Nasdaq Calypso

TriOptima Integration Guide

Version 3.2.0

Revision 30.0
March 2025
Approved

Document History

Revision	Published	Summary of Changes
1.0	February 2011	Enhancement for TriOptima 1.1.0: trade creation process
2.0	July 2011	Completing edition
3.0	December 2011	Completing edition
4.0	March 2012	Edition for TriOptima 1.3
5.0	July 2013	Edition for TriOptima 1.4.X – update change within Calypso V14
6.0	August 2013	Enhancement of Rates Report to retrieve deltas based on Futures contracts and Bond/Swap spread
7.0	May 2014	Enhance TRI_REDUCE_IMPORT ST for MarkitWire Trades
8.0	April 2015	Enhance TRI_REDUCE_IMPORT ST to update the Trade identified as MarkitWire trades to add Termination Fee Rates Report: Possibility to select Underlying Names instead of Delta Tenor columns
9.0	September 2018	Edition of TriOptima 1.6.0 (calypso V16) Process of Unwind Proposal file for SwapCrossCurrency
10.0	October 2018	Updates for version 1.7.4.
11.0	March 2019	Updates for version 1.7.5.
12.0	May 2019	Updates for version 1.7.6.
13.0	June 2019	Updates for version 1.8.2
14.0	March 2020	Updates for version 1.8.3
15.0	June 2020	Updates for version 1.8.4

Revision	Published	Summary of Changes
16.0	April 2021	Updates for version 1.8.5, 1.8.6
17.0	August 2021	Updated for version 1.10.0, 1.10.1
18.0	December 2021	Version 1.10.2 – Technical release only
19.0	January 2022	Version 2.0.0, 2.0.1, 2.0.2 - Technical release only – Version 17.0 compatibility
20.0	February 2022	Version 2.1.0
21.0	March 2022	Version 1.11.0
22.0	August 2022	Version 2.2.0, 1.12.0
23.0	October 2022	Version 2.3.0
24.0	March 2023	Version 2.4.0
25.0	April 2023	Version 1.13.0
26.0	January 2024	Version 3.0.3 – Technical release only – Compatibility with version 18 Version 1.14.0
27.0	February 2024	Version 3.0.4 – Technical release only
28.0	October 2024	Version 3.1.0 – Release notes only
29.0	February 2025	Version 2.5.0, 2.6.0, 3.1.1 - Using "yyyy" pattern for dates instead of "YYYY".
30.0	March 2025	Version 3.2.0 – Release notes only

This document guides you through the setup and the process of the TriOptima/TriReduce interface.

Table of Contents

Introduction

TriReduce is a multilateral termination process proposed by TriOptima: for each session, Participants identify trades that are no longer necessary to hold in inventory for accounting, regulatory or risk reasons. Once these trades have been matched to those from other participants, TriReduce produces a proposal of deals that can be terminated, and for new trades to be created (internal and external trades), depending on the product.

Once all proposals are accepted, participants execute the Trioptima proposal: terminate, create the relevant trades, and pay / receive associated fees.

For more information, go to http://www.trioptima.com/services/trireduce.

Products supported by this module are:

- For Credit: CreditDefaultSwap, CDSIndex, CDSIndexTranche, CDSABX
- For Rates: Swap, FRA

TriOptima proposal contains different transaction types:

- For Credit: Full Termination, New trades – external, New trades – internal
- For Rates: Full Termination, Partial Termination, Increase

Product Types	Full Termination	Increase Partial Termination	Creation
Single Name CDS	x	Not Applicable	x
Itraxx / CDS Indexes	x	Not Applicable	x
Tranches	x	Not Applicable	x
CDS ABS Index	x	Not Applicable	x
IR Swap	x	X	Not Applicable
FRA	x	X	Not Applicable

TriOptima module is compatible starting with Calypso V11.1.04.SP4

There are 2 parts in this new module:

- The Trade report templates for trade description files generation
- A Scheduled Task that applies termination and for Credit, creates both new external and internal trades suggested by TriOptima proposal CSV file.

Configuration

TriOptima is installed as part of the Calypso Installer when you select “Trioptima Interface” in the interfaces.

There is a dependency on installing the Data uploader as well.

2.1 TriOptima Schema Data

When you run Execute SQL all required files (including TriOptimaSchemaData.xml) are already loaded.

The domain values created are:

- Scheduled task
- Event Type
- Exception Type
- Message attribute
- Message Type
- WorkflowRule Message
- Reporting Type

2.2 TriOptima Demonstration Report Templates

You can import the “TriOptimaDemoReportTemplates.zip” file using CAM Application.

It will create the following objects in Calypso, which can be used either as demonstration data or entry point for the building of your own defined templates.

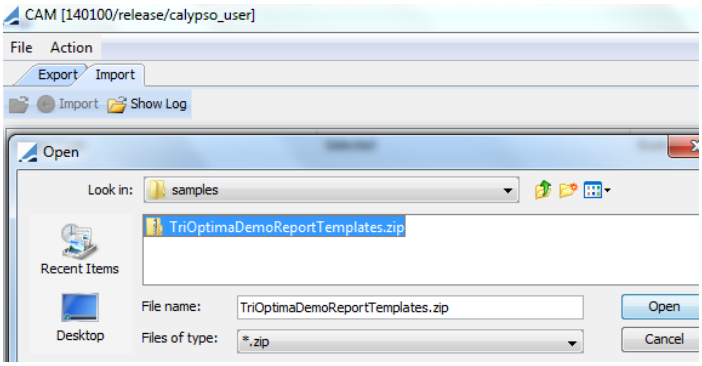
- TriOptima_CRD and TriOptima_IRD trade filters.
- TriOptimaCDS, TriOptimaCDSIndex, TriOptimaCDSIndexTranche, TriOptimaSwap, TriOptimaFRA report templates

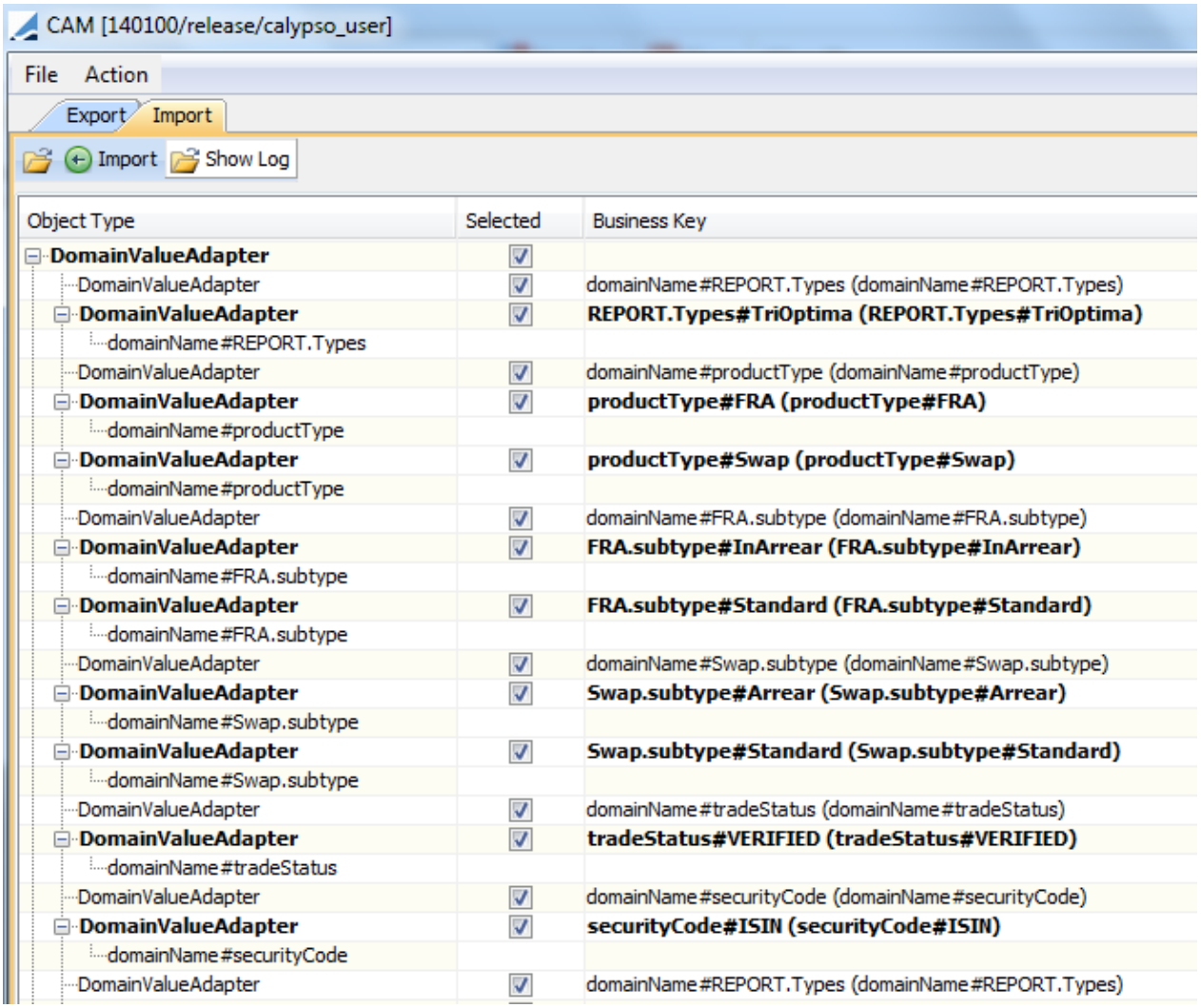
Column definitions included in these templates are listed below.

[Note: For CrossCurrency Swaps, only the Import action is covered by Calypso thus no Template is currently available for this product type.]

To import the templates, start the CAM Application (ensure that the Data Server is running), and select file TrioptimaDemoReportTemplates.zip.

Open and Import

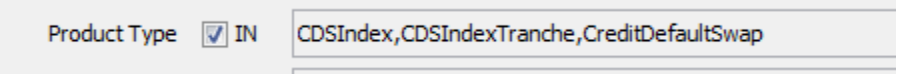




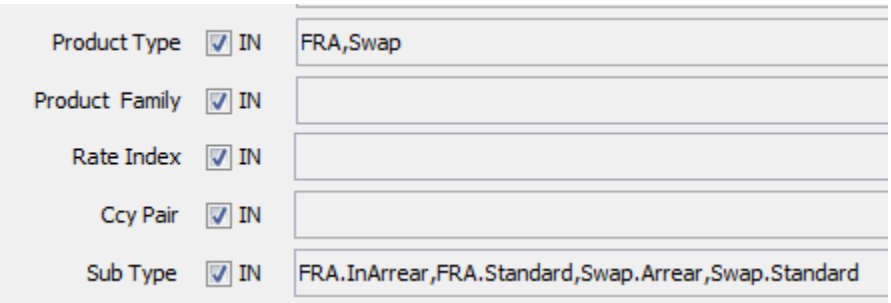
[Note: Once imported, you need to grant users the corresponding access permission on these objects to make them usable by the relevant user groups.]

Please note that for both trade filters (TriOptima_CRD and TriOptima_IRD), filters are based on Product type. Default values are.

For TriOptima_CRD:



For TriOptima_IRD:



Trade Description Files

3.1 Data Mapping

Because you can configure many mapping rules directly on the TriOptima website, data is exported directly from Calypso and the system relies on the TriOptima website to do the mapping of data such as dates, currencies, frequencies, counterparty name, credit entity name, reference obligation code, etc.

Here is the list of available translations:

3.2 TriReduce Trade Report

This report is based on Calypso trade browser, with some additional features specific to the TriOptima interface:

- Some additional reporting columns
- Some additional “Delta tolerance” column, retrieved from a sensitivity risk analysis for IRD products.

3.2.1 Delta Tolerance for IRD products

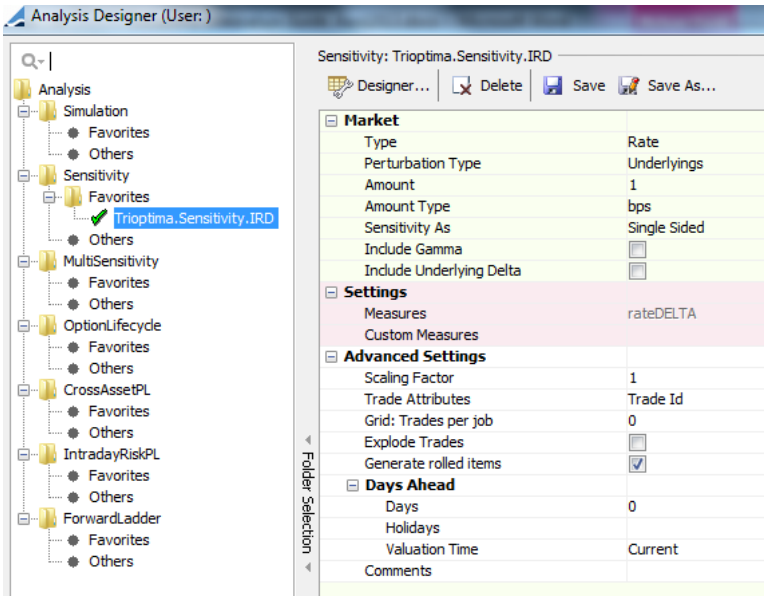
The TriOptima report only supports the Sensitivity report. You have to configure a Sensitivity report named Trioptima.

For more information relative to Sensitivity reports, refer to Calypso Sensitivity documentation.

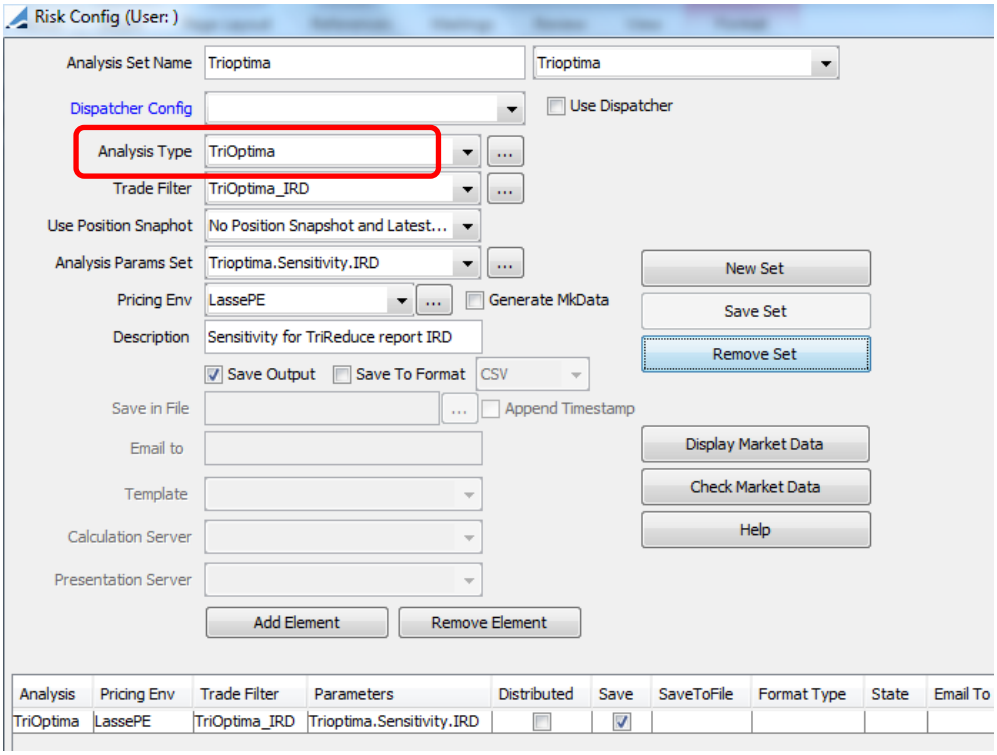
TriOptima Report Setup

Step 1 – Define Sensitivity report parameters.

Example:



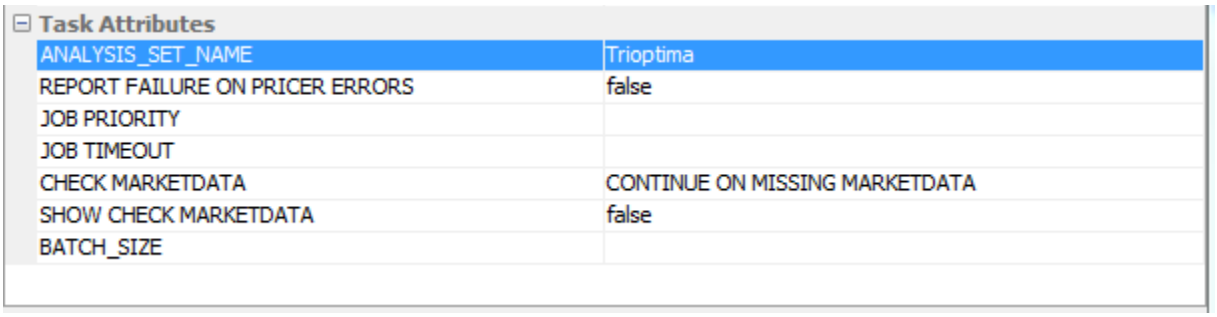
Step 2 – Configure an analysis set for the TriOptima report.



- Analysis set name: Any name
- Analysis Type: TriOptima
- Trade Filter: Trade filter to run the TriOptima report
- Analysis Params Set: Sensitivity report parameters previously defined
- Pricing Env: same that will be used for ST RISK_ANALYSIS, Trioptima Report
- Save Ouput: Checked.

Scheduled Task RISK_ANALYSIS Setup

Configure and run the scheduled task RISK_ANALYSIS to get the delta tolerance for swap TriOptima report.



Common Attributes: Select the same trade filter and pricing environment as in the analysis set previously defined.

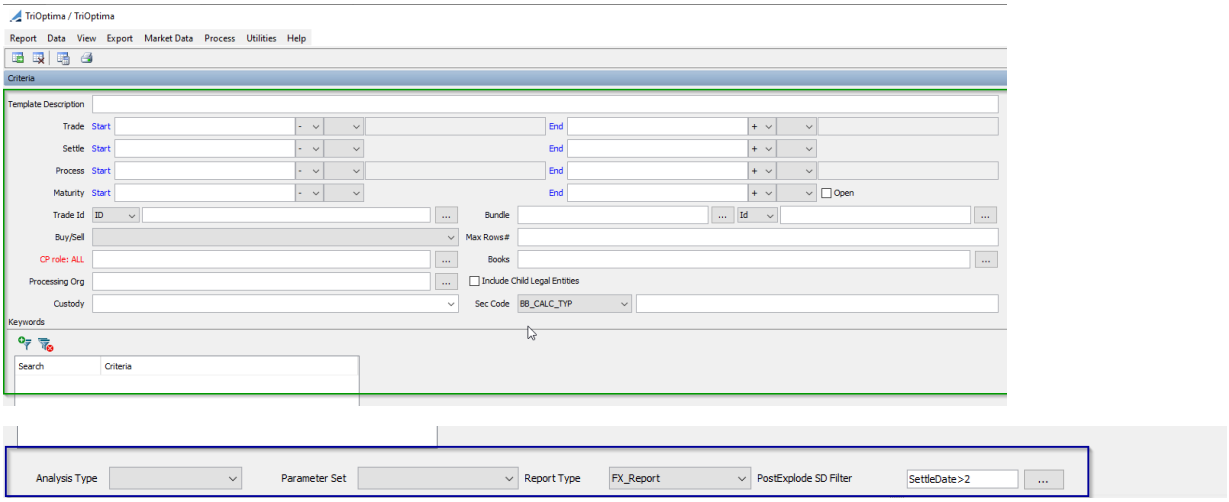
Task Attributes:

- ANALYSIS_SET_NAME: Select the analysis set previously created
- REPORT FAILURE ON PRICER ERRORS: false or true
- JOB PRIORITY: not required
- JOB TIMEOUT: not required
- CHECK MARKETDATA: Select “CONTINUE ON MISSING MARKET DATA”
- SHOW CHECK MARKETDATA: false or true
- BATCH_SIZE: not required

3.2.2 TriOptima Report

You can bring up the TriOptima report using menu action `reporting.ReportWindow$TriOptima`.

Prior to loading Templates, choose **Data > Explode Trade** to explode FX trades.



Load, the templates you had previously imported, and fill in the required information:

The upper panel is identical to the Trade Browser panel and allows same filtering criteria.

The lower panel gives you access to additional filter options which will be applicable to each individual leg.

User must make sure that upper panel filter is aligned with the lower panel filter (ex. To be able to include the far leg of a swap, the upper panel criteria cannot filter out FxSwaps).

The lower panel gives access to the Risk Analysis parameter set to be used if required. Note that it’s only required when “Delta tolerance” columns need to be included in the file sent to TriOptima. Credit Derivatives products report do not require a scenario. The saved scenario output is retrieved using:

- Trade filter name: TriOptima report and Risk Analysis must use the same trade filter
- Pricing environment: TriOptima report and Risk Analysis must use the same pricing environment

- Valuation date: If several Analysis outputs are saved for a given value date, the most recent is used.
- Report Type: Determines type of checks and balances executed when exporting the report through the option “Export TriOptima” from the Process Menu.
- PostExplode SD Filter: SD Filter that will be applicable to all loaded trades after being Exploded allowing to filter out individual legs of a multileg trade like FxSwaps.

[NOTE: Two new keywords *NearLegType* and *FarLegType* were added to be used as criteria in the PostExplode SD Filter. They are only populated on the TriOptima Report (or Trade Browser) when the “Explode Trade” option is checked]

The possible values on these keywords are FX or FXForward.

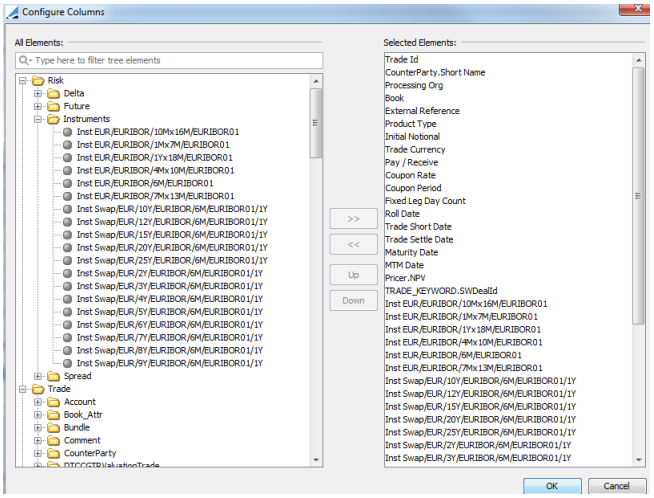
Below an example of possible PostExplode SD Filter (excludes all legs on a multiple leg trade that are spot)

TriOptima Columns

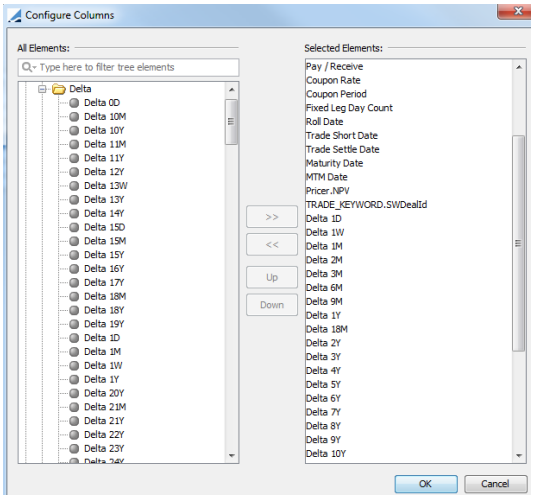
The “configure columns” window provides standard trade column in addition to TriOptima specific ones and all delta tenors. Not that only tenors calculated in the attached scenario will be displayed in the report.

Select columns: It depends on data you want to provide (specially for rates, instrument names or delta bucket).

- For Instrument Names:

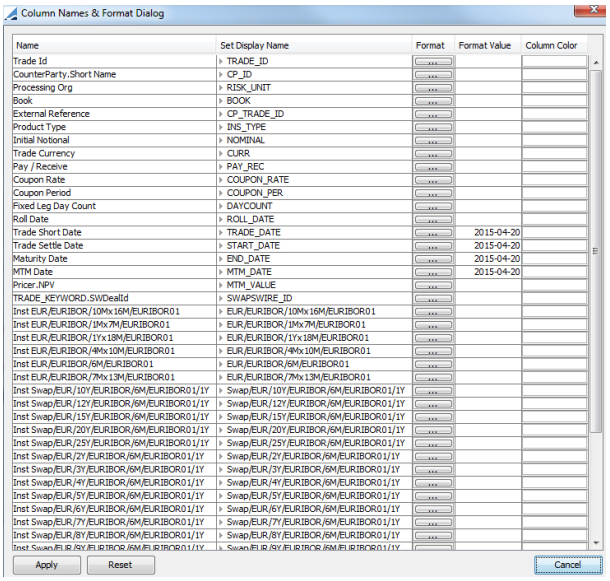


- For Delta:



Rename Columns: Rename to match expected Trioptima values.

- For Instrument Names:



Column TriOptima Process Issue should also be added to the Template to track lines of the report not compliant with TriOptima. Refer to section “Export TriOptima” for further details on this column.

Below is the list of columns than can be used in files sent to TriOptima. The “description” column indicates which column of the report is used in proposed default templates.

Name	Description	Mandatory Optional	Rename
TRADE_ID	Client’s unique trade ID – TriOptima_Trade_Id If you use another field to populate the TRADE_ID column, then take care of modifying the “Trade	Mandatory	Yes

Name	Description	Mandatory Optional	Rename
	Identification" parameter of the scheduled task TriReduceImport accordingly		
TRADE_ID_2	Client's secondary trade ID	Optional	Yes
INS_TYPE	Product type FXForward = FX_FORWARD FXSwap = FX_SWAP FXNDF = NDF	Mandatory	No
PARTY_BIC	The Swift BIC code for the party	Mandatory	No
CP_ID	Client's name of counterparty – Counterparty.Short Name	Mandatory	Yes
CP_BIC	The Swift BIC code for the counterparty	Optional	No
CP_TRADE_ID	The trade id used by the counterparty – External Reference	Optional	Yes
BOOK	The internal book – Book	Mandatory	Yes
RISK_UNIT	The internal risk unit (you can have multiple books under 1 risk unit) – Processing Org	Mandatory	Yes
TRADE_DATE	When the deal was made – Trade Date	Mandatory	Yes
NOMINAL	Swap, FRA, Index Tranche, CDS Initial Notional	Mandatory	Yes
CURR	Swap, FRA, Index Tranche, CDS Trade Currency	Mandatory	Yes
BUY_SELL	Index Tranche, CDS Trade direction Buy/Sell	Mandatory	Yes
PAY_REC	Swap, FRA Trade direction – "Payer" if the PO pays the fixed rate, "Receiver" otherwise	Mandatory	Yes
COUPON_RATE	Swap, FRA, Index Tranche, CDS Coupon rate – Fixed rate, given as a percentage	Mandatory	Yes

Name	Description	Mandatory Optional	Rename
	Example: 5.0 if fixed rate is 5%		
COUPON_PER	Swap, Index Tranche, CDS Fixed rate payment frequency	Mandatory	Yes
DAYCOUNT	Swap, FRA, Index Tranche, CDS Fixed leg daycount	Mandatory	Yes
CREDIT_ENTITY	Index Tranche This field is built from the CDSIndex definition basket name where the version number is removed Examples: basket name “Dow Jones CDX.NA.IG.4-V1” becomes “Dow Jones CDX.NA.IG.4” basket name “iTraxx Europe Crossover Series 7 Version 1” becomes “iTraxx Europe Crossover Series 7” and the same basket for the 0-3% tranche will be “iTraxx Europe Crossover Series 7 0.00-3.00%” CDS Trade report “Issuer Full Name” column or any issuer attribute	Mandatory	Yes
ROLL_DATE	Swap, Index Tranche, CDS Fixed leg roll day	Mandatory	Yes
PREMIUM	Index Tranche, CDS Trade report “Fee.UPFRONT.Amount” column Alternatively, should be defined as “Fee.<upfront fee name>.Amount” where <upfront fee name> is the upfront fee type defined in your system	Optional	Yes
START DATE	Swap, FRA, Index Tranche, CDS Trade Settle Date	Mandatory	Yes
END_DATE	Swap, FRA, Index Tranche, CDS Maturity Date FXForward, FXSwap, FXNDF When the money exchange takes place	Mandatory	Yes

Name	Description	Mandatory Optional	Rename
	Trade Settle Date		
ASSIGNMENT_ROLE	Index Tranche, CDS Value is: “Constant Party” when trade keyword Novation_Transfer_Role = “Counterparty” “Assignor” when Novation_Transfer_Role = “ProcessingOrg” “Assignee” when trade keyword StepIn_Transferor is set Empty otherwise	Optional	Yes
ASSIGNMENT_DATE	Index Tranche, CDS Only set when ASSIGNMENT_ROLE is not empty Value is the “TerminationDate” trade keyword value	Optional	Yes
STEP_OUY_PARTY	Index Tranche, CDS Trade report “TRADE_KEYWORD.Novation_Transferor” column	Optional	Yes
DOCS_EXECUTED	Index Tranche, CDS “Yes” if legal agreement signed, “No” otherwise	Mandatory	Yes
MTM_DATE	Swap, FRA, Index Tranche, CDS Report valuation date	Mandatory	Yes
MTM_VALUE	Swap, FRA, Index Tranche, CDS Trade report “Pricer.NPV” column	Mandatory	Yes
DTCC_ID	Index Tranche, CDS Trade report “TRADE_KEYWORD.DTCCTradeId” column	Optional	Yes
SWAPSWIRE_ID	Swap, FRA, Index Tranche, CDS Trade report “TRADE_KEYWORD.SWDealId” column	Optional	Yes
NEXT_PAY_DATE	Swap, FRA, Index Tranche, CDS Next Payment Date	Mandatory	Yes
SENIORITY	CDS Trade report “Seniority”	Optional	Yes

Name	Description	Mandatory Optional	Rename
REF_OB	CDS Trade report “Underlying.Product Code.ISIN” column Alternatively, any Product Code can be used	Optional	Yes
RESTRUCTURING	CDS Give the restructuring type, if any, based on the following mapping: R – “Restructuring” MR – “Mod Restructuring” MMR – “Mod Mod Restructuring” “None” otherwise	Optional	Yes
ISDA_DEF	CDS “ISDA_” + value of trade’s ISDA definition “None” if no ISDA definition	Mandatory	Yes
JUMP_TO_DEFAULT	CDS Trade report “Pricer.DEFAULT_EXPOSURE” column	Optional	Yes
DELTA_<tenor> Or Instrument Name (any available Instrument names)	Swap, FRA, CDS Retrieved from Scenario User can add as many columns as available tenors / Instrument names in scenario	Optional	Yes
FLOAT_RATE_INDEX	Swap, FRA Floating Leg Index	Mandatory	Yes
FLOAT_RATE_INDEX_PER	Swap, FRA Floating Leg Index Tenor	Mandatory	Yes
FLOAT_RATE_PAY_PER	Swap Floating leg payment frequency	Mandatory	Yes
FLOAT_RATE_FIXING_PER	Swap Floating leg fixing frequency	Mandatory	Yes
FLOAT_SPREAD	Swap	Mandatory	Yes

<table>
<tr><th>Name</th><th>Description</th><th>Mandatory
Optional</th><th>Rename</th></tr>
<tr><td></td><td>Floating leg spread, given as a percentage
Example: 0.015 if spread is 15bp</td><td></td><td></td></tr>
<tr><td>FLOAT_RATE</td><td>Swap, FRA
Last fixing’s rate, given as a percentage
Example: 2.73 if last fixing rate is 2.73%</td><td>Mandatory</td><td>Yes</td></tr>
<tr><td>NEXT_FIXING_DATE</td><td>Swap
Date of the floating leg next fixing date</td><td>Mandatory</td><td>Yes</td></tr>
<tr><td>NEXT_FLOAT_PAY_DATE</td><td>Swap, FRA
Date of the floating leg next payment date</td><td>Mandatory</td><td>Yes</td></tr>
<tr><td>NEXT_FIX_PAY_DATE</td><td>Swap, FRA
Date of the fix leg next payment date</td><td>Mandatory</td><td>Yes</td></tr>
<tr><td>SW_SINGLESIDED</td><td>Swap, FRA
Trade report “TRADE_KEYWORD.SWSingleSided” column</td><td>Optional</td><td>Yes</td></tr>
<tr><td>FIXING_DATE</td><td>FXNDF
The date of the final fixing</td><td>Mandatory</td><td>No</td></tr>
<tr><td>FIXING_SOURCE</td><td>FXNDF
The source of the fixing prices – Ccy Pair Attribute TriOptima_FIXING_SOURCE
Only the currency pairs against USD with the following currencies are currently supported:
<table>
<tr><th>Currency</th><th>Fixing Source</th></tr>
<tr><td>China, Yuan Renminbi</td><td>SAEC-REUTERS</td></tr>
<tr><td>Indonesia, Rupiah</td><td>JISDOR-REUTERS</td></tr>
<tr><td>India, Rupees</td><td>RBIB-REUTERS</td></tr>
<tr><td>Korea, Won</td><td>KFTC18-REUTERS</td></tr>
<tr><td>Malaysia, Ringgit</td><td>KLREF-REUTERS</td></tr>
<tr><td>Philippines, Peso</td><td>PDSPESO-REUTERS</td></tr>
<tr><td>Taiwan, New Dollars</td><td>TAIFX1-REUTERS</td></tr>
</table></td><td>Mandatory</td><td>No</td></tr>
<tr><td>PAY_CURR</td><td>FXForward, FXSwap, FXNDF
Currency payed to CP</td><td>Mandatory</td><td>No</td></tr>
<tr><td>RECEIVE_CURR</td><td>FXForward, FXSwap, FXNDF</td><td>Mandatory</td><td>No</td></tr>
</table>

Name	Description	Mandatory Optional	Rename
	Currency received from CP		
PAY_NOTIONAL	FXForward, FXSwap, FXNDF Amount in PAY_CURR payed to CP	Mandatory	No
RECEIVE_NOTIONAL	FXForward, FXSwap, FXNDF Amount (in RECEIVE_CURR) received from CP	Mandatory	No
REPORTING_ID	FXForward, FXSwap, FXNDF UTI or USI When Risk Exploded Leg = Near or Blank If trade_keyword.UTI/UTITradeId is not Null set REPORTING_ID = UTI/UTITradeId Else If trade_keyword.USI/USITradeId is not Null set REPORTING_ID = USI/USITradeId When Risk Exploded Leg = Far If trade_keyword.UTI/UTITradeId is not Null set REPORTING_ID = UTI/UTITradeId Else If trade_keyword. UniqueTradeId-FarLeg is not Null set REPORTING_ID = USI/USITradeId	Optional	No
CLS_MATCH_ID	FXForward, FXSwap, FXNDF CLS trades – Unique identifier in CLS – Trade keyword CLS_MATCH_ID	Mandatory	No
CLS_TRADE_ID	FXForward, FXSwap, FXNDF CLS unique ID per each leg	Optional	No

Process Menu Item "Export TriOptima"

The goal of this menu item is to perform a logical export of the Report by performing the below checks before exporting.

Every check failed update the column "TriOptima Process Issues" for the failed trade/line with the description of the Process Issue. Lines with Process Issues will be excluded from the export when done via the new option.

Column "TriOptima Process Issues" if present in the report at the screen will always be excluded from the Exported file using this new Export Option.

Control: INS_TYPE column is blank.

Error message: “INS_TYPE missing for some or all trades”

Control: TRIOPTIMA_TRADE_ID column is blank.

Error message: “TRADE_ID missing for some or all trades”

Control: PARTY_BIC column is blank.

Error message: “PARTY_BIC missing for some or all trades”

Control: FIXING_DATE column is blank for an FXNDF trade.

Error message: “FIXING_DATE missing for some or all NDF trades”

Control: FIXING_SOURCE column is blank if Product Type = NDF or FXNDFSwap.

Error message: “FIXING_SOURCE missing for some or all NDF trades”

Control: CLS_MATCH_ID column is blank if CLS trade.

Error message: “CLS_MATCH_ID missing for some or all CLS trades”

Process Menu Item “Exclude Trade”

Exclude Trade allows user to exclude trades manually.

For Single Leg Trades:

When applied on a selected line set Trade Keyword TriOptimaExclude to True

The action Update should be available for the trade current status

For Multiple Leg Trades:

If Trade is exploded on the Report, retrieve the parent trade and set the keywords as follows:

- If selected line is Near leg: set Trade Keyword TriOptimaExclude to True
- If selected line is Far leg: set Trade Keyword TriOptimaExcludeFar to True

The action Update should be available for the trade current status

Trades with the trade keywords TriOptimaExclude or TriOptimaExcludeFar set to True, will be excluded from the Export and TriOptima Process Issue will contain message “Excluded From TriOptima Report”.

Process Menu Item “Include Trade”

For trades with Process Issue “Excluded From TriOptima Report” the Process option ”Include Trade” will set the trade keywords TriOptimaExclude or TriOptimaExcludeFar (if applied to Far leg of MultiLeg Trade) to False.

Process Menu Item “Sent to TriOptima”

If trade is selected when applying Process Option “Sent to TriOptima”.

For Single Leg Trades:

Apply action Sent_TriOptima to the selectedtrade

For Multiple Leg Trades:

Retrieve unexploded trade and apply action SENT_TRIOPTIMA to the unexploded trade

Ex. If Far leg is being flagged as sent, then apply action SENT_TRIOPTIMA to the FxSwap

3.3 Description File Creation

The trade description file can be generated either using the Export\CSV feature of the report window or using the REPORT scheduled task that allow exporting any report template.

Task Attributes	
REPORT TYPE	TriOptima
REPORT FILE NAME	c:/temp/trioptima/export/exportCRD
REPORT FORMAT	csv
REPORT TEMPLATE NAME	
REPORT OUTPUT TEMPLATE	
SEND REPORT BY EMAIL TO	
TIMESTAMP FILENAME	
TIMESTAMP FORMAT	
GENERATE PDF HEADER?	
UNDO	

Import the TriOptima Proposal File

The TRI_REDUCE_IMPORT scheduled Task imports the TriOptima proposal file and enables to depending on product type (refer to table in the Introduction):

- Terminate fully or partially
- Create both external and internal new trades.
- Create action uses the Data Uploader.

4.1 Configuration

4.1.1 Data Uploader

The TriOptima module uses the Data Uploader to transform data sent by DTCC into new trades in Calypso.

4.1.2 TRIOPTIMA_REDUCE Message Workflow

The message WF is required only when you select in the Import Mode "Create Messages". Refer to section "TRI_REDUCE_IMPORT Scheduled Task". It concerns ONLY Credit Products.

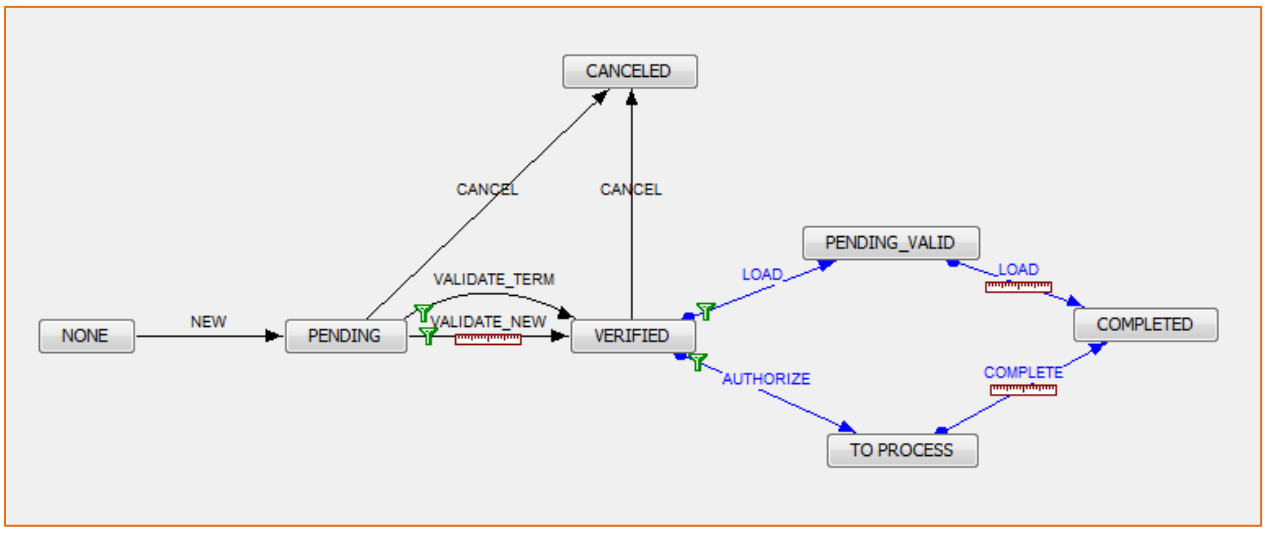
Import the default workflow using "TriReduceMsgWorkflows.wf".

This gives the standard workflow for TRIOPTIMA BO Messages and creates the required static data filters.

EventClass: PSEventMessage

Subtype:TRIOPTIMA_REDUCE

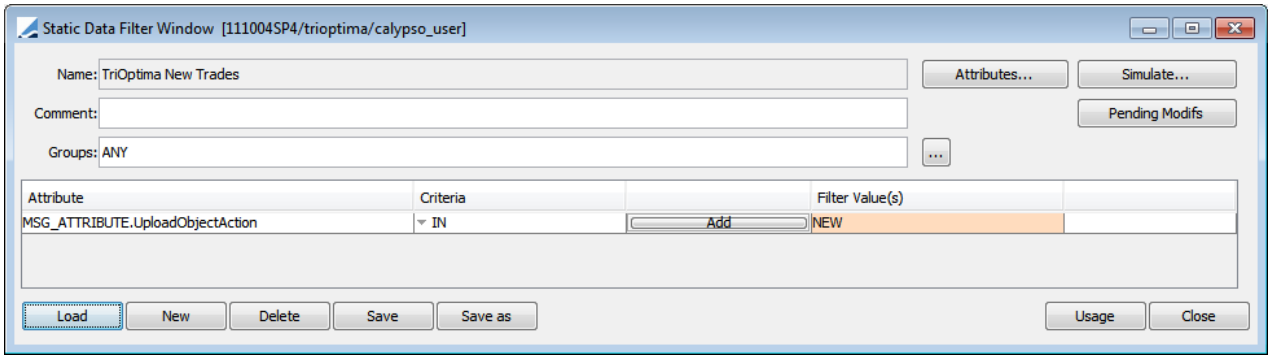
Product: ALL



The workflow rules and static data filters are automatically created.

The static data filters are used to identify trades to be created and trades to be terminated so that they can be processed separately.

For trades to be created, the SD Filter “TriOptima New Trades” is defined as follows:



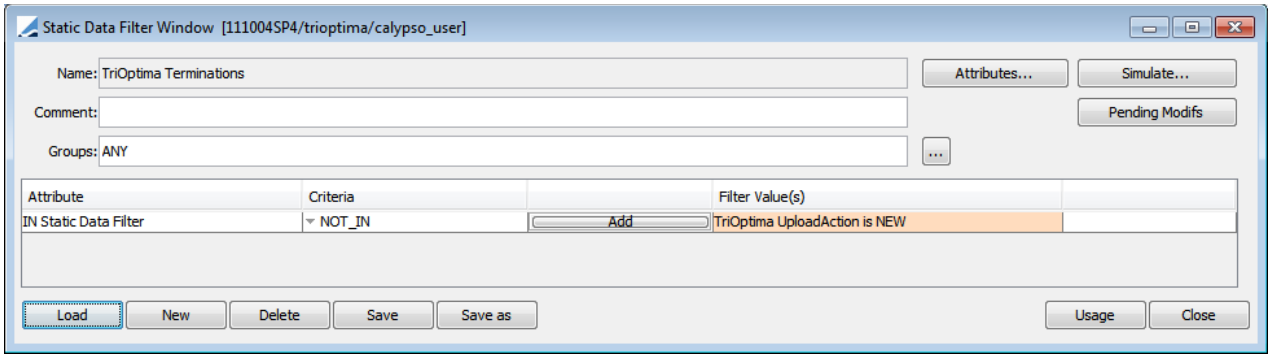
On Action “VALIDATE_NEW”, the following rules are applied:

- **CheckLink** – Checks whether the message that is linked to his message is processed succesfully.
- **Validate** – Validates that is a Calypso Document Plain Old Java Object (POJO).

On Action “LOAD”: the following rules are applied:

- **CheckLink**
- **Loader**: Loads a Calypso Document POJO.

For trades to be terminated, the SD Filter “TriOptima Terminations” is defined as follows:



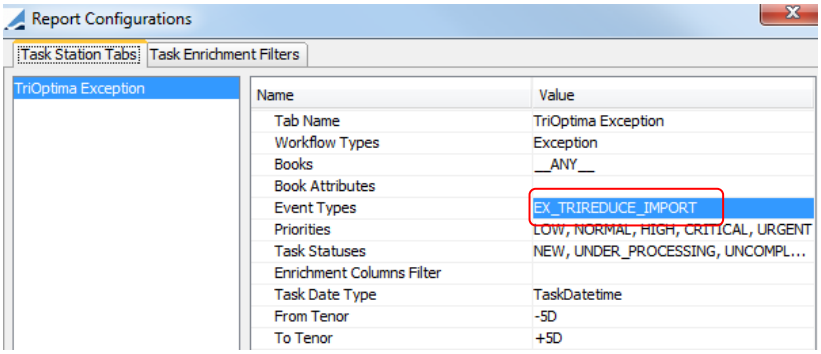
On Action”COMPLETE”, the following rule is applied:

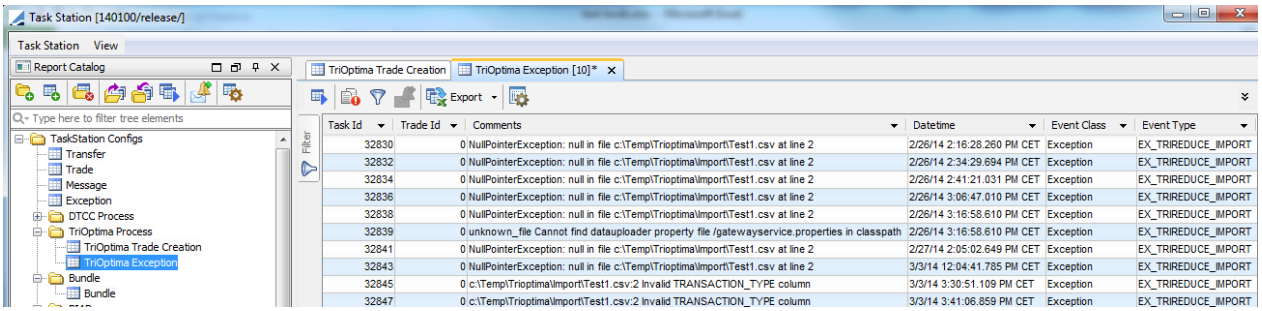
- **TrioptimaReduce** applies terminatin action on corresponding trades

4.1.3 Task Station Monitoring

EXCEPTIONS

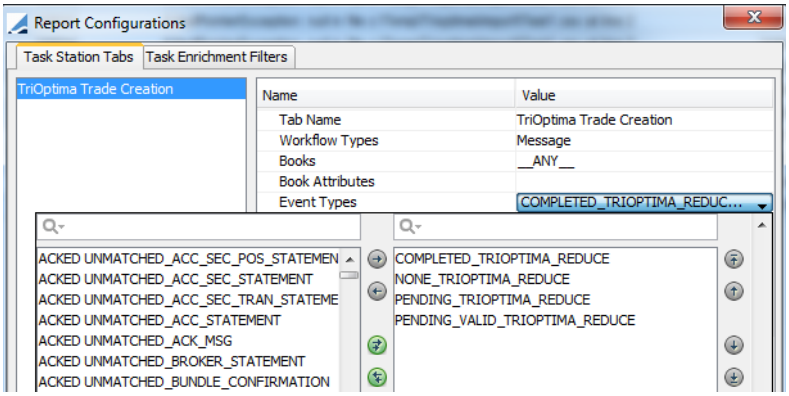
Add a TriOptima Exceptions Tab and select the event type “EX_TRIREDUCE_IMPORT”.



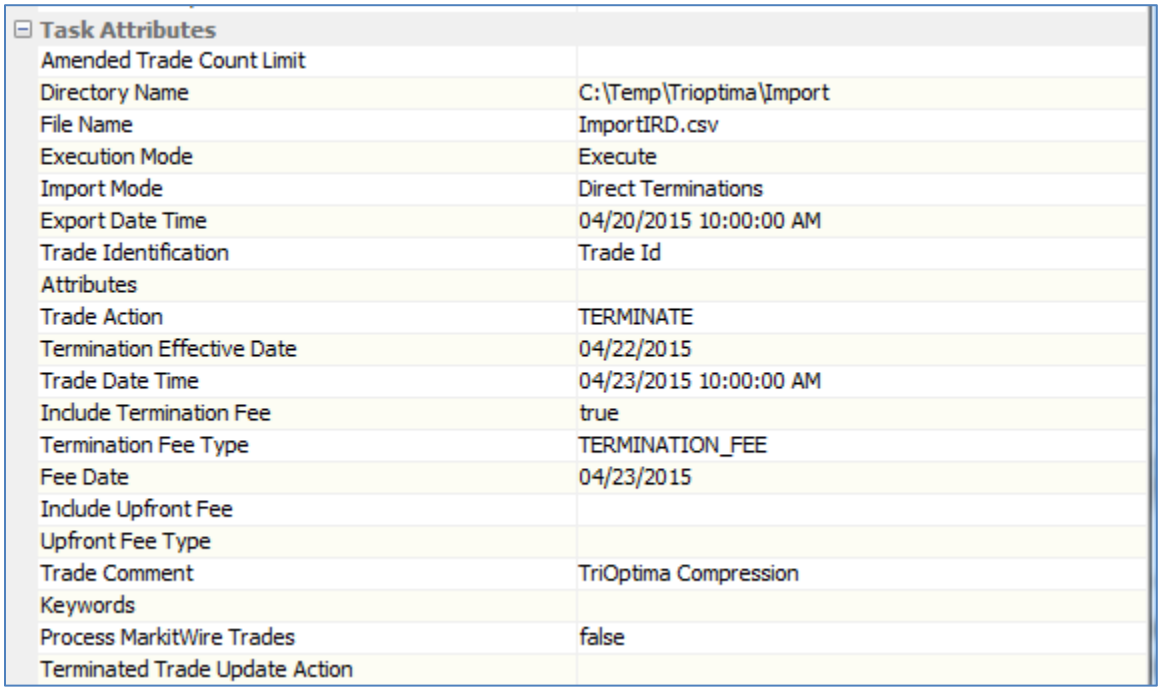


MESSAGES

Select the event types you want to monitor.



4.2 TRI_REDUCE_IMPORT Scheduled Task



Task Attributes	
Amended Trade Count Limit	
Directory Name	C:\Temp\Trioptima\Import
File Name	ImportIRD.csv
Execution Mode	Execute
Import Mode	Direct Terminations
Export Date Time	04/20/2015 10:00:00 AM
Trade Identification	Trade Id
Attributes	
Trade Action	TERMINATE
Termination Effective Date	04/22/2015
Trade Date Time	04/23/2015 10:00:00 AM
Include Termination Fee	true
Termination Fee Type	TERMINATION_FEE
Fee Date	04/23/2015
Include Upfront Fee	
Upfront Fee Type	
Trade Comment	TriOptima Compression
Keywords	
Process MarkitWire Trades	false
Terminated Trade Update Action	

Task Attributes

Parameter	Possible Values	Parameter
Amended Trade Count Limit	-1 or positive value	The maximal numbers of trades to terminate that fail the pre-check control. -1 means no limit.
Directory Name	Free text	Directory where to get the file that contains TriOptima data about trades to be terminated.
File Name	Free text	Name of the file to be imported. (in csv format) **When this parameter is empty, all the files in the directory (upper) will be imported.**
Execution Mode ONLY if Import Mode is Create Messages	Pre-Check	The "Pre-Check" mode will verify trades to be terminated and global position of TriOptima proposal is correct, as described above.
	Execute	The "Execute" mode will perform the entire process: Pre-Checks, termination of the concerned trades and creation of the external and internal trades.

Parameter	Possible Values	Parameter
Import Mode	Create Messages	The trade will not be terminated at once, the task will create a BOMessage instance for each trade termination entry. This is the processing of this message instance through workflow rule that will terminate the trade. This mod works only for CREDIT products
	Direct Terminations	The trade will be terminated.
	Update MarkitWire Terminations	The MarkitWire trade will be updated by adding the Termination Fee
Export Date Time	Any Date Time	Export Date time when corresponding trades file has been exported to TriOptima. This is used when checking is significant amendment have been performed on existing trades between now and the export time. Refer to controls on trades to be terminated section above. Format should be: mm/dd/yyyy hh:mm:ss AM (or PM) Ex: 06/17/2011 10:00:00 AM Date and time are parsed in the scheduled task time zone.
Trade Identification	Trade Id Internal Reference External Reference Or any trade keyword	This parameter is used to define which Calypso field correspond to the TRADE_ID column. This field needs to be the same as the field used in TriOptima report for the TRADE_ID column.
Trade Action	TERMINATE	Termination action to be applied to the trades.
Termination Effective date	Any date	Format should be: mm/dd/yyyy Ex: 06/24/2011
Termination trade date time	Any date time	Format should be: mm/dd/yyyy hh:mm:ss AM (or PM) Ex: 06/25/2011 10:00:00 AM Date and time are parsed in the scheduled task time zone.

Parameter	Possible Values	Parameter
Include termination fee	True / False	Set it to true if you want Calypso to add a termination fee to each trade (MTM_VALUE or CLOSE_OUT_AMT column of the file, when provided).
Termination fee type	Any fee type	Only available when "Include termination fee" is set to true and mandatory in this case. Choose the fee type of the termination fee. Typically, this will not be "TERMINATION_FEE" as this amount is not to be paid but only taken in account in P&L or accounting.
Fee date	Any date	Only available when "Include termination fee" or "Include Upfront Fee" is set to true and mandatory in this case.
Include Upfront Fee	True / False	Set it to true if you want Calypso to add an Upfront Fee to each "NEW" trade (MTM_VALUE or CLOSE_OUT_AMT column of the file, when provided).
Upfront Fee Type	UPFRONT_FEE	
Trade comment	Free text	Text posted here will overwrite trade comment when terminating the trade. Leave empty if you don't want trade comment to be updated.
Keywords	Any trade keywords names and values, or empty	Choose which keywords you want TriReduce_Import scheduled task to add or update when terminating the trade. The syntax is: Keyword1=Value1, Keyword2=Value2, Keyword3=Value3... Leave empty if you don't want to use this option.
Process MarkitWire Trades	True / False	True if you want to include MarkitWire Trades Trades are MarkitWire if in Trioptima proposal file, they have an id in SWAPSWIRE_ID column.
Terminated Trade Update Action	Action relative to your Trade Workflow	Ex: transition TERMINATED – UPDATE – TERMINATED Value = UPDATE

[NOTE: Adding a keyword can be a convenient way of managing termination confirmation in case you don't want to send termination confirmation one by one when trade is terminated during a TriReduce session.]

Trioptima monitors CDS ABS Index as product type "CreditDefaultSwapIndex". We rely on CREDIT_ENTITY to recognize if the product type in Calypso has to be CDSABSIndex. If CREDIT_TYPE starts by CMBX or ABX, then in Calypso, product type = CDSABSIndex.

4.2.1 Behavior of the Scheduled Task

The behavior of the scheduled task depends on the import mode:

- Direct Termination: in this mode the task will terminate the full termination directly and skip, for Credit products, trade and internal trade creations.
- Create Messages: in this mode, ONLY Credit products are supported, the task will create BOMessage instances for any entry of the file. It will be the choice of the user to process these messages in STP mode or to introduce a manual check in the workflow processing of these messages.

The rest of this section describes the behavior of the Create Messages mode only.

For the files given in parameter, the task will proceed according to the following steps:

- Parse all entries and reject invalid ones,
- Perform on all the entries a functional pre-check described in next section.
- Skip silently any entries which have already been processed in a previous run (except for a log message)
- Record accepted entries in memory into 3 separate groups
  - Trade termination entries (transaction type FullTermination in the file)
  - External trade creation entries (transaction type Trade in the file)
  - Internal trade creation entries (transaction type InternalTrade in the file)
- Process the accepted entries in the following order:
  - the trade terminations first,
  - then the external trade creations,
  - and finally the internal trade creations.

4.2.2 Processing Trade Termination Entries

Create Messages Import Mode only.

Before processing the termination on trades, controls are performed on concerned trades.

The task generates a BOMessage instance for each entry with the content of the entry. This message will be processed later through a workflow rule either in STP either manually after a control. This process will actually terminate the message.

- Termination trade date and termination effective date are given by the parameters of the scheduled task.

- If “Include termination fee” is true, then the fee is added to the trade with:
  - fee type: given as parameter
  - fee amount: MTM_VALUE column
  - fee currency: CURR column
  - fee LE: trade counterparty
  - fee date: given as parameter
  - fee known date: termination trade date
  - fee start date and end date: fee date
- Trade comment is modified if a new comment is given as parameter
- Trade keywords are added or updated if given as parameter

[NOTE: If for any reason a trade cannot be terminated, a task is created and displayed in the task station. For example, this will occur when the action TERMINATE is not possible because the related trade is not in VERIFIED status.]

For Cross Currency Swap the process involves more variables and Termination is applied as follows:

- Termination Reason:

  If NEW_PAY/REC_NOMINAL < PAY/REC_NOMINAL or = 0 set Termination reason to “BoughtBack”

  If NEW_PAY/REC_NOMINAL > PAY/REC_NOMINAL set Termination reason to “NotionalIncrease”
- Termination Action: parameter Trade Action
- Trade Date: parameter Trade Date Time
- Effective Date: parameter Termination Effective Date
- If “Include termination fee” is true, then a fee per le is added to the trade with:

  Termination_Fee (Pay Leg):
  - fee type: given as parameter
  - fee amount: PAY_CLOSE_OUT_AMOUNT column
  - fee currency: PAY_CLOSE_OUT_AMOUNT_CURR column
  - fee LE: trade counterparty
  - Pay/Rec:

    Rec – If PAY_CLOSE_OUT_AMOUNT >= 0

    Pay – If PAY_CLOSE_OUT_AMOUNT < 0
  - fee date: given as parameter
  - fee known date: termination trade date
  - fee start date and end date: fee date

  Termination_Fee (Receiving Leg):

- fee type: given as parameter
- fee amount: REC_CLOSE_OUT_AMOUNT column
- fee currency: REC_CLOSE_OUT_AMOUNT_CURR column
- fee LE: trade counterparty
- Pay/Rec:

  Rec – If REC_CLOSE_OUT_AMOUNT >= 0

  Pay – If REC_CLOSE_OUT_AMOUNT < 0
- fee date: given as parameter
- fee known date: termination trade date
- fee start date and end date: fee date

[NOTE: Calypso does not control the data in the file. For the termination process to run smoothly, the fields PAY_NOMINAL and REC_NOMINAL and its respective currency should match the data stored in Calypso for the Trade Id being processed. Failing to do so, will result in incorrect Termination that will require manual actions.]

4.2.3 Processing External Trade Creation (only for Credit Products)

Any entry which will not match a terminated trade is rejected and produces an exception task displayed in the task station.

The Scheduled task will then check the entry values and translate them into their match in the calypso client referential. Any failure to do so will end into a task exception displayed in the task station.

For instance, TriOptima does not name the counterparty exactly as the customer does. Relating the counterparty in the TriOptima referential to the counterparty in the calypso client referential is the job of a Mapping service that each calypso client may customize.

For each remaining entry, the task generates a trade creation description in the XML format used by the data uploader and provides this XML description to the data uploader. At this level, the task adds trade keywords that can be extended by the user.

Starting from the provided XML description, the data uploader generates a BOMessage instance with an advice document describing the trade to create.

According to the preference of the customer, this message can be processed in STP or by manually applying the workflow transition that bears the data uploader Loader workflow rule to create the new trade.

Whenever the Loader rule fails to create the trade, it generates an exception task that will be displayed in the task station.

4.2.4 Processing Internal Trade Creation (only for Credit Products)

An internal trade creation entry matches 2 entries of the file, one for the trade and one for the mirror trade. The trade and its mirror are created in one step by the data uploader.

Any entries which do not match a terminated trade will be rejected and will produce an exception task in the task station.

The task will then check the entry columns and translate them into their match in the calypso client referential. Any failure to do so will end into a task exception displayed in the task station.

For each remaining entry, the task generates a trade creation description in the XML format used by the data uploader, and provides this XML description to the data uploader. At this level, the task adds trade keywords that can be extended by the user.

Starting from the provided XML description, the data uploader generates a BOMessage instance with an advice document describing the trade to create and its mirror.

According to the preference of the customer, this message can be processed in STP or by manually applying the workflow transition that bears the data uploader Loader workflow rule to create the new trade and its mirror.

Whenever the Loader rule fails to create the trade and its mirror, it generates an exception task that will be displayed in the task station.

4.2.5 Functional Pre-check (only for Credit Products)

This functional pre-check will be performed prior to any process by the Scheduled Task. You can also limit the scheduled task to a pure pre-check by selecting the value **`Pre-Check`** for the **`Execution Mode`** attribute.

This pre-check performs three subtasks:

- A check that the TriOptima proposal does not affect the current position
- A control on trades to terminate
- A control on the trade creation over CDS Indexes

4.2.6 Current Position Check

This subtask checks that for each book (TriOptima column BOOK), issuer or index (Trioptima column RED_ID) and maturity date (TriOptima column END_DATE), there is no impact on the global nominal and global nominal * spread values.

So for each combination of BOOK/RED_ID/END_DATE, the subtasks checks that:

- Sum(Nominal) for terminated trades = Sum(Nominal) for created trades

The Nominal is the Trioptima column NET_NOTIONAL_IMPACT

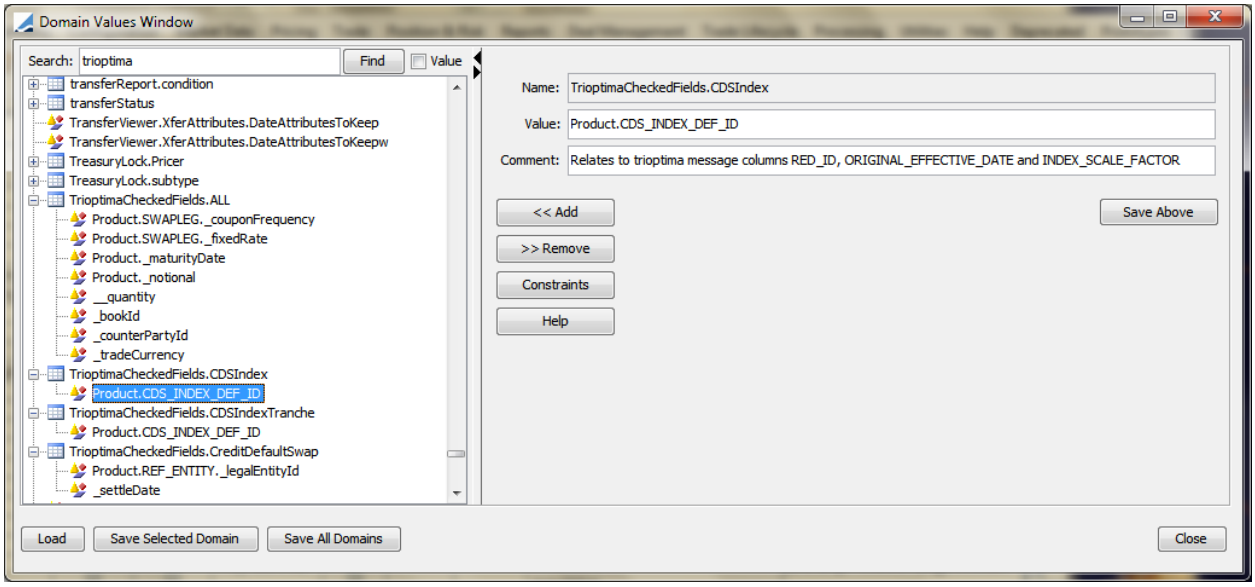
Whenever a check fails for one of the BOOK/RED_ID/END_DATE combination, the process stops and an Exception Task is generated and displayed in the Task Station.

4.2.7 Control on trades to be terminated

This subtask checks that the trades to be terminated have not been substantially amended since the export date made to TriOptima.

For that purpose, a list of fields to be checked has been provided in the following domain values:

Domain Name	Comment
TrioptimaCheckedFields.ALL	List of fields to be checked for all product types
TrioptimaCheckedFields.CreditDefaultSwap	List of fields to be checked specifically for CDS
TrioptimaCheckedFields.CDSIndex	List of fields to be checked specifically for CDS Indexes
TrioptimaCheckedFields.CDSIndexTranche	List of fields to be checked specifically for CDS Index Tranches



For instance, for a CDS trade to terminate, the subtask will check that no field listed in TrioptimaCheckedFields.ALL and in TrioptimaCheckedFields.CreditDefaultSwap has been amended since export date time. If a field has been amended since this date, an exception task will be generated and displayed into the task station.

A check failure will not prevent the execution of the scheduled task as the customer might amend the issue manually. However, you can block the task if too many trades to terminate fail the check by setting the scheduled task attribute **`Amended Trade Count Limit`** to a value different than -1. In that case, the processing will stop whenever the number of trades failing the check exceeds that limit.

Mapping between TriOptima value and Domain Value:

Product type	IncomingTrioptima Message column	Expected value	TriOptimaCheckFields Domain value
All	BOOK	Book Name	_bookId

Product type	IncomingTrioptima Message column	Expected value	TriOptimaCheckFields Domain value
	CURR	Trade Currency	_tradeCurrency
	CP_DTCC_CODE	Trade Counterparty DTCC_LE_ID attribute value	_counterPartyId
	COUPON_PERIOD	Payment frequency	Product.SWAPLEG._couponFrequency
	END_DATE	Trade Maturity Date	Product._maturityDate
	BUY_SELL	BuySell	__quantity
	NOMINAL	Trade Notional	Product.notional
CDS Index	RED_ID	Trade CDS Index Definition RED security code value	Product.CDS_INDEX_DEF_ID
	ORIGINAL_EFFECTIVE_DATE	CDS Index definition start date	
	COUPON_RATE	Trade Premium / 100 for CDSIndex	
	INDEX_SCALE_FACTOR	Trade CDS Index Definition Current factor	
CDS Index Tranche	ORIGINAL_EFFECTIVE_DATE	CDS Index definition start date	Product.CDS_INDEX_DEF_ID
	RED_ID	CDS Index definition RED security code value	
	ATTACHMENT_POINT	Trade original tranche attachment point	

Product type	IncomingTrioptima Message column	Expected value	TriOptimaCheckFields Domain value
CreditDefaultSwap	DETACHMENT_POINT	Trade original tranche detachment point	
	RED_ID First 6 characters	Issuer RED_PAIR attribute value	Product.REF_ENTITY._LegalEntityId
	COUPON_RATE	Premium for CreditDefaultSwap	Product.SWAPLEG._fixedRate
	ORIGINAL_EFFECTIVE_DATE	Start date	_settleDate

FX Compression

TriOptima offers a compression Service for FX Forwards, including NDFs and FX Swaps.

TriOptima proposes a few cycles to compress open trades reducing exposures and thus credit risk maintaining same hedging strategy.

In a nutshell there are 3 steps for the compression to proceed:

- Process starts by sending list of trades (FX Trades File) to be included in next compression cycle
- TriOptima will then send back a proposal (called an Unwind Proposal) with list of trades to be terminated and new trades to be created (FX rate of new trades will be calculated to guarantee PnL is maintained – FX Rates can be out of bounds).
- Each participant will analyse the proposal and if in agreement send an acceptance confirmation to TriOptima (for the moment manual fax confirmation – confirmation messages out of scope). Only when all participants accept, the unwind proposal can be processed (if at least one participant refuses, unwind proposal should be cancelled).

Termination implies cancellation of all future Transfers and generation of Accounting to cancel Contingent Postings (remove trades from Off Balance Sheet accounts).

Valuation Postings should not be impacted by this process as reversal of previous day valuation will materialize the new value of the trade which is zero (as reversal is not compensated by new valuation nor a termination fee, there will be a loss in Accounting representing the drop from previous day valuation to zero).

New Trades should be done with existing Counterparties and FX Rate should compensate the loss described in previous paragraph. FX Rates can be out of bounds when compared to current market rates.

For each termination / replacement trade in the Unwind Proposal, TriOptima will include TriOptima's CP identifier, the CP identifier as submitted by Calypso, TriOptima's identifier for CP BIC, as well as CP BIC submitted by Calypso. So there will be at least 1 field that exactly matches the CP_ID value in Calypso trade file.

There are 2 cycle types: CLS and non-CLS

- CLS will only include CLS eligible trades and requires CLS_MATCH_ID to be included in the FX Trades File.
- Non-CLS can also include NDFs. NDFs require additional information: FIXING_DATE and FIXING_SOURCE.

There can also be Internal Compression Files.

These files will compress internal trades belonging to different books but under same Risk Unit. The goal is to manage risk globally instead of managing it at the book level.

The Internal Unwind proposal will also include trades to be terminated and new trades to be created. The difference with regards to the External Unwind proposal is that new trades will be duplicated to reflect the view from each book

5.1 Domain Values

All domain values are updated by the schema data when you run Execute SQL.

5.2 Scheduled Task TRI_REDUCE_FX_IMPORT

5.2.1 Scheduled Task Attributes

The scheduled task TRI_REDUCE_FX_IMPORT is used to import the Unwind_Proposal File from TriOptima and create BO messages.

Specific Task Attributes:

- File Name – Name of the File to be imported (without extension). Expected format is csv.
- Date Concatenation – Select true or false.
  - If **false** – Look for the file with exact name in Attribute "File Name"
  - If **true** – Look for the file with name in Attribute "File Name" concatenated with Valuation Date in format yyyyMMDD

  (ex. File Name = test.csv If Date Concatenation = True then look for test20180801.csv if launching the task with Valuation date 01/08/18)
- Directory Name – Name of the Directory where the file to import should be stored.
- File Rename – Select true or false. Set to true to rename the new file so that you can keep a copy of the file, or false otherwise. Default value is false
- ExecutionReportDirectory Name of the Directory where the log should be stored **(**default value = Directory Name**)**
- ExecutionReport – Select true or false.
  - If **false** – Do not generate log.
  - If **true** – Lists Message Id created per each TRIOPTIMA_MATCH_KEY in the file.

    If Message Id could not be created, an error message is set on Comment column.

    Comment column should only be filled in case of process issue (i.e. when Message Id in log is blank)

    Below header of the log file:

TRIOPTIMA_MATCH_KEY	EVENT_PROCESSING_ID	Message Id	Comment

5.2.2 BO Message

A BO message is created per line of the Unwind File with following characteristics:

ADDRESS_METHOD => TRI_REDUCE

FORMAT_TYPE => CSV

GATEWAY => TRI_REDUCE

I_TRADE_CLASS =>0 (Trade)

MESSAGE_TYPE => FX_TRI_OPTIMA_REDUCE

The following fields are parsed for each BO Message and stored as Message Attributes:

Calypso Field	Unwind File Field
MESSAGE_ID	Calypso message identifier (no enhancement)
TriOptimaUniqueId	TRIOPTIMA_MATCH_KEY (unique TriOptima reference per line)
TriOptimaTradeId	TRADE_ID
TriOptimaTransactionType	TRANSACTION_TYPE
CompressionDate	Date and Time the BO Message is created (i.e Integration Date&Time)
TriOptimaEventId	EVENT_PROCESSING_ID
TriOptimaProductType	INS_TYPE
TriOptimaCtpty	Counterparty (Short Name)
TriOptimaSubmittedCP	SUBMITTED_CP_ID
TriOptimaCtptyBIC	CP_BIC
TriOptimaCtptyLEI	CP_LEI
TriOptimaBook	BOOK
TriOptimaProcessingOrg	PO (Short Name)
TriOptimaRisk_Unit	RISK_UNIT
TriOptimaLEI_ProcOrg	PARTY_LEI
TriOptimaTradeDate	TRADE_DATE
TriOptimaTradeSettleDate	END_DATE
TriOptimaCcyPair	CURRENCY_PAIR
TriOptimaNewReceiveNominal	NEW_RECEIVE_NOTIONAL
TriOptimaNewReceiveCcy	RECEIVE_CURR
TriOptimaNewPayNominal	NEW_PAY_NOTIONAL
TriOptimaNewPayCcy	PAY_CURR
TriOptimaFxRate	EXCHANGE_RATE

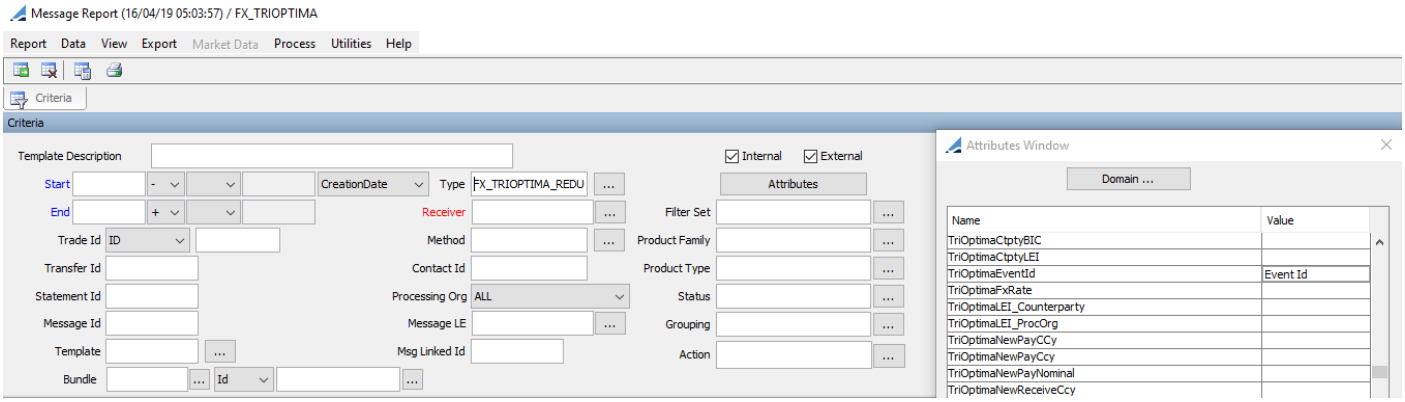
In case the message cannot be created:

- Comment is added on log generated by Scheduled Task TRI_REDUCE_FX_IMPORT if attribute Log = True
- Task is created with following characteristics:
  - Workflow Type: Exception

- Exception event type : EX_TRIREDUCE_FX_IMPORT
- Error message:

  “TRIOPTIMA_MATCH_KEY” from “EVENT_PROCESSING_ID” could not be processed due to “reason”

To obtain the list of BO messages created by an Unwind Proposal, user should use Message Report and set Attribute TriOptimaEventId to the Event ID in that file.



Additional information on BO Message creation:

Trade Id is retrieved as follows:

System will look for the Calypso Trade Id corresponding to the value in column TRADE_ID of the Unwind_Proposal.

Column TRADE_ID should match the TRADE_ID sent in the outgoing FX file (see TriOptima Columns – it is imperative that outgoing file is sent with TRADE_ID as explained in this chapter)

- If TRADE_ID does not contain “Near” nor “Far” – TRADE_ID = Calypso Trade Id
- If TRADE_ID contains “Near” – Remove last 4 characters to retrieve Calypso Trade Id
- If TRADE_ID contains “Far” – Remove last 3 characters to retrieve Calypso Trade Id

TriOptimaProcessingOrg is retrieved as follows:

RISK_UNIT (RISK_UNIT of Outgoing File should be populated with Processing Organisation)

If not found return Legal Entity with LE.Attribute LEI = PARTY_LEI

Else look for Legal Entity in Contact Table with the following characteristics:

Swift = PARTY_BIC

Role = ProcessingOrg *or* ALL

Product = Product Type of the identified Trade *or* ALL

Contact Type = TriOptima *or* ALL

TriOptimaCtpty is retrieved as follows:

Return Legal Entity with Short Name = SUBMITTED_CP_ID (Outgoing CP_ID should be populated with Counterparty.Short Name)

If Legal Entity with Short Name = SUBMITTED_CP_ID not found,

If not found return Legal Entity with LE.Attribute LEI = PARTY_LEI

Else look in the Contacts Database Legal Entity with the following characteristics:

Swift = CP_BIC

Role = CounterParty *or* ALL

Product = Product Type of the identified Trade *or* ALL
Contact Type = TriOptima or ALL

5.2.3 Checks at Import

Check 1: Mandatory Fields are present

List of Mandatory fields should be stored in the Domain Values below and bear TriOptima column names

Domain Value for FullTermination Mandatory Fields: TriOptimaFx.TerminationMandatory

Domain Value for Trade Mandatory Fields: TriOptimaFx.TradeMandatory

If TRANSACTION_TYPE = Full Termination, look for Mandatory fields in Domain Value TriOptimaFx.TerminationMandatory

At least the below fields should be included in Domain Value TriOptimaFx.TerminationMandatory:

- TRIOPTIMA_MATCH_KEY
- EVENT_PROCESSING_ID
- TRADE_ID
- TRANSACTION_TYPE

If TRANSACTION_TYPE = Trade, look for Mandatory fields in Domain Value TriOptimaFx.TradeMandatory

At least the below fields should be included in Domain Value TriOptimaFx.TradeMandatory:

- TRIOPTIMA_MATCH_KEY
- TRANSACTION_TYPE
- INS_TYPE
- EVENT_PROCESSING_ID
- SUBMITTED_CP_ID or CP_BIC (at least one should be available)
- BOOK

- TRADE_DATE
- END_DATE
- NEW_RECEIVE_NOTIONAL
- RECEIVE_CURR
- NEW_PAY_NOTIONAL
- PAY_CURR

If one of the fields above is missing an exception is thrown: “Missing Mandatory Fields”

Check 2: Check Trade Id, Book and Counterparty consistency:

If TRANSACTION_TYPE = Full Termination, then **Trade Id, Book and Counterparty** should match the **Trade Id, Book and Counterparty** from the Trade Id found by the system

Check 3: Duplicate

When creating a BO Message a duplicate control should be done based on the TriOptima column pair EVENT_PROCESSING_ID/TRIOPTIMA_MATCH_KEY:

If a BO Message in a status different than CANCELLED with TriOptima.EventId=EVENT_PROCESSING_ID and TriOptimaUniqueId=TRIOPTIMA_MATCH_KEY has already been created:

- Message is not created
- An exception is thrown: “Trade TRIOPTIMA_MATCH_KEY already been processed”

[Note: if a message exists but is in CANCELLED status then new message will be processed]

Check 4: Book and PO consistency

If PO associated with Book on Unwind File Field BOOK is not the same as the PO on the Unwind File Field an exception is thrown: “Book PO and File PO do not match”.

5.3 Workflows

5.3.1 FX_TRIOPTIMA_REDUCE Message Workflow

A Message workflow should be created with the following characteristics:

Product Type = All

SubType = FX_TRIOPTIMA_REDUCE

Orig Status	Action	Resulting Status	Use STP	Rules
NONE	NEW	PENDING	False	
PENDING	PROCESS	PROCESSED	True	TriUnwindFX
PROCESSED	REPROCESS	PROCESSED	False	TriUnwindFX

Message Workflow Rule TriUnwindFX

Workflow Rule TriUnwindFX will apply one of two processes described below depending on the value of data item TriOptima.TransactionType (TRANSACTION_TYPE of the UNWIND_PROPOSAL file).

TRANSACTION_TYPE can only take one of two possible values: FullTermination or Trade

- If TRANSACTION_TYPE = FullTermination – Apply Compress Action to the Linked Trade – See Action COMPRESS
- If TRANSACTION_TYPE = Trade – Create an FxForward or NDF Trade – See Create Trade

If Compress Action cannot be applied or New Trade cannot be created – Message will remain in Original Status

5.3.2 Trade Workflow

It is recommended to create a new workflow for MultiLeg Trades (FXSwap and FXNDFSwaps)

For single leg trades, a transition containing action COMPRESS should be available.

When importing the Unwind Proposal, the status of the trade being compressed should allow for action COMPRESS

Below an example of the transition:

Orig Status	Action	Resulting Status	Use STP	Rules
VERIFIED	COMPRESS	TERMINATED	False	
TERMINATED	REJECT*	VERIFIED	False	Reject

* The action REJECT (or the action of your choice like UNDO_COMPRESS for example) must be specified in the domain “TradeRejectAction” so the workflow rule Reject to be applicable.

For multiple leg trades, a subsequent transition containing action COMPRESS should be available.

It is recommended to have two different status to manage the fact that legs are compressed separately.

Different status does are also important as triggers to generate cancellation messages for each leg being compressed.

When importing the Unwind Proposal, the status of the trade being compressed should allow for action COMPRESS.

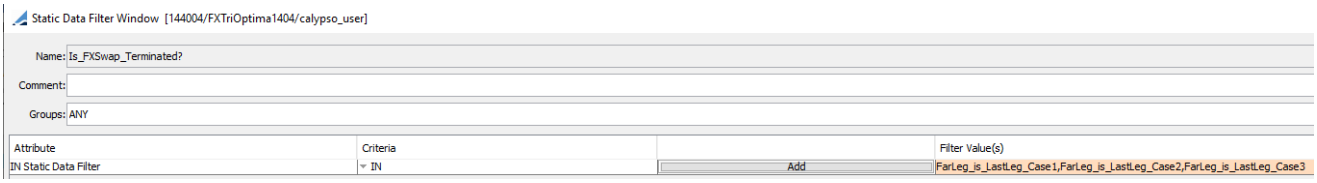
Below an example of the transition:

Orig Status	Action	Resulting Status	Use STP	SD Filter
VERIFIED	COMPRESS	PARTLY_COMPRESSED	False	
PARTLY_COMPRESSED	CLOSE	TERMINATED	True	Yes *(ex. Is_FXSwap_Terminated?)*
PARTLY_COMPRESSED	COMPRESS	TERMINATED	False	
PARTLY_COMPRESSED	REJECT*	VERIFIED	False	Reject
TERMINATED	REJECT*	VERIFIED	False	Reject
TERMINATED	REJECT*	PARTLY_COMPRESSED	False	Reject

* The action REJECT (or the action of your choice like UNDO_COMPRESS for example) must be specified in the domain “TradeRejectAction” so the workflow rule Reject to be applicable.

Static Data Filter on the second transition should identify if the leg being compressed is the last remaining leg. See example below.

Main Filter (ex. Is_FXSwap_Terminated?)



The Main filter is composed by 3 SD Filters:

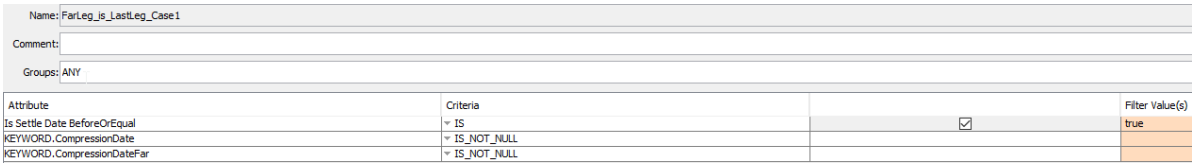
FarLeg_is_LastLeg_Case1

FarLeg_is_LastLeg_Case2

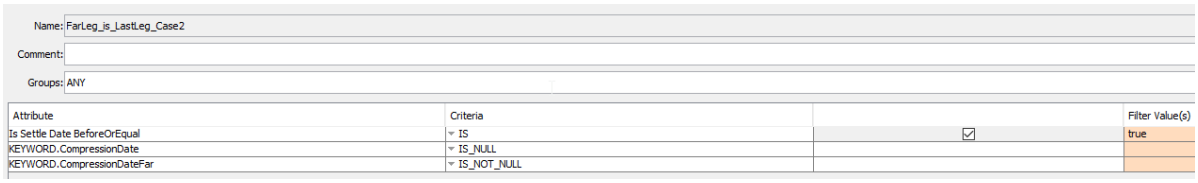
FarLeg_is_LastLeg_Case3

Component Filters:

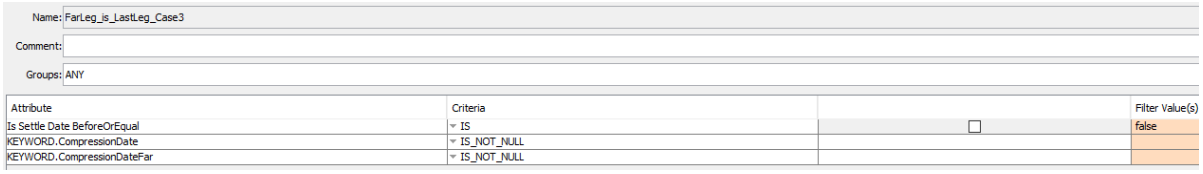
FarLeg_is_LastLeg_Case1



FarLeg_is_LastLeg_Case2



FarLeg_is_LastLeg_Case3



Action COMPRESS

For single leg trades, Action COMPRESS will

- Move the trade to the resulting status
- Set the following Trade Keywords:

  CompressionDate = UNWIND_DATE from unwind proposal file

  TriOptimaUniqueId = TRIOPTIMA_MATCH_KEY from unwind proposal file

  TriOptimaEventId = EVENT_PROCESSING_ID from unwind proposal file

  Compression = TRIREDUCE

  TerminatedByCompression = True

  TerminationReason = TriOptima

  TerminationType = TRANSACTION_TYPE from unwind proposal file (it should always be FullTermination)

  TerminationTradeDate = Date & Time when action COMPRESS was applied

  TerminationDate = UNWIND_DATE from unwind proposal file
- Cancel Transfers with Value Date > CompressionDate
- Amend (by Cancel/Replace) Effective Date on COT_REV and COT_RES postings/CRE to match CompressDate

For multiple leg trades, Action COMPRESS will

- Move the trade to the resulting status
- Set the following Trade Keywords:

  If Near Leg being compressed:

  CompressionDate = Date from Message Attribute CompressionDate

  TriOptimaUniqueId = TRIOPTIMA_MATCH_KEY from unwind proposal file

  TriOptimaEventId = EVENT_PROCESSING_ID from unwind proposal file

  Compression = TRIREDUCE

  TerminatedByCompression = True

  TerminationReason = TriOptima

  TerminationType = TRANSACTION_TYPE from unwind proposal file (it should always be FullTermination)

  TerminationTradeDate = Message Attribute CompressionDate

  TerminationDate = Date from Message Attribute CompressionDate

  If Far Leg being compressed:

  CompressionDateFar = Date from Message Attribute CompressionDate

  TriOptimaUniqueIdFar = TRIOPTIMA_MATCH_KEY from unwind proposal file

  TriOptimaEventIdFar = EVENT_PROCESSING_ID from unwind proposal file

  CompressionFar = TRIREDUCE

  TerminatedByCompressionFar = True

  TerminationReasonFar = TriOptima

  TerminationTypeFar = FullTerminationFar

  TerminationTradeDateFar = Message Attribute CompressionDate

  TerminationDateFar = Date from Message Attribute CompressionDate
- Cancel Transfers with Value Date > CompressionDate

  If Near Leg being compressed, only Near leg Transfer will be Cancelled

  If Far Leg being compressed, only Far leg Transfer will be Cancelled
- Amend (by Cancel/Replace) Effective Date on contingent postings to match CompressionDate(Far)

  If Near Leg being compressed, only COT_REV_NEAR_LEG and COT_RES_NEAR_LEG is amended

  If Far Leg being compressed, only COT_REV_FAR_LEG and COT_RES_FAR_LEG is amended

Regulatory (DTCC Module)

Two new reporting attributes were added

- CompressionFAR
- TerminatedByCompressionFAR

PSEvent Message triggered by compression is only generated for the leg being compressed when action = Compress

If Statement Id = 0 OR Msg_Attrib.LegType = Near – Near Leg is being Compressed

If Statement Id = 1 OR Msg_Attrib.LegType = Far – Far Leg is being Compressed

Message SetUp should be configured to trigger Termination Fpml file

Termination Template is generated with Transaction Type = Exit and LifeCycle Event = Compression

5.3.3 Create Trade

When TRANSACTION_TYPE = Trade, Message Workflow Rule TriUnwindFX will create a trade with the following characteristics:

Assume CURRENCY_PAIR = Currency 1 / Currency 2 – Identify Currency 1 from CURRENCY_PAIR – First 3 characters of CURRENCY_PAIR.

Product Type:

- If INS_TYPE = FX Forward – Product Type = FXForward
- If INS_TYPE = Non-Deliverable Forward – Product Type = FXNDF

SubType:

- If INS_TYPE = FX Forward – Product Type = FXForward
- If INS_TYPE = Non-Deliverable Forward – Product Type = FXNDF

Trade Direction:

If Currency 1 = PAY_CURR – Trade Direction = Sell

Else Trade Direction = Buy

CounterParty:

Return Legal Entity with Short Name = SUBMITTED_CP_ID (Outgoing CP_ID should be populated with Counterparty.Short Name)

If Legal Entity with Short Name = SUBMITTED_CP_ID not found,

If not found return Legal Entity with LE.Attribute LEI = PARTY_LEI

Then look in the Contacts Database Legal Entity with the following characteristics:

- Swift = CP_BIC
- Contact Type = TriOptima or ALL

Book = BOOK (BOOK of Outgoing File should be populated with Book)

Processing Organisation = Processing Organisation from Book obtained in 5

Trade Date = Message Attribute CompressionDate

Trade Settle Date = END_DATE

Ccy Pair = CURRENCY_PAIR

FXRate = EXCHANGE_RATE

Nominal:

If Currency 1 = PAY_CURR – Nominal = NEW_RECEIVE_NOTIONAL

Else Nominal = NEW_PAY_NOTIONAL

Trade Currency:

If Currency 1 = PAY_CURR – Trade Currency = RECEIVE_CURR

Else Trade Currency = PAY_CURR

External Reference = TRADE_ID

Trade Keywords:

- TriOptimaUniqueId = TRIOPTIMA_MATCH_KEY
- TriOptimaEventId = EVENT_PROCESSING_ID
- CreatedByCompression = True

5.3.4 Internal Replacement Trades

TriOptima can also send Unwind Proposal “Internal” csv file – only applicable if you are grouping multiple books into single risk units.

For example, if a flow trader has 3 books, but is happy to only control overall risk – then in your trade file you can specify books 1, 2 and 3, but have all of them under Risk Unit “FLOW”. When TriOptima compress, TriOptima will prescribe internal trades between books 1, 2 and 3 to keep each risk-flat, whilst all new external facing trades will come from one of these books. Doing this allows for better unwind results.

The file format Is identical to the External file. Both sides will be printed – if there is a new trade between book 1 and 2, there will be 2 rows printed, one from book 1’s perspective, the other from book 2.

No specific process is required to handle these files, but SDIs with the role CounterParty need to be setup for the Processing Organisation of each book.

Extending TriOptima Module

Clients can extend the TriOptima report if additional custom columns are needed.

Base knowledge about how to extend and customize Calypso reports can be found in the Calypso Developer's Guide in the "Reporting" chapter.

TriOptimaReport can be extended. Here is the list of involved classes:

- TriOptimaReport
- TriOptimaReportStyle
- TriOptimaReportTemplate
- TriOptimaReportTemplatePanel
- TriOptimaReportTemplateAdditionalPanel
- TriOptimaReportWindowHandler

When TriOptimaReportStyle is extended, you can customize the report in order to get additional custom columns and customize the way Calypso searches for the Scenario output.

Cleared Trades Compression

Compression is widely used in the Clearing Industry to reduce the outstanding notional and the operational cost/ risk. Several compression methods coexist. For instance, Automatic/ Selective netting that is offered directly by the CCP to its participants. This type of netting typically does not affect the risk profile of the portfolio since it is only reducing the notional based on trade netting keys. TriOptima on the other hand offers a compression service, TriReduce, that will optimize the risk of the portfolio and that allows compressing trades with different coupons, end dates and cashflows.

The solution consists of:

- A set of 3 outbound reports produced by Calypso and manually uploaded to the TriOptima Portal for trade linking. The REPORT scheduled task can be defined in Calypso to produce the reports at any given time.
- An inbound report is manually imported from TriOptima's portal and saved into a local directory. The file is then processed to Terminate the relevant trades and create replacement trades when needed using the TRI_REDUCE_CLEARING scheduled task. It translates the inbound report into Calypso format.

Scope

Only vanilla IRS and Basis Swaps are currently supported with the full economic reconciliation process

7.1 Outbound Reports

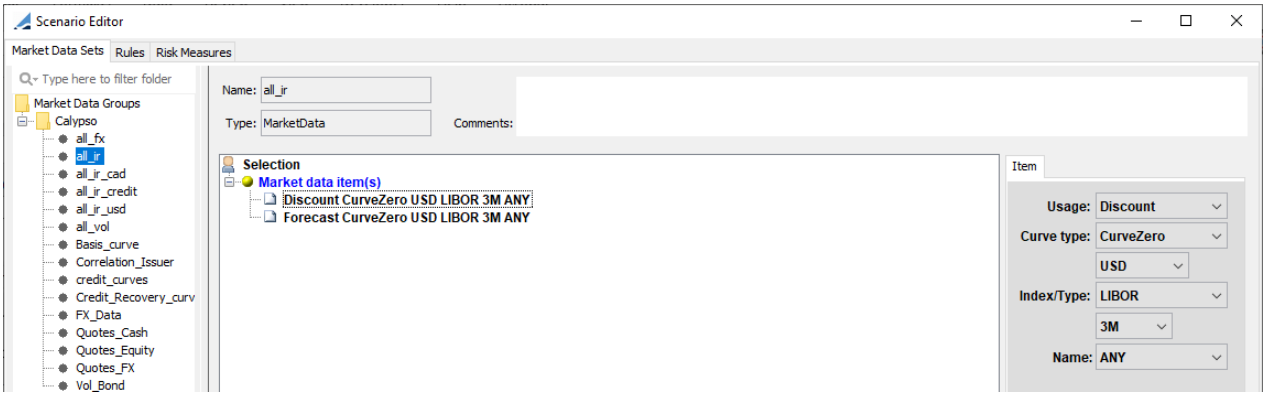
7.1.1 Scenario Analysis

The Delta report allows extracting data from the Scenario analysis.

The Scenario analysis needs to be run prior to the Delta report using the RISK_ANALYSIS scheduled task.

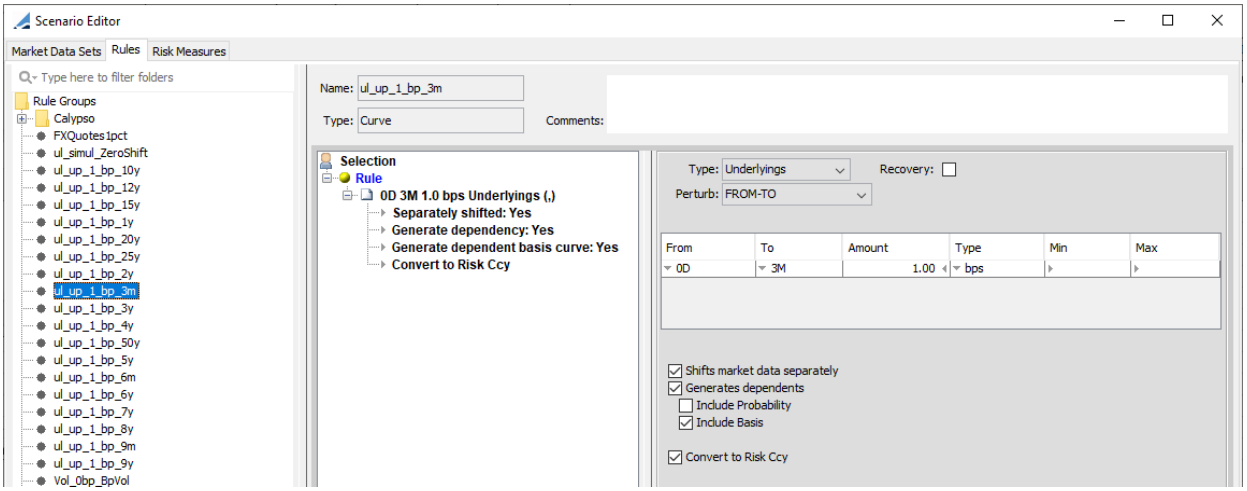
Go to Scenario Editor and:

- Define a Market Data Set that is linked to the relevant curves

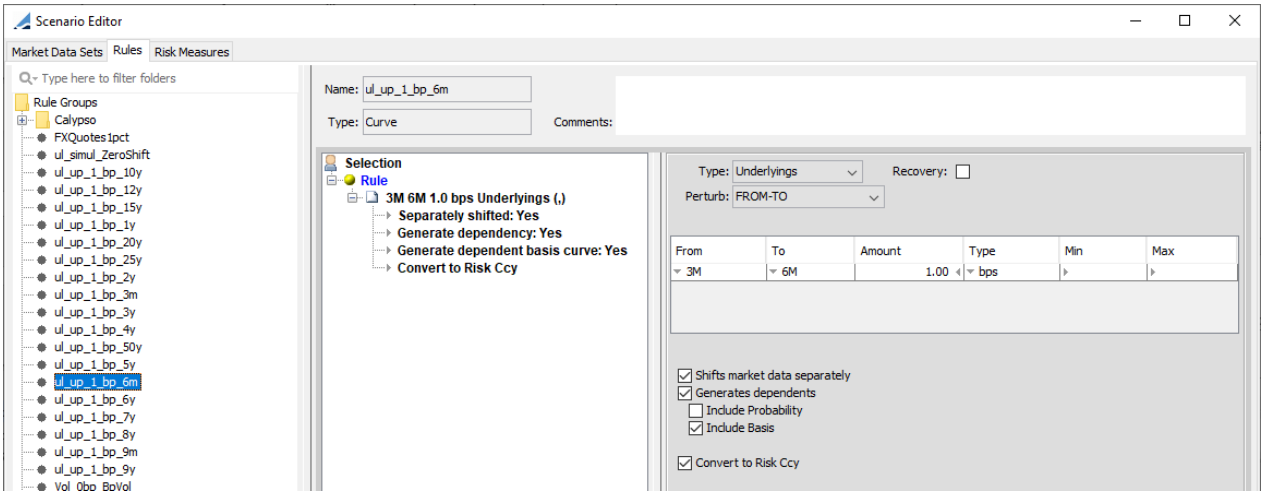


- Define a rule for each date bucket

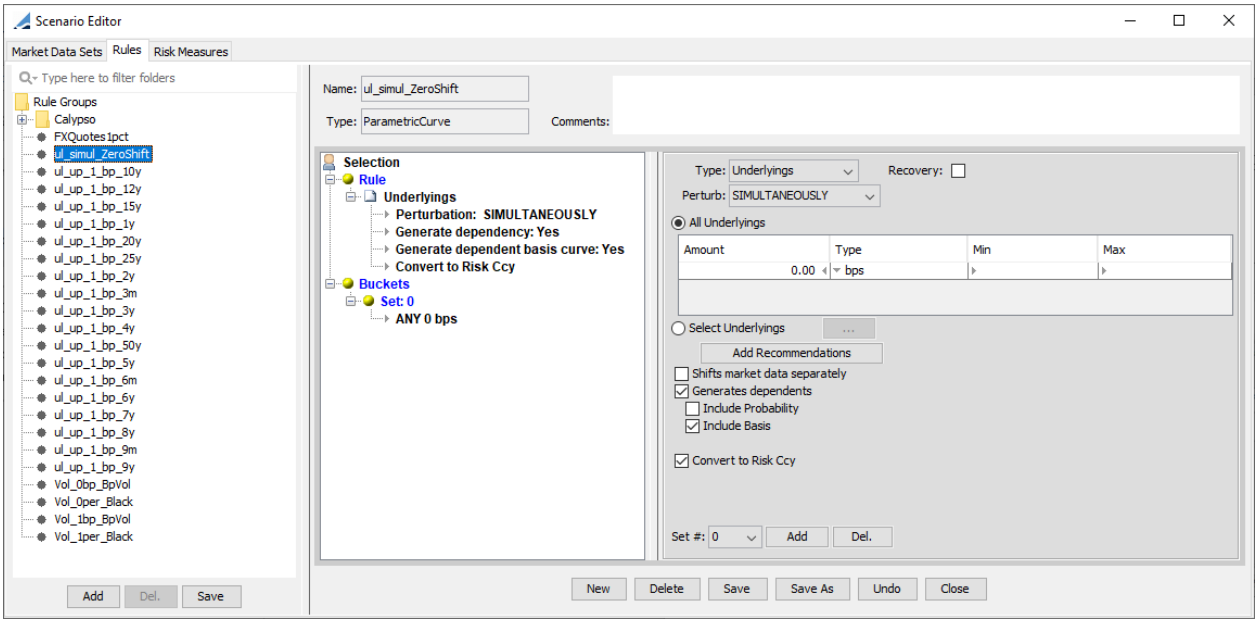
3 months bucket



6 months bucket, etc.



- Define a rule for the Base NPV



- Risk Measures: define a risk measure for each tenor/swap leg (pay/rec)

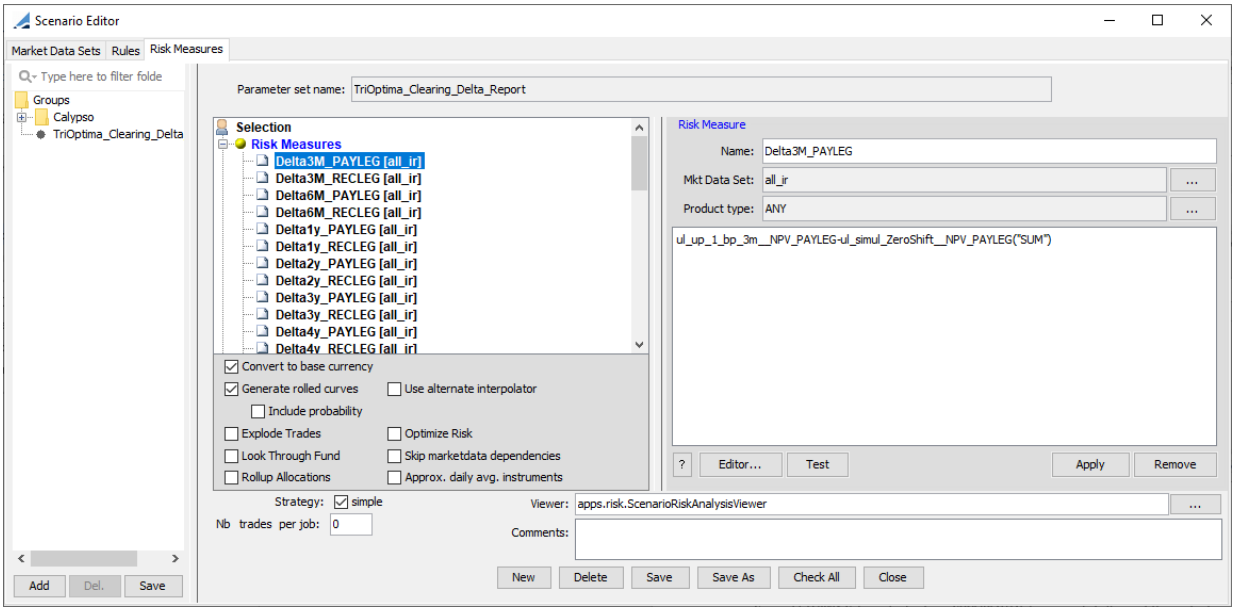
The formula should be the following:

Shift rule minus base rule

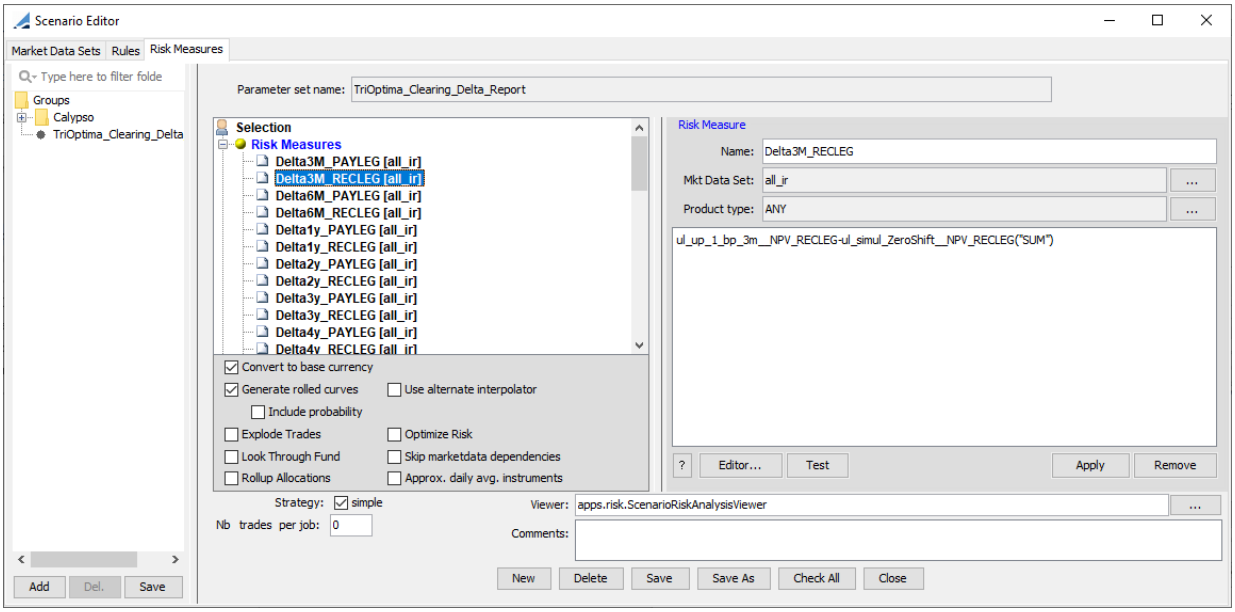
Double underscore after the rule name and before the Pricer Measure to be called

The (“SUM”) only needs to be added after the Simultaneous Base Rule

3 months Tenor Pay Leg config

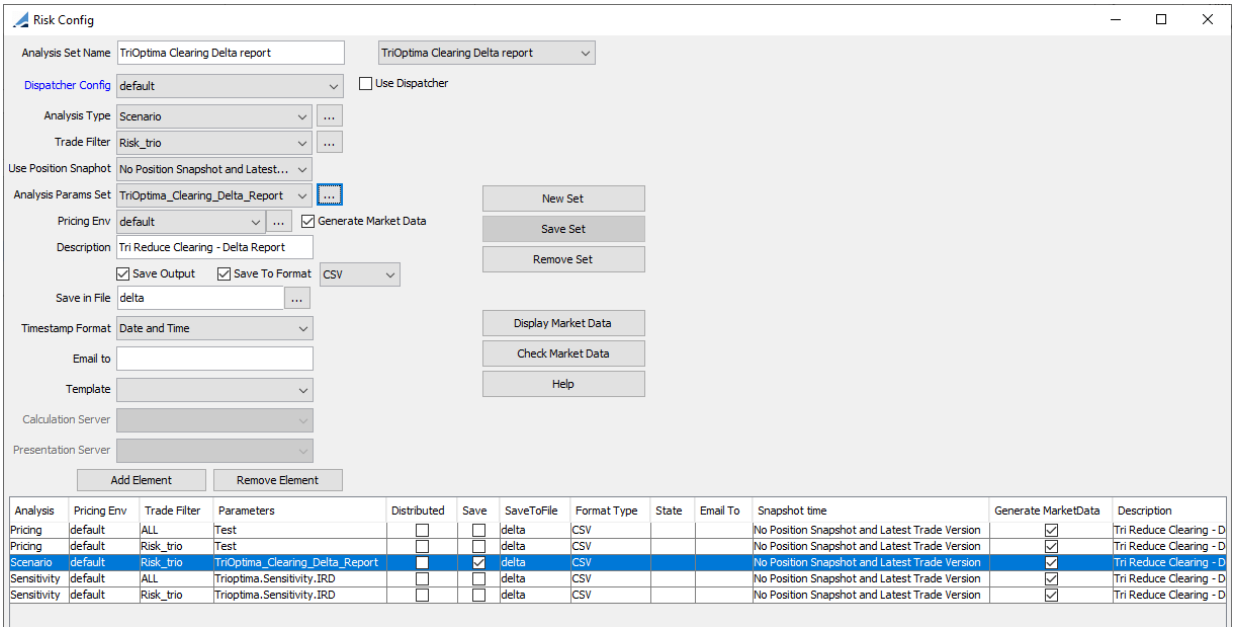


3 months Tenor Receive Leg config

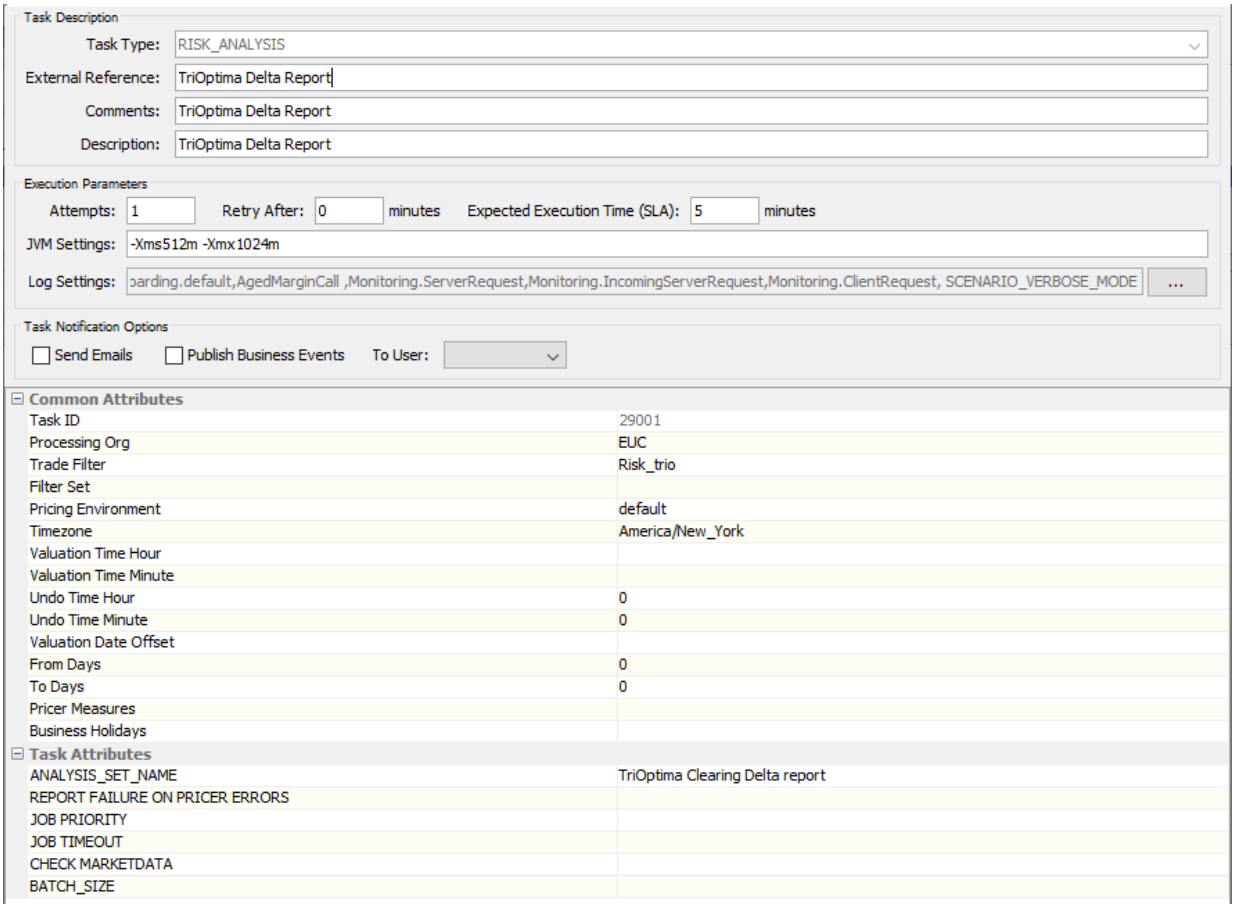


Repeat the same config for each Tenor that has been defined earlier.

- Add the Risk config with the desired Trade Filter based on the trade population to be submitted for compression to TriOptima



The Scenario analysis can be run using the RISK_ANALYSIS scheduled task.

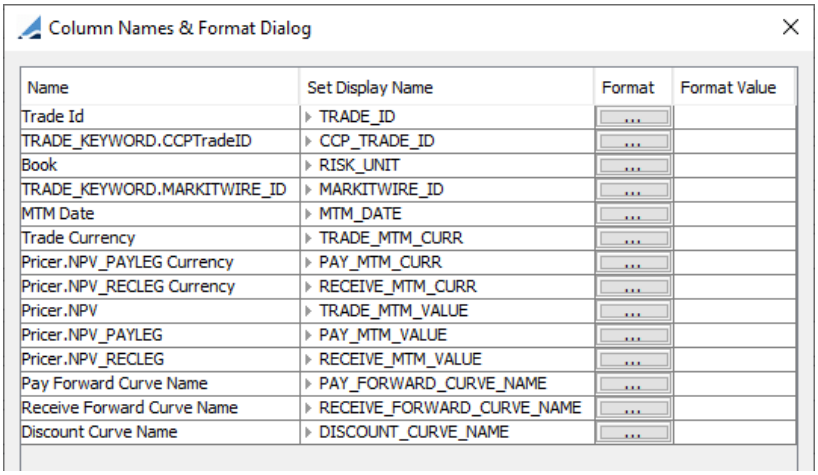


7.1.2 Trade Lean File (TriOptimaClearing Report)

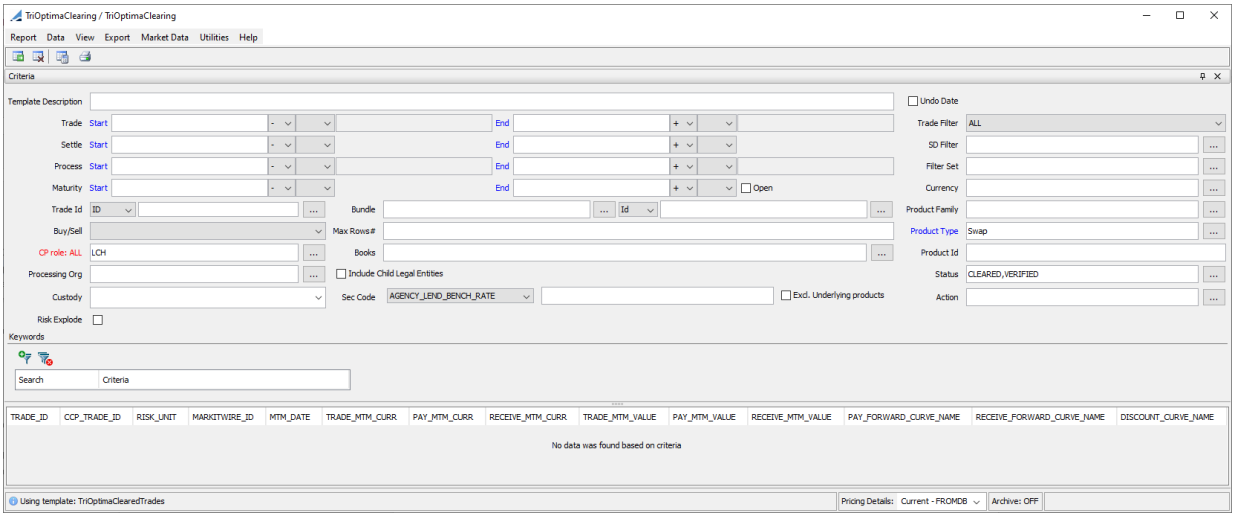
This report contains the trade specifics, MTM and curves used for pricing.

Add following action in your Navigator's menu: `reporting.ReportWindow$TriOptimaClearing`

Set up a trade template with column names as shown below, note that RISK_UNIT is user defined, it can be set as a book, PO, Keyword etc. depending on your organization.



Define the relevant criteria in the report such as Currency, CCP, trade status etc. to retrieve the desired trade population.



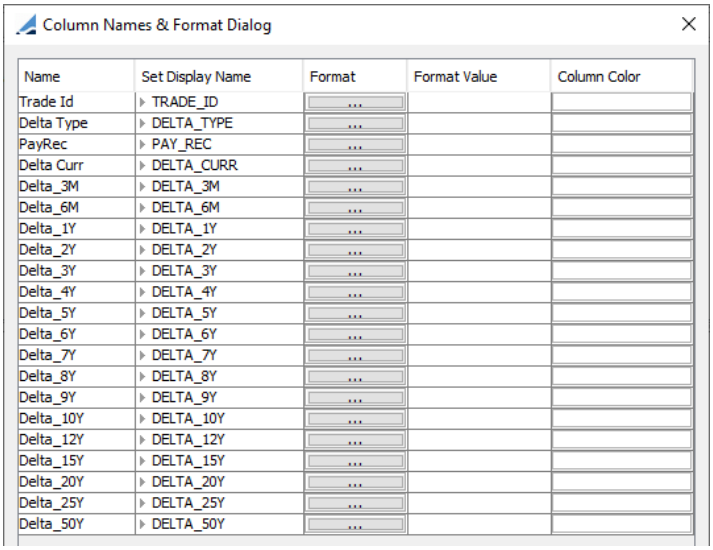
7.1.3 TriOptima Delta Report

This report contains risk data for each leg.

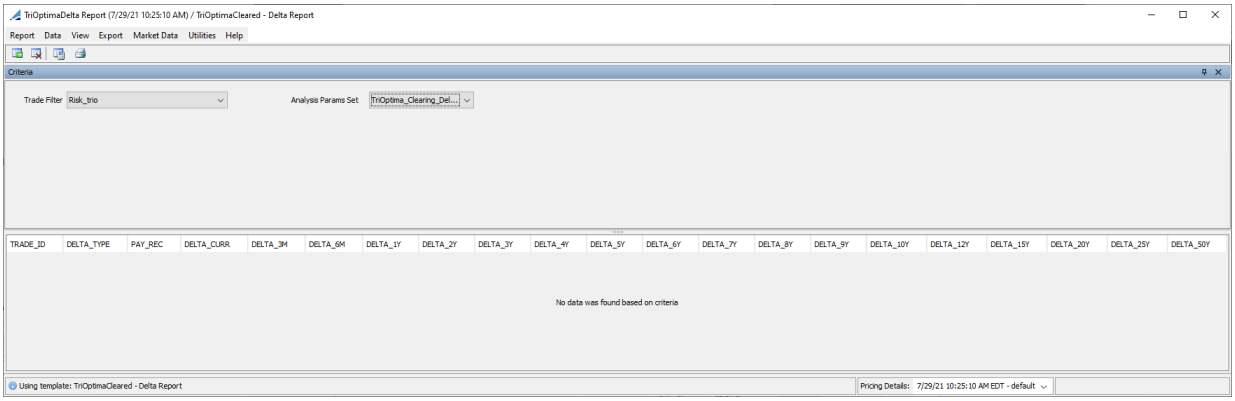
Add following action in your Navigator's menu: `reporting.ReportWindow$TriOptimaDelta`

Set up a trade template with column names as shown below, note that the tenor buckets need to exactly match the tenor defined in the Risk analysis or the system will throw an error

Note that prior to running the Delta report, you need to run the Scenario analysis previously defined.



In the Analysis Params Set field set the Scenario analysis that you have set up and eventually defined a trade filter for the trade population that needs to be submitted for compression.

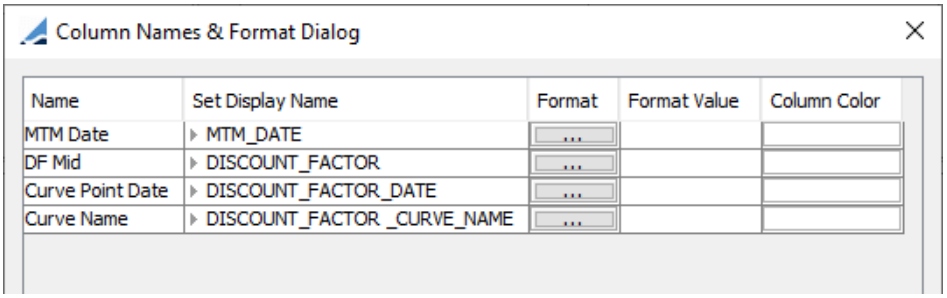


7.1.4 Discount Curve Report

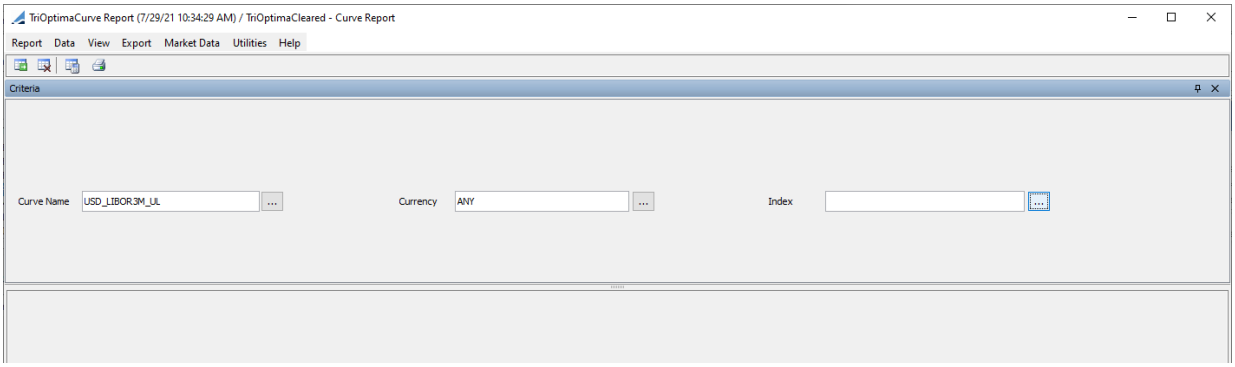
This report contains the discount factors and curves.

Add following action in your Navigator's menu: `reporting.ReportWindow$TriOptimaCurve`

Set up a trade template with column names as shown below



Select the curve(s) required for the compression cycle



7.2 Inbound Report

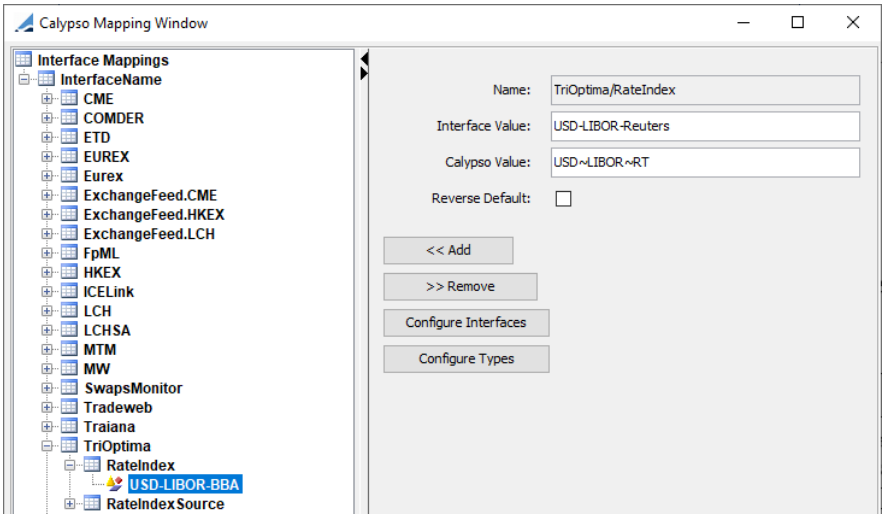
7.2.1 Post-Compression Activity

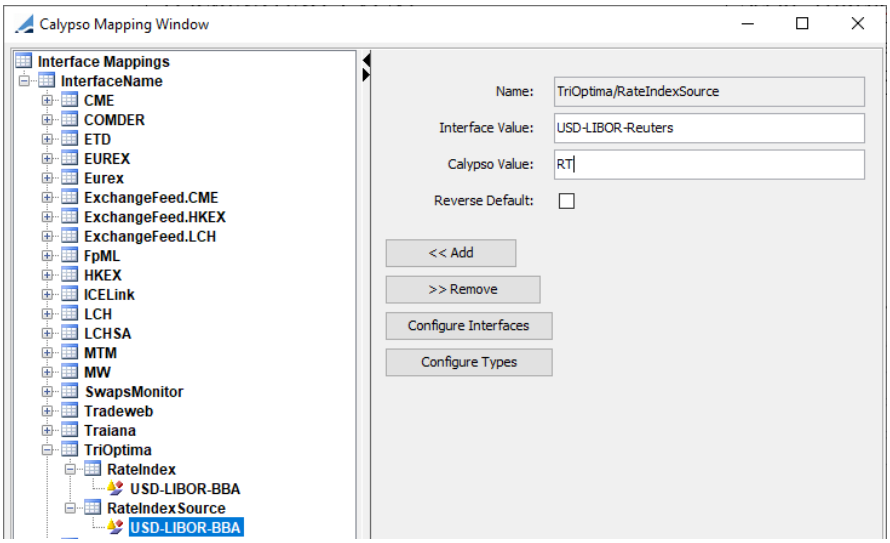
Once the compression cycle has been completed, TriOptima will provide the Proposal Complete file that includes the information about the trades to be terminated and (if applicable) the residual trades to be created. This file is also enriched with the CCP information (CCP trade id, UTI/USI, Cleared date etc.)

The user will have to upload the file from TriReduce portal and store it in a local directory for Calypso to process.

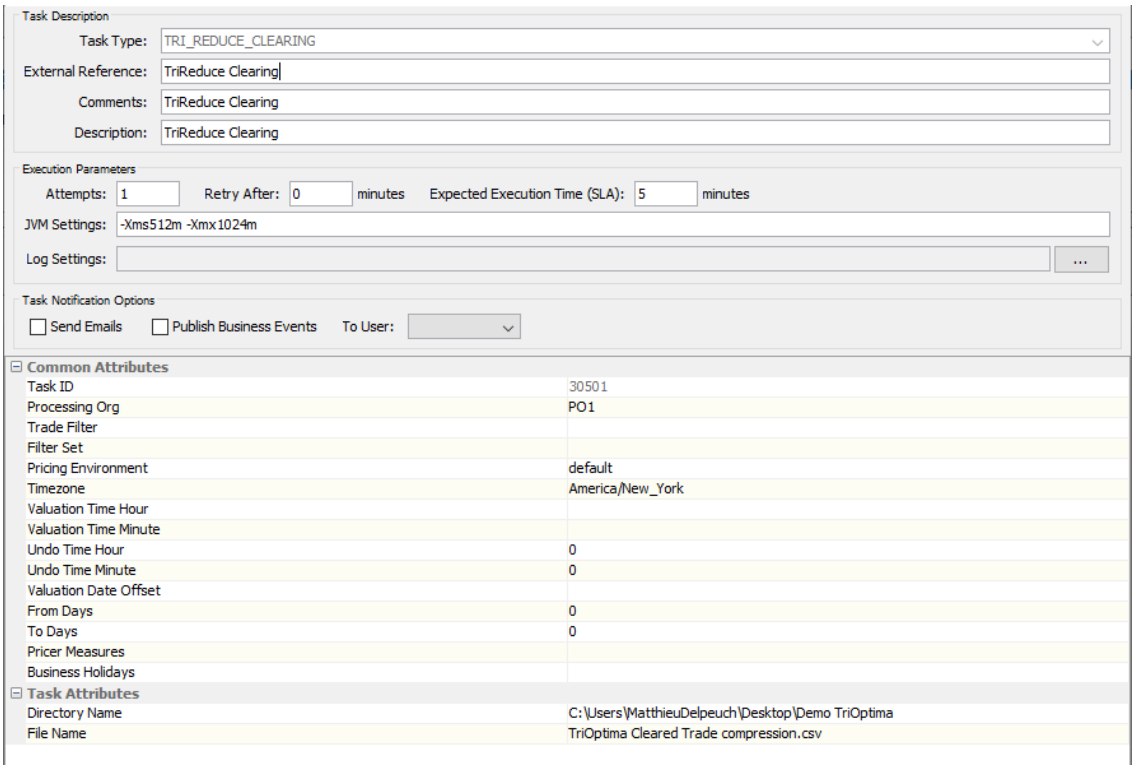
7.2.2 Mapping Window

The rate indexes need to be mapped as shown below


Calypso Mapping Window
Interface Mappings
InterfaceName
CME
COMDER
ETD
EUREX
Eurex
ExchangeFeed.CME
ExchangeFeed.HKEX
ExchangeFeed.LCH
FpML
HKEX
ICELink
LCH
LCHSA
MTM
MW
SwapsMonitor
Tradeweb
Traiana
TriOptima
RateIndex
USD-LIBOR-BBA
RateIndexSource
Name: TriOptima/RateIndex
Interface Value: USD-LIBOR-Reuters
Calypso Value: USD~LIBOR~RT
Reverse Default:
<< Add
>> Remove
Configure Interfaces
Configure Types


Calypso Mapping Window
Interface Mappings
InterfaceName
CME
COMDER
ETD
EUREX
Eurex
ExchangeFeed.CME
ExchangeFeed.HKEX
ExchangeFeed.LCH
FpML
HKEX
ICELink
LCH
LCHSA
MTM
MW
SwapsMonitor
Tradeweb
Traiana
TriOptima
RateIndex
USD-LIBOR-BBA
RateIndexSource
USD-LIBOR-BBA
Name: TriOptima/RateIndexSource
Interface Value: USD-LIBOR-Reuters
Calypso Value: RT
Reverse Default:
<< Add
>> Remove
Configure Interfaces
Configure Types

7.2.3 TRI_REDUCE_CLEARING Scheduled Task



Task Attributes

- Directory Name – Complete path to the directory where the file is stored
- File Name – TriOptima's Proposal file name

The system will populate the trade keywords below on the Original terminated trades and on the residual trades:

Trade Keywords	Value
TriOptimaID	This ID binds all the trades together that are part of the same compression
TERMINATING_EVENT	Set to 'TriReduce'
TR_CompressionType	Set to 'Termination' for the original trades and to 'Residual' for the Residual trades

Release Notes

8.1 Version 1.7.4

HD169333 / TRI-152 – Unable to create TriOptima report template.

8.2 Version 1.7.5

TRI-211 – SQL binding implementation.

8.3 Version 1.7.6

TRI-234 – Compatibility with DTUP schema changes for trade ID.

8.4 Version 1.8.2

TRI-159 – Error when opening “Configure Column” in TriOptima Report.

TRI-155 – Compatibility with Data Uploader schema changes.

TRI-220 – Modify Schema Data message attribute TriOptimaTrade Id with TriOptimaTradeId.

HD158551 / TRI-175, TRI-173, TRI-222 – New Scheduled Task TRI_REDUCE_FX_IMPORT to perform compression of FX Forwards.

TriOptima report – To perform reporting for FX compression, you must set the report type to FX_Report.

See details above.

HD169333 / TRI-151 – Unable to create TriOptima report template.

8.5 Version 1.8.3

Component	HelpDesk	Issue	Type	Description
TriOptima 1.8.3		TRI-243	Enh	Issue – Upgrade com.thoughtworks.xstream:xstream library to version 1.4.11.1.

8.6 Version 1.8.4

Component	HelpDesk	Issue	Type	Description
TriOptima 1.8.4		TRI-252	Enh	Issue – Remove duplicate domain values from TriOptima schema data.

8.7 Version 1.8.5, 1.8.6

Component	HelpDesk	Issue	Type	Description
TriOptima 1.8.6		TRI-278	Issue	Issue – Error when loading TriOptima report when report type is FX_Report due to CLS module dependency. Fix – Modified TriOptima report to use a method from BindVariablesUtils to load CLS Trade info.

8.8 Version 1.10.0

Component	HD/Case	RPM	Issue	Type	Description
TriOptima 1.10.0	00010746	RPM-5388	TRI-296	Enh	Issue – Add support for TriOptima for Cleared Trades. Fix – Please refer to Cleared Trades Compression section for details.

8.9 Version 1.10.1

Component	HD/Case	RPM	Issue	Type	Description
TriOptima 1.10.1		RPM-4313	TRI-309	Enh	Issue – Technical issue – Changes for using “internal” Data Uploader module.

8.10 Version 1.11.0

Component	HD/Case	RPM	Issue	Type	Description
TriOptima 1.11.0		RPM-6946	TRI-326	Sec	Issue – Security – Upgrade Xstream library to version 1.4.18.

8.11 Version 1.12.0

Component	HD/Case	RPM	Issue	Type	Description
TriOptima 1.12.0		RPM-10798	TRI-333	Sec	Issue – Secure JaxbUnmarshaller. Fix – Updated Infosec library to version 4.1.19 to address security issue with JaxbUnmarshaller.

8.12 Version 1.13.0

Component	HD/Case	APL	Issue	Type	Description
TriOptima 1.13.0		APL-4782	TRI-342	Sec	Issue – Security – Upgrade Xstream library to version 1.4.20.

8.13 Version 1.14.0

Component	HD/Case	APL	Issue	Type	Description
TriOptima 1.14.0			TRI-362	Enh	Issue - Removal of calypso-id-api jar dependency. Impact Analysis - Created packages "com.calypso.helper" and "com.calypso.cia.util", created wrapper classes by module.

8.14 Version 2.1.0

Component	HD/Case	RPM	Issue	Type	Description
TriOptima 2.1.0		RPM-6946	TRI-327	Sec	Issue – Security – Upgrade Xstream library to version 1.4.18.

8.15 Version 2.2.0

Component	HD/Case	RPM	Issue	Type	Description
TriOptima 2.2.0		RPM-10846	TRI-334	Sec	Issue – Secure JaxbUnmarshaller. Fix – Addressed security issue with JaxbUnmarshaller.

8.16 Version 2.3.0

Component	HD/Case	RPM	Issue	Type	Description
TriOptima 2.3.0		RPM-10048	TRI-331	Enh	Issue – Technical - Add support for gradle bom. Fix – Added support for gradle bom.

8.17 Version 2.4.0

Component	HD/Case	APL	Issue	Type	Description
TriOptima 2.4.0		APL-4671	TRI-341	Sec	Issue – Security - Upgrade the com.thoughtworks.xstream:xstream library to version 1.4.20.

8.18 Version 2.5.0, 2.6.0

Important Note - Using "yyyy" pattern instead of "YYYY" for dates - See issue TRI-381 for details.

Component	Case	APL	Issue	Type	Description
TriOptima 2.6.0		APL-13016	TRI-378	Sec	Issue – Security - Upgrade the com.thoughtworks.xstream:xstream library to version 1.4.21.
TriOptima 2.6.0	00148356, 00148550		TRI-381	Issue	Issue - Year-end Java Date Formatting Issue with "YYYY" pattern. It should be "yyyy". Impact Analysis - Local impact - Using "yyyy" pattern instead of "YYYY".
TriOptima 2.6.0			TRI-361	Enh	Issue – Technical - Removal of calypso-id-api library dependency.

Component	Case	APL	Issue	Type	Description
					Impact Analysis – Removed calypso-id-api library dependency.

8.19 Version 3.1.0

Component	HD/Case	APL	Issue	Type	Description
TriOptima 3.1.0		APL-10821	TRI-371	Sec	Issue – Security – The following libraries have been upgraded: spring.springframework:spring to version 6.1.11 springboot-* to version 3.3.1 spring-security to version 6.3.1 commons-text to version 1.12.0 camel to version 4.7.0 activemq to version 6.1.2 Jackson Library to version 2.17.2 Log4j2 library to version 2.23.1 xbean-spring to version 4.25 guava to version 33.2.0-jre

8.20 Version 3.1.1

Important Note - Using "yyyy" pattern instead of "YYYY" for dates - See issue TRI-380 for details.

Component	Case	APL	Issue	Type	Description
TriOptima 3.1.1	00148356, 00148550		TRI-380	Issue	Issue - Year-end Java Date Formatting Issue with "YYYY" pattern. It should be "yyyy". Impact Analysis - Local impact - Using "yyyy" pattern instead of "YYYY".

8.21 Version 3.2.0

Component	Case	APL	Issue	Type	Description
TriOptima 3.2.0		APL-13204	TRI-387	Sec	Issue – Security - Upgrade com.thoughtworks.xstream:xstream library to version 1.4.21.