELATIVE
- Day:** 0, **Add Days:** 0
- Month:** JAN
- Buttons:** Select All, UnSelect All
- Month Selection:**
  - Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
- Add Relative Months:** 0
- Relative Type:** Absolute
- WeekDay:** NONE
- Rank:** NONE
- Date Roll:** NO\_CHANGE
- Bus:** ☒ **Cal:** ☐ **Bus Days:** ☐
- Holidays:** NYC
- Check Holiday:** ☐
- Relative:** Daily
- Value:** 3727

### 11.2.3 IM Margin Call Contract Setup

You need to set up Ad-Hoc details for the IM margin call contracts: Check "Ad-Hoc Calls" in the Ad-Hoc Details panel.

This enables the Valuation details.

The **Margin Call Window - Version - 0** is configured as follows:

- Name:** AEGON\_IM\_LCH\_IRS
- Description:**
- Concentration:** Additional Info
- Optimization:** Eligible Books
- Child Configurations:** Eligible Securities, Eligible Currencies
- Ratings:**
- Parties:** Details
- Dates & Times:** Ad-Hoc Details
- Initial Margin:**
- Independent Amount:**
- Calls:**
  - Ad-Hoc Calls: ☒
- Valuation:**
  - Valuation Date Frequency: Daily
  - Valuation Time Offset: VD=0D
  - Valuation Date Time: 2:28 pm
  - Valuation Time Zone: America/New\_York

- » Set the Valuation Date Frequency as Daily and the Valuation Time Offset as the relative date rule based on the Daily date rule previously defined.

You also need to set an end-of-day pricing environment and an intraday pricing environment in the Details panel.

| Details                        |               |
|--------------------------------|---------------|
| Status                         | OPEN          |
| Contract Type                  | Client        |
| Contract Group                 |               |
| Contract Direction             | BILATERAL     |
| Secured Party                  | ProcessingOrg |
| Rehypothecable Collateral      |               |
| End Of Day Pricing Environment | FROMDB        |
| Intraday Pricing Environment   | FROMDB        |
| Include End Date Exposure      |               |

## 11.2.4 Collateral Contexts

You need to define a collateral context for end-of-day processing, and one for intraday processing.

### **EOD Collateral Context**

It should have Pricing Env Type = EOD, and Valuation = Standard.

It is used for EOD processing in the scheduled task COLLATERAL\_MANAGEMENT, and in the Collateral Manager.

| Collateral Context Configuration |                        |
|----------------------------------|------------------------|
| Name :                           | EOD_Collateral_Context |
| Description :                    | EOD collateral context |
| Pricing Env Type                 | EOD                    |
| Valuation                        | Standard               |

### **ITD Collateral Context**

It should have Pricing Env Type=ITD, and Valuation= Adhoc.

It is used for intraday processing in the scheduled task COLLATERAL\_MANAGEMENT, and in the Collateral Manager.



Collateral Context Configuration

Collateral Context Util Help

Name : ITD\_Collateral\_Context 1 0 ☒ Default

Description : ITD collateral context 2.3.6-14.1.0.

Product Definition Position Definition Currency Definition

Entry Attributes Allocation Attributes Workflow Pricing Context Attributes

Definition

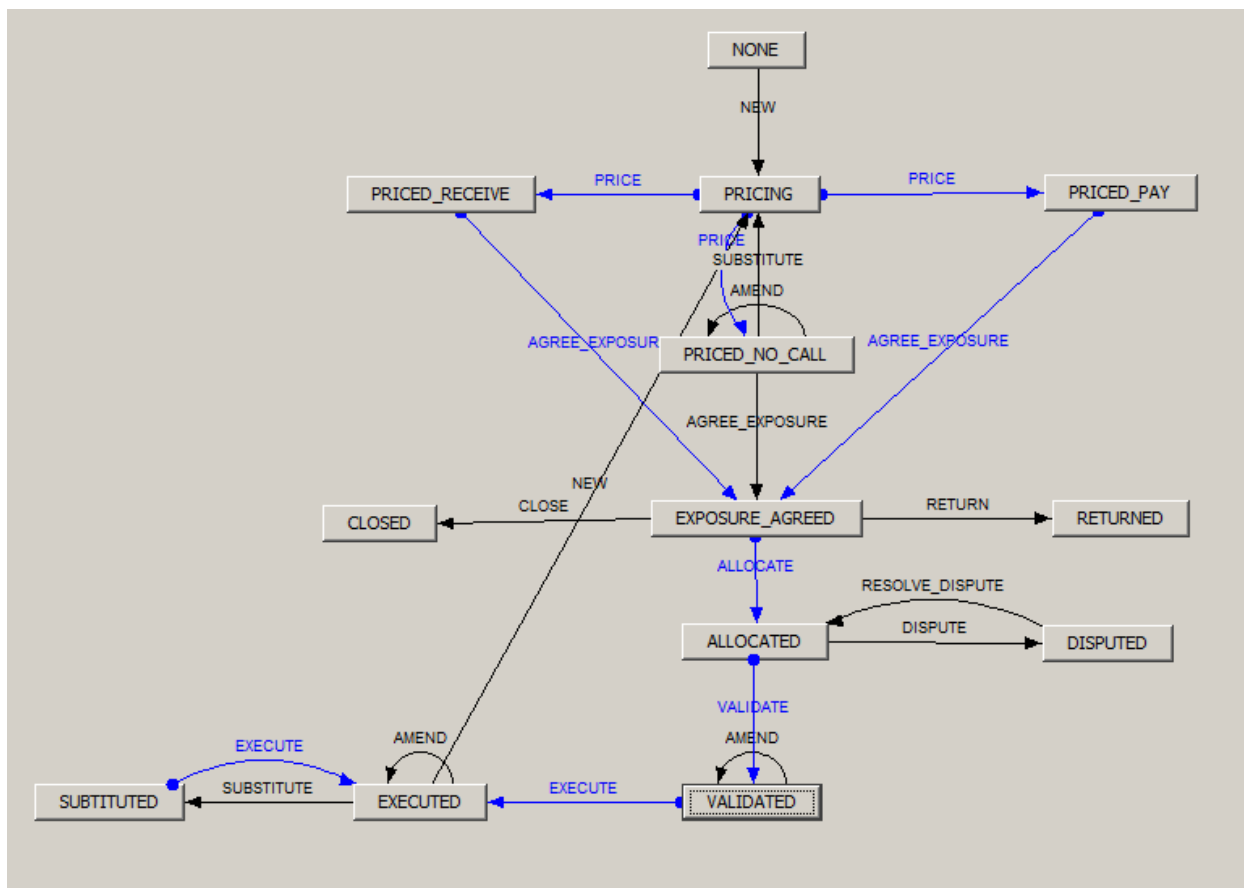
|                  |       |
|------------------|-------|
| Pricing Env Type | ITD   |
| Rating Scenario  |       |
| Valuation        | AdHoc |

You can also define a separate collateral workflow for the intraday collateral context using the Workflow panel.

### Workflow Setup

You can create a separate Collateral workflow for each context, or add a NEW transition from EXECUTED to PRICING.

It is also important to have a SUBSTITUTE intermediate transition to apply the workflow rule SetMarginCallTradeTypeAttribute.



The workflow rule SetMarginCallTradeTypeAttribute needs to be added on the VALIDATE and SUBSTITUTE transitions. This rule sets the keyword CCPSettlementType to ITD or EOD based on the Pricing Env Type of the collateral context.

**WorkFlow Action**

Id: 14762

Action: VALIDATE

Orig Status: ALLOCATED

Result Status: VALIDATED

Event Class: Collateral

Subtype: ALL

Product: ALL

Processing Org: ALL

☐ Different User
 ☐ Create Task
 ☒ Use STP
 ☐ Use KickOff/Cut Off

☐ Log Completed
 ☒ Preferred Action
 ☐ Update Only
 ☐ Generate Intermediary Event

☐ Needs man. Auth.
 Priority: 0

Rules: SetMarginCallTradeTypeAttribute

**WorkFlow Action**

Id: 33202

Action: SUBSTITUTE

Orig Status: EXECUTED

Result Status: SUBSTITUTED

Event Class: Collateral

Subtype: ALL

Product: ALL

Processing Org: ALL

☐ Different User
 ☐ Create Task
 ☐ Use STP
 ☐ Use KickOff/Cut Off

☐ Log Completed
 ☐ Preferred Action
 ☐ Update Only
 ☐ Generate Intermediary Event

☐ Needs man. Auth.
 Priority: 0

Rules: SetMarginCallTradeTypeAttribute

## 11.2.5 Processing Org Attributes

You need to specify the following attributes on the processing organization:

- EODCollateralContext – Enter the EOD collateral context. Used to apply on Margin Report filters to generate appropriate information on ITD notification XML.
- ITDCollateralContext – Enter the ITD collateral context. Used to apply on Margin Report filters to generate appropriate information on ITD notification XML.
- ImportZeroMarginAmountITD – Used when importing the COVEREDLIABILITY column. Default is true.
  - If false, COVEREDLIABILITY and the other PL marks are imported **ONLY** if ITDCALLAMOUNT column <> 0
  - If true, PL Marks are imported regardless of the value in the ITDCALLAMOUNT column.
- ApplyBufferITD – Used to apply a buffer against intraday margin calls. Default is false.
  - If false, no buffer is applied.
  - If true, a buffer (multiplier) is applied.

## 11.2.6 Intraday Notification Message

The system creates an XML file on creation of the Margin Call Trades for intraday. It is stored into the local folder. This message is used for client notification and downstream reporting.

### Message Setup

Product Type = MarginCall

Message Type = CLEARING\_ITD\_STATEMENT

Receiver Role = Statement Recipient

Event Type = STATEMENT

Format Type= XML

The screenshot shows a 'Message Setup' dialog box with two tabs: 'Edit' and 'Browse'. The 'Edit' tab is active. The dialog is organized into two columns of fields. The left column includes: Product Type (MarginCall), Event Type (VERIFIED\_TRADE), Message Type (CLEARING\_ITD\_STATEMENT), Processing Org (ALL), PO Contact Type (Default), Receiver (ALL), Receiver Role (ExtCounterParty), Rec Contact Type (Default), and Grouping. The right column includes: Language (English), Address Type (ITD\_STATEMENT\_FILE), Gateway (FILE), Format Type (XML), Template (ClearingITDStatement.xml), and SD Filter (isITDMarginCallTradeType). Below these fields are three checkboxes: Matching, Do not Send Message, and Inactive. At the bottom, there is a 'Config Id' field with the value 286200, and three buttons: Delete, Save, and Save As New.

### SD Filter Setup

The static data filter checks the trade keyword **MarginCallTradeType**.

The screenshot shows a 'Static Data Filter Window' titled '[142002/CLEARING\_37/calypso\_user]'. It has a 'Name' field with the value 'isITDMarginCallTradeType', an empty 'Comment' field, and a 'Groups' field with the value 'ANY'. There are 'Attributes...' and '...' buttons. Below these fields is a table with the following structure:

| Attribute                 | Criteria | Filter Value(s) |
|---------------------------|----------|-----------------|
| KEYWORD.CCPSettlementType | IN       | ITD             |

An 'Add' button is located between the 'Criteria' and 'Filter Value(s)' columns.

### Message Sender Configuration

**Message Sender Config**

Sender Config | Copy Config

Message Status: TO\_BE\_SENT | Product Type: MarginCall

Advice Type: CLEARING\_ITD\_STATEMENT | Address Type: ITD\_STATEMENT\_FILE

Static Data Filter: [ ] ... | Gateway: FILE

☒ Save      Master and Copies AdviceDocuments will be saved in DB

☒ Send      ☐ Sender By Method      ☒ Sender By Gateway

GatewayFILEDocumentSender class will be called

## 11.3 Scheduled Tasks

Configure the scheduled task CLEARING\_TRANSLATE\_TO\_CDML with Intraday = true.

|                            |   |
|----------------------------|---|
| Task Type                  | CLEARING_TRANSLATE_TO_CDML  |
| External Reference         | CDML Intraday Import  |
| Comments                   |   |
| Description                |   |
| Attempts                   | 1   |
| Retry After, In Minutes    | 0   |
| JVM Settings               | -Xms512m -Xmx1024m -XX:MaxPermSize=256m   |
| Allow Task To              | <input type="checkbox"/> Skip Execute <input type="checkbox"/> Send Emails <input type="checkbox"/> Publish Business Events |
| <b>+ Common Attributes</b> |   |
| <b>- Task Attributes</b>   |   |
| Base Folder                | /home/clearingV14/Calypso/clearing/MasterFolder   |
| CDML Processing            | Import Only   |
| Intraday                   | true  |

On execution of this scheduled task, the system imports PL marks on existing Collateral Exposure trades.

After executing this scheduled task, you need to execute the scheduled task COLLATERAL\_MANAGEMENT with the intraday collateral context, to generate the margin calls and the intraday message notifications.

|                            |  |
|----------------------------|--|
| Task Type                  | COLLATERAL_MANAGEMENT  |
| External Reference         |  |
| Comments                   |  |
| Description                |  |
| Attempts                   | 1  |
| Retry After, In Minutes    | 0  |
| JVM Settings               | -Xms512m -Xmx1024m -XX:MaxPermSize=256m  |
| Allow Task To              | <input type="checkbox"/> Send Emails <input type="checkbox"/> Publish Business Events To |
| <b>+ Common Attributes</b> |  |
| <b>- Task Attributes</b>   |  |
| Template                   | Clearing OTC   |
| Collateral Context         | ITD_Collateral_Context   |
| Price method               |  |
| Optimization               |  |
| Workflow Action            | NEW  |

## Section 12. Custodial Segregation

The integration of MT569 messages allows supporting custodial segregation.

MT569 messages (message type INCOMINGCUSTSEG) can be integrated using the MESSAGE\_MATCHING scheduled task or the Import Message engine. Based on the incoming messages, it generates Security Margin Calls on a dummy bond (bond with security code CLEARING\_DUMMY\_CUST\_SEG=True).

The margin call contract is identified using the margin call attribute CCP\_SEGREGATION\_ACCOUNT.

### 12.1 Setup Requirements

#### 12.1.1 Dummy Bond

The dummy bond to be used for generating the security margin calls is identified with product code CLEARING\_DUMMY\_CUST\_SEG = True.

You need one dummy bond per currency.

#### 12.1.2 Processing Org

The processing Org must have the legal entity attribute ClearingDummyCustSegBond = True to create the security margin calls using the dummy bond.

**Legal Entity Attributes Window - Version - 0**

Legal Entity:  ... Role:

Processing Org:

Attribute Type:  ... Value:

| Id    | Processing Org | Legal Entity | Role | Attribute Type             | Attribute Value   |
|-------|----------------|--------------|------|----------------------------|-------------------|
| 13120 | ALL            | CGM LLC      | ALL  | CMEProcessingOrgId         | CLP               |
| 13121 | ALL            | CGM LLC      | ALL  | COMDERFirmId               | CRED              |
| 5801  | ALL            | CGM LLC      | ALL  | Clearing Business Calendar | CCP               |
| 14102 | ALL            | CGM LLC      | ALL  | ClearingDummyCustSegBond   | True              |
| 6302  | ALL            | CGM LLC      | ALL  | ClearingReportingCurrency  | USD               |
| 1108  | ALL            | CGM LLC      | ALL  | Client Clearing Book       | CGM LLC CLIENT    |
| 12602 | ALL            | CGM LLC      | ALL  | EODCollateralContext       | default           |
| 7001  | ALL            | CGM LLC      | ALL  | FUNDING BOOK               | IM Based Fee Book |
| 1107  | ALL            | CGM LLC      | ALL  | House Clearing Book        | CGM LLC HOUSE     |
| 12402 | ALL            | CGM LLC      | ALL  | ITDCollateralContext       | LCH_INTRADAY      |
| 12603 | ALL            | CGM LLC      | ALL  | ImportZeroMarginAmountITD  | true              |
| 1602  | ALL            | CGM LLC      | ALL  | LCHFirmId                  | CC1               |
| 1109  | ALL            | CGM LLC      | ALL  | Minimum CFTC Requirement   | 1,000,000         |

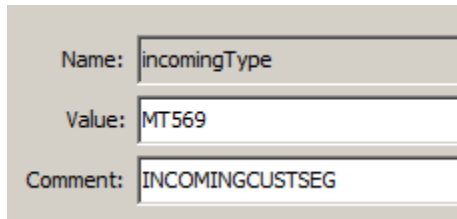
Load Delete Save ☐ Authorization Close

Show Pending Authorizations

### 12.1.3 Incoming Message

Add MT569 to the domain "incomingType":

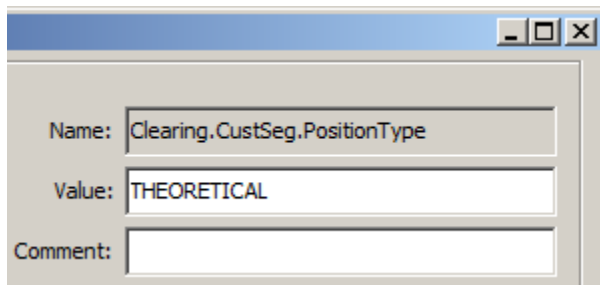
- Value = MT569
- Comment = INCOMINGCUSTSEG



A screenshot of a form with three input fields. The first field is labeled "Name:" and contains the text "incomingType". The second field is labeled "Value:" and contains the text "MT569". The third field is labeled "Comment:" and contains the text "INCOMINGCUSTSEG".

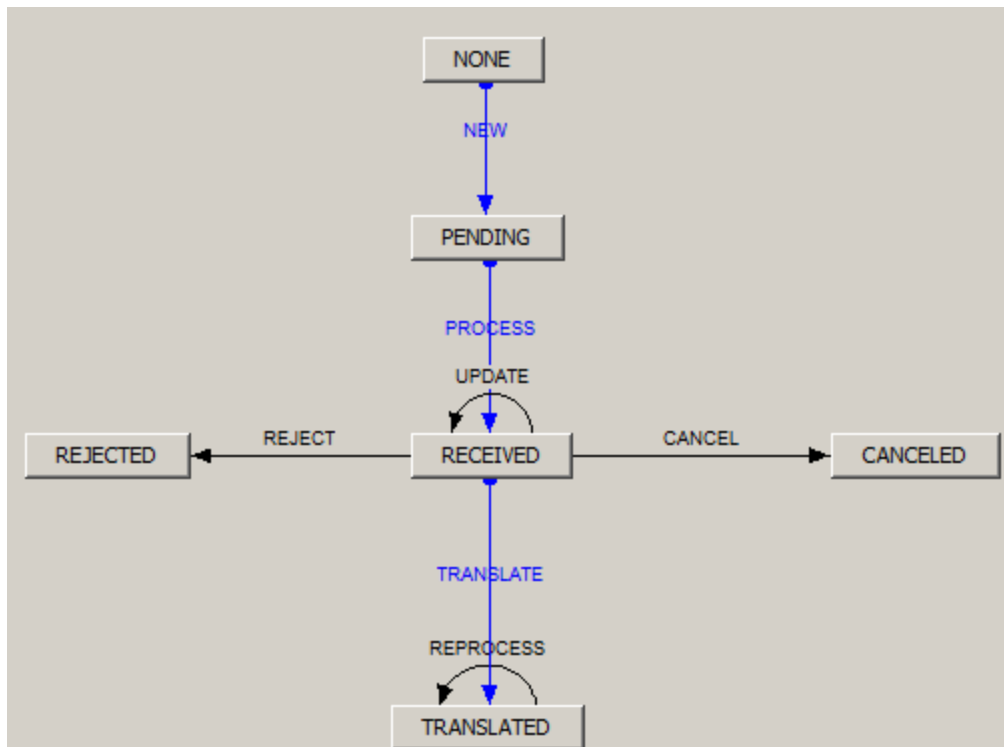
### 12.1.4 Position Selection

Specify the position type you want to use to determine the margin call position in the domain "ClearingCustSeg.PositionType" – It can be THEORETICAL or ACTUAL.



A screenshot of a form with three input fields. The first field is labeled "Name:" and contains the text "Clearing.CustSeg.PositionType". The second field is labeled "Value:" and contains the text "THEORETICAL". The third field is labeled "Comment:" and is empty.

### 12.1.5 INCOMINGCUSTSEG Message Workflow



File | Domains | Help

Workflows

- CAElection
- Collateral
- HedgeRelationshipDefinition
- LegalEntity
- LifeCycleEvent
- PSEventMessage**
  - PO:ALL
    - Product:ALL
      - Subtype:ALL
      - Subtype:BRIDGEMSG
      - Subtype:CFTC\_REPORTII
      - Subtype:GATEWAYMSG
      - Subtype:INCOMINGCUST**
      - Subtype:RECONCILIATION
- PSEventTrade
- PSEventTransfer

Processing Org: ALL

Event Class: PSEventMessage Subtype: **INCOMINGCUSTSEG** Product: ALL

Orig Status: RECEIVED Action: TRANSLATE Result Status: TRANSLATED

☐ Different User ☐ Create Task ☒ Use STP ☐ Use KickOff/Cut Off 0 Priority

☐ Log Completed ☐ Preferred Action ☐ Update Only ☐ Generate Intermediary Event ☐ Needs manual Auth

Rules: TranslateSwiftToMarginCall

Filter:

Comment:

| Id    | Orig Status | Action    | Resulting Status | Different User           | Use STP                             | Priority | Log                      | Subtype         | Prod |
|-------|-------------|-----------|------------------|--------------------------|-------------------------------------|----------|--------------------------|-----------------|------|
| 14103 | NONE        | NEW       | PENDING          | <input type="checkbox"/> | <input type="checkbox"/>            | 0        | <input type="checkbox"/> | INCOMINGCUSTSEG | ALL  |
| 14104 | PENDING     | PROCESS   | RECEIVED         | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 0        | <input type="checkbox"/> | INCOMINGCUSTSEG | ALL  |
| 14105 | RECEIVED    | TRANSLATE | TRANSLATED       | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 0        | <input type="checkbox"/> | INCOMINGCUSTSEG | ALL  |
| 14106 | RECEIVED    | CANCEL    | CANCELED         | <input type="checkbox"/> | <input type="checkbox"/>            | 0        | <input type="checkbox"/> | INCOMINGCUSTSEG | ALL  |
| 14107 | RECEIVED    | REJECT    | REJECTED         | <input type="checkbox"/> | <input type="checkbox"/>            | 0        | <input type="checkbox"/> | INCOMINGCUSTSEG | ALL  |
| 14108 | TRANSLATED  | REPROCESS | TRANSLATED       | <input type="checkbox"/> | <input type="checkbox"/>            | 0        | <input type="checkbox"/> | INCOMINGCUSTSEG | ALL  |

| Orig Status | Action    | Result Status | STP | WF Rule                    |
|-------------|-----------|---------------|-----|----------------------------|
| NONE        | NEW       | PENDING       |     |                            |
| PENDING     | PROCESS   | RECEIVED      | Yes |                            |
| RECEIVED    | TRANSLATE | TRANSLATED    | Yes | TranslateSwiftToMarginCall |



| Orig Status | Action    | Result Status | STP | WF Rule                    |
|-------------|-----------|---------------|-----|----------------------------|
| TRANSLATED  | REPROCESS | TRANSLATED    |     | TranslateSwiftToMarginCall |
| RECEIVED    | CANCEL    | CANCELED      |     |                            |
| RECEIVED    | REJECT    | REJECTED      |     |                            |

## 12.2 MT569 Message Integration

You can use the scheduled task MESSAGE\_MATCHING or the Import Message engine to import the MT569 messages.

### MESSAGE\_MATCHING Scheduled Task

**Scheduled Task Window [140022SP2/calypso\_140022sp2/]**

Report Tools Help

Definition Report

? Type: MESSAGE\_MATCHING Description: Custodial S

Trade Filter: Pricing Env: FROMDB

User: Filter Set:

Measures:

Time Zone: America/Los\_Angeles Exec Time:

From Days: 0 To: 0 Valuation Time:

Holidays: ... Undo Time:

☐ Skip Exec CutOff: 0 Hour: 0 Min:

Attributes

| Attribute               | Value           |
|-------------------------|-----------------|
| Swift Message Delimiter | -}              |
| Swift File              | MT569_1C_2T.txt |
| InputDir                | C:\TEMP         |
| File Rename             | False           |
| Gateway                 |                 |
| ExternalMessageType     |                 |

### Import Message Engine

You need to start the SwiftImportMessageEngine using the Engine Manager in Web Admin with the config Swift.

You may need to add it if it is not available:

Name = SwiftImportMessageEngine

Class = com.calypso.engine.advice.ImportMessageEngine

The "config" engine parameter is config = Swift

## Section 13. Collateral Sweeping

Collateral Sweeping supports the following scenarios:

- Sweeping VM to IM for independent entity in base currency
- Sweeping VM to IM for parent/child entity in base currency

### 13.1 Margin Call Contracts Setup

**Margin Call Contract:** You need to define MCC with LE role as Client and Orderer Role as CounterParty.




**Position Date:** You need to define IM and VM contracts with position date as POSITION\_DATE\_VALUE.

| Parties   |                     | Details | Dates & Times | Exposure Groups | Initial Margin | Independent Amount |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
|---|---------------------|---------|---------------|-----------------|----------------|--------------------|--------|--|---------------|-----|----------------|--|--------------------|-----------------|---------------|---------------|--------------------------------|----------|------------------------------|----------|--------------------------------|----------|---------------------------|--|--------------------------------|--|-------------------------------|--|---|--|---------------------|--|---------------|-------------|---------------|---------------------|
| Details   |                     |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Ad-Hoc Details  |                     |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Triparty Details  |                     |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Q- Type here to filter contract details properties  |                     |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| <div> <div>+</div> <div>Perimeter</div> </div> <div> <div>+</div> <div>Workflow</div> </div> <div> <div>+</div> <div>Margin Call Generation Level</div> </div> <div> <div>-</div> <div>Details</div> </div> <table border="1"> <tbody> <tr><td>Status</td><td></td></tr> <tr><td>Contract Type</td><td>AFB</td></tr> <tr><td>Contract Group</td><td></td></tr> <tr><td>Contract Direction</td><td>NET - BILATERAL</td></tr> <tr><td>Secured Party</td><td>ProcessingOrg</td></tr> <tr><td>End Of Day Pricing Environment</td><td>INTRADAY</td></tr> <tr><td>Intraday Pricing Environment</td><td>INTRADAY</td></tr> <tr><td>Simulation Pricing Environment</td><td>INTRADAY</td></tr> <tr><td>Include End Date Exposure</td><td></td></tr> <tr><td>Exclude Delivery Date Accruals</td><td></td></tr> <tr><td>Ignore MTA on Returned Margin</td><td></td></tr> <tr><td>Ignore MTA on Returned Margin below Threshold</td><td></td></tr> <tr><td>Rounding before MTA</td><td></td></tr> <tr><td>Position Type</td><td>THEORETICAL</td></tr> <tr><td>Position Date</td><td>POSITION_DATE_VALUE</td></tr> </tbody> </table> |                     |         |               |                 |                |                    | Status |  | Contract Type | AFB | Contract Group |  | Contract Direction | NET - BILATERAL | Secured Party | ProcessingOrg | End Of Day Pricing Environment | INTRADAY | Intraday Pricing Environment | INTRADAY | Simulation Pricing Environment | INTRADAY | Include End Date Exposure |  | Exclude Delivery Date Accruals |  | Ignore MTA on Returned Margin |  | Ignore MTA on Returned Margin below Threshold |  | Rounding before MTA |  | Position Type | THEORETICAL | Position Date | POSITION_DATE_VALUE |
| Status  |                     |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Contract Type   | AFB                 |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Contract Group  |                     |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Contract Direction  | NET - BILATERAL     |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Secured Party   | ProcessingOrg       |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| End Of Day Pricing Environment  | INTRADAY            |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Intraday Pricing Environment  | INTRADAY            |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Simulation Pricing Environment  | INTRADAY            |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Include End Date Exposure   |                     |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Exclude Delivery Date Accruals  |                     |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Ignore MTA on Returned Margin   |                     |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Ignore MTA on Returned Margin below Threshold   |                     |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Rounding before MTA   |                     |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Position Type   | THEORETICAL         |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |
| Position Date   | POSITION_DATE_VALUE |         |               |                 |                |                    |        |  |               |     |                |  |                    |                 |               |               |                                |          |                              |          |                                |          |                           |  |                                |  |                               |  |   |  |                     |  |               |             |               |                     |




**Linked Configurations:** You need to link IM MCC to VM MCC and vice versa.

If LEs are holding parent child relationship (through LE Parent setup) then user should be able to see child MCC in Parent Linked Configuration and Parent MCC in Child MCC Linked Configuration.

See below CPTY\_ISA parent IM linked to various child VM MCC in USD ccy.

| Child Configurations  |               |                  |                |              |        |                         |
|---|---------------|------------------|----------------|--------------|--------|-------------------------|
| Linked Configurations   |               |                  |                |              |        |                         |
| (Name)  |               |                  |                |              |        |                         |
| (Description)   |               |                  |                |              |        |                         |
|    |               |                  |                |              |        |                         |
| Contract Id   | Contract Type | Contract Subtype | Processing Org | Legal Entity | Role   | Description             |
| 6401  | Client        | Master           | PO1            | CPTY_ISA     | Client | CPTY_ISA_VM_USD         |
| 41502   | Client        | Master           | PO1            | CPTY_ISA_130 | Client | CPTY_ISA_130_LCH_VM_USD |
| 41508   | Client        | Master           | PO1            | CPTY_ISA_131 | Client | CPTY_ISA_131_LCH_VM_USD |
| 41510   | Client        | Master           | PO1            | CPTY_ISA_132 | Client | CPTY_ISA_132_LCH_VM_USD |

Similarly individual Child and Parent VM MCC is linked to parent IM MCC, see below one example:

| Child Configurations  |               |                  |                |              |        |                 |
|---|---------------|------------------|----------------|--------------|--------|-----------------|
| Linked Configurations   |               |                  |                |              |        |                 |
| (Name)  |               |                  |                |              |        |                 |
| (Description)   |               |                  |                |              |        |                 |
|    |               |                  |                |              |        |                 |
| Contract Id   | Contract Type | Contract Subtype | Processing Org | Legal Entity | Role   | Description     |
| 6310  | Client        | Master           | PO1            | CPTY_ISA     | Client | CPTY_ISA_LCH_IM |
|   |               |                  |                |              |        | Total 1         |

**Preference Template:** The scheduled task COLATTERAL\_DISTRIBUTION requires a Preference Report template.

**Select Preference Report template**

| Collateral     | Public        |
|----------------|---------------|
| Disputed       | Public        |
| EOD_Collateral | Public        |
| EUC            | Public        |
| <b>FCM</b>     | <b>Public</b> |
| FCM            | Private       |
| FCM_Sweeping   | Public        |
| ITD_Collateral | Public        |
| SWEEPING       | Public        |

| Filter                    |                                     |
|---------------------------|-------------------------------------|
| PO Name                   | PO1                                 |
| LE Name                   |                                     |
| Contract Types            |                                     |
| Contract Groups           |                                     |
| Contract Filter           |                                     |
| Contract Ids              | 6401,41501,41502,41503,41504,4150   |
| Status                    | ALLOCATED,CLOSED,DISPUTED,EXECU     |
| Processing Types          |                                     |
| Collateral Context        |                                     |
| Collateral Context        | EOD_COLLATERAL_CONTEXT              |
| Allocation Window         |                                     |
| Check Allocation Position | <input checked="" type="checkbox"/> |
| Validate Eligibility      | <input type="checkbox"/>            |
| Allocation                |                                     |
| Netted Allocation         |                                     |
| Netted Position           |                                     |
| Concentration Limits      |                                     |
| Concentration History     |                                     |
| Pending Substitution      |                                     |
| Optimization              |                                     |
| Configuration             |                                     |
| Allocation                | Allocate                            |
| Log                       | <input type="checkbox"/>            |

### 13.1.1 Collateral Context

**Collateral Context:** The scheduled task COLATTERAL\_DISTRIBUTION requires a collateral context with ContextBased valuation method.

**Collateral Context Configuration**

Collateral Context   Util   Help

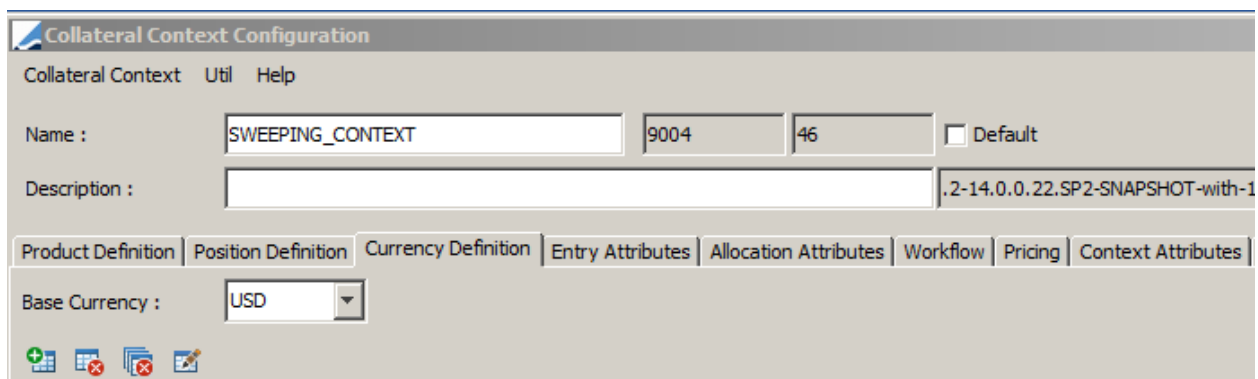
Name :          ☐ Default

Description :

Product Definition   Position Definition   Currency Definition   Entry Attributes   Allocation Attributes   Workflow   Pricing   Context Attributes

| Definition          |                     |
|---------------------|---------------------|
| Pricing Env Type    | EOD                 |
| Rating Scenario     |                     |
| <b>Valuation</b>    | <b>ContextBased</b> |
| Quote Offset        |                     |
| Exposure Offset     |                     |
| Exposure Ratio Base |                     |
| Valuation Offset    |                     |
| Business Calendar   | CCP                 |

The base currency should be same as that of MCC's base currency.



**Collateral Context Configuration**

Collateral Context Util Help

Name : SWEEPING\_CONTEXT 9004 46 ☐ Default

Description : .2-14.0.0.22.SP2-SNAPSHOT-with-1

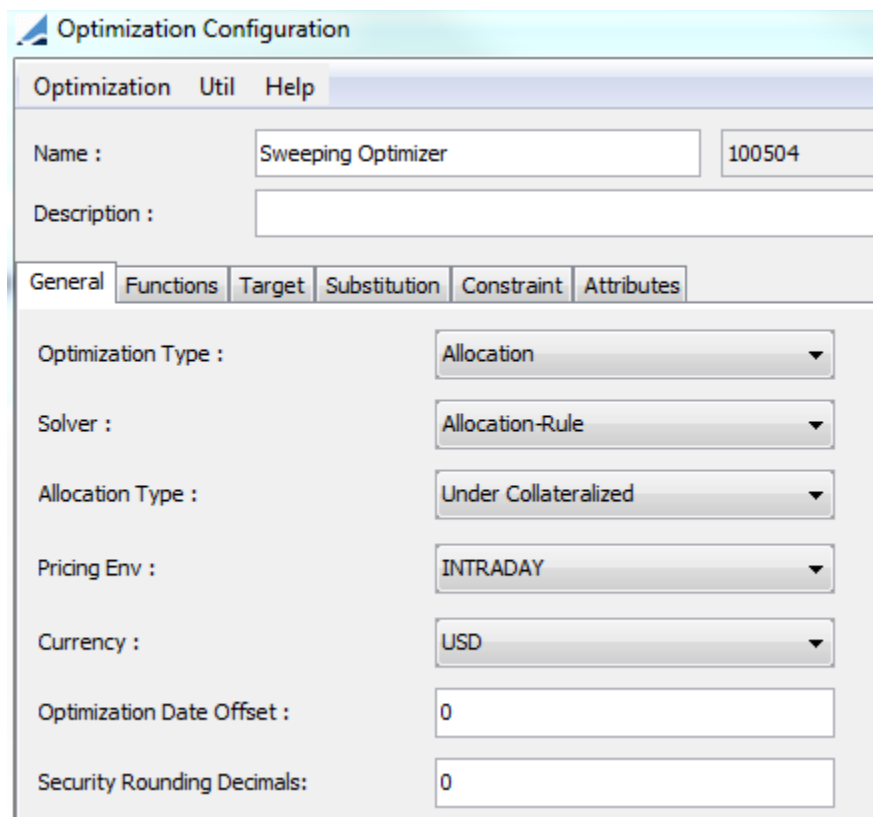
Product Definition | Position Definition | **Currency Definition** | Entry Attributes | Allocation Attributes | Workflow | Pricing | Context Attributes

Base Currency : USD

Icons: +, -, X, Y, Z

### 13.1.2 Optimization Configuration

**Optimization Configuration:** The scheduled task COLLATERAL\_DISTRIBUTION requires an optimization configuration.



**Optimization Configuration**

Optimization Util Help

Name : Sweeping Optimizer 100504

Description :

General | Functions | Target | Substitution | Constraint | Attributes

Optimization Type : Allocation

Solver : Allocation-Rule

Allocation Type : Under Collateralized

Pricing Env : INTRADAY

Currency : USD

Optimization Date Offset : 0

Security Rounding Decimals: 0

- **Optimization Type:** Allocation to make sweeping/allocation from VM to IM
- **Solver:** Allocation Rule
- **Allocation Type:** Under Collateralized
- **Pricing Env:** Matching to MCC of IM and VM
- **Currency:** MCC base currency

**Target:**

Create a Target Configuration of type "Category" using **Util > Target Configuration** to define the currency that needs to be swept.

The screenshot shows the 'Target Configuration' window. The 'Name' field is 'Category-Cash', the 'ID' is '100502', and the 'Version' is '1'. The 'Description' field is empty. The 'Definition' tab is selected, showing 'Target Type' as 'Category'. Below, the 'Categories' section contains a table with one entry: 'Cash' with 'USD'.

| Type | Name |
|------|------|
| Cash | USD  |

Then create a Target configuration of type "Allocation-rule" using **Util > Target Configuration**.

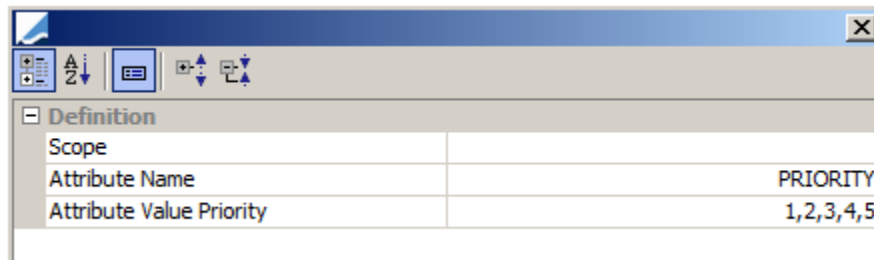
The screenshot shows the 'Target Configuration' window for an 'Allocation-rule' target type. The 'Name' field is 'Sweeping', the 'ID' is '100503', and the 'Version' is '1'. The 'Description' field is empty. The 'Definition' tab is selected, showing 'Target Type' as 'Allocation-rule'. Below, there are three sections for allocation rules: 'Contract Allocation Rules', 'Group Allocation Rules', and 'Collateral Allocation Rules'. Each section has a table with 'Type', 'Name', and 'Description' columns.

| Type     | Name               | Description                              |
|----------|--------------------|--|
| Contract | Contract-Attribute | Sort contracts by attribute. This rul... |

| Type       | Name                | Description                 |
|------------|---------------------|-----------------------------|
| Collateral | Collateral-Category | Sort allocation by category |

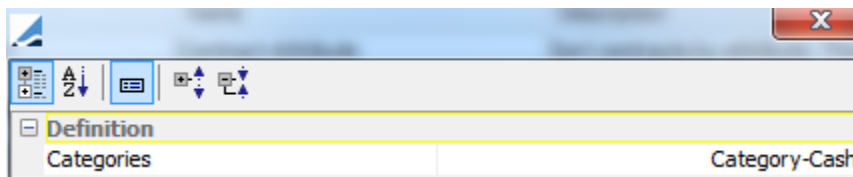
For the Contract Allocation Rules, add an allocation rule of type "Contract-Attribute" and select the attribute PRIORITY.



| Definition               |           |
|--------------------------|-----------|
| Scope                    |           |
| Attribute Name           | PRIORITY  |
| Attribute Value Priority | 1,2,3,4,5 |

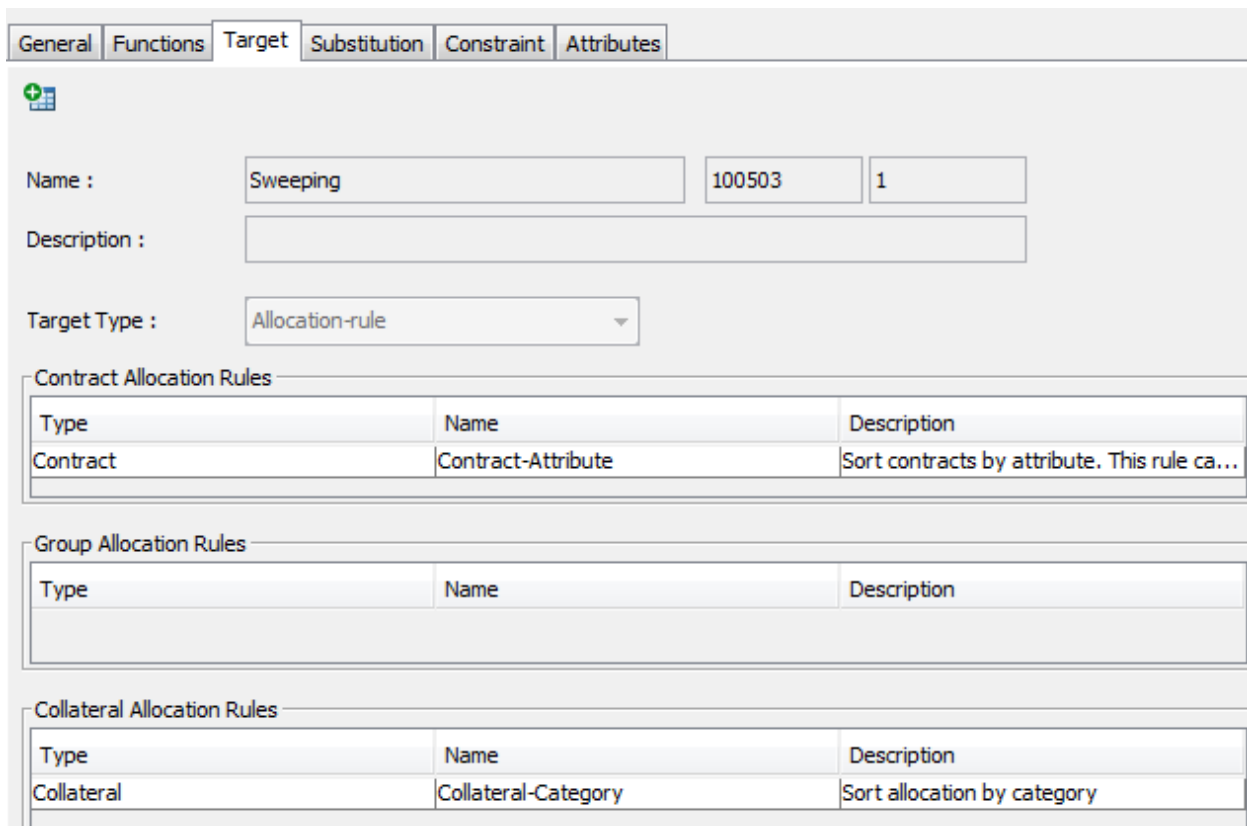
It is set in the margin call contract attribute PRIORITY.

For the Collateral Allocation rule, add an allocation rules of type "Collateral-Category" and select the target configuration of type "Category" previously created.



| Definition |               |
|------------|---------------|
| Categories | Category-Cash |

Finally, select the target configuration of type "Allocation-rule" in the Target panel of the Optimization Configuration.



General Functions **Target** Substitution Constraint Attributes

Name : Sweeping 100503 1

Description :

Target Type : Allocation-rule

Contract Allocation Rules

| Type     | Name               | Description                                  |
|----------|--------------------|--|
| Contract | Contract-Attribute | Sort contracts by attribute. This rule ca... |

Group Allocation Rules

| Type | Name | Description |
|------|------|-------------|
|------|------|-------------|

Collateral Allocation Rules





| Type       | Name                | Description                 |
|------------|---------------------|-----------------------------|
| Collateral | Collateral-Category | Sort allocation by category |

**Substitution:** Never as system should just sweep fungible cash collateral from VM to IM unlike any substitution process.

|                       |           |        |              |            |            |
|-----------------------|-----------|--------|--------------|------------|------------|
| General               | Functions | Target | Substitution | Constraint | Attributes |
| Substitution Method : |           |        | Never        |            |            |

**Constraint:** Add the following constraints.

- Required-Margin - To make sure allocated amount is equal to GRM
- Collateral-Distribution - To allocate cash (only) available on margin call entry
- Eligibility - To sweep all currencies which are defined as eligible currencies in IM and VM MCC

|   |           |  |              |            |            |
|---|-----------|--|--------------|------------|------------|
| General   | Functions | Target   | Substitution | Constraint | Attributes |
| <div></div> |           |  |              |            |            |
| Type  |           | Description                                      |              | Scope      |            |
| Eligibility   |           | Allocate securities that are eligible to the ... |              | Contract   |            |
| Collateral-Distribution   |           | Allocate cash or security available on the...    |              | Global     |            |
| Required-Margin   |           | Allocated amount must be equal to the Gl...      |              | Contract   |            |

## 13.2 Scheduled Task COLLATERAL\_DISTRIBUTION

Run the scheduled task COLLATERAL\_DISTRIBUTION with the configurations previously defined.

|                                      |  |
|--------------------------------------|--|
| Task Description                     |  |
| Task Type:                           | COLLATERAL_DISTRIBUTION                          |
| External Reference:                  | Transfer of collateral                           |
| Comments:                            |  |
| Description:                         |  |
| Execution Parameters                 |  |
| Attempts:                            | 1  |
| Retry After:                         | 0 minutes  |
| JVM Settings:                        | -Xms512m -Xmx1024m -XX:MaxPermSize=256m          |
| Log Settings:                        |  |
| Task Notification Options            |  |
| <input type="checkbox"/> Send Emails | <input type="checkbox"/> Publish Business Events |
| To User:                             |  |
| + Common Attributes                  |  |
| - Task Attributes                    |  |
| Template                             | FCM  |
| Collateral Context                   | SWEEPING_CONTEXT                                 |
| Price method                         | PRICE  |
| Optimization                         | Sweeping Optimizer                               |
| Sweeping Type                        | Sweep All Excess                                 |